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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. 32,398. Boot Cleaning Machine.

(Machine à cirer les chaussures.)

Reinhold Handel, Leipzig, Germany, 1st October, 1889; 5 years.

Claim.—1st. The general arrangement and combination of parts, comprising the various improved boot and shoe cleaning apparatus, substantially as described. 2nd An apparatus for cleaning boots and shoes, in which brush rollers are used, the shape of which corresponds to the shape of the boots and shoes, the said brush rollers being driven by hand, by foot, or by power, substantially as described. 3rd. In apparatus for cleaning boots and shoes, the employment of several rotating brushes, and the arrangement of the same in such a manner as to clean one or more at a time, and to act simultaneously upon all portions of the boot, substantially as described. 4th. In apparatus of the indicated nature, the employment of a last to stiffen the boot or shoe under treatment, the said last having a shank *o* to expedite the handling of the boot while being brushed, substantially as described.

No. 32,399. Reversible Share for Ploughs, Scarifiers and Cultivators. (*Soc réversible pour les charrues, scarificateurs et cultivateurs.*)

William Heithersay, Peterburg, South Australia, 1st October, 1889 5 years.

Claim.—1st. A reversible share or sock for ploughs, as specified. 2nd. A reversible share or sock c having a socket c^1 adapted to fit the plough-foot, which is formed in such a manner as to enable the said share or sock to be reversed, substantially as and for the purpose set forth. 3rd. The improved share or sock *c* formed with the socket c^1, substantially as described.

No. 32,400. Composition of Matter called "Firimite Artificial Stone." (*Composition de matières dite "Pierre artificielle Firimite."*)

George M. Ford, Montreal, Que., 1st October, 1889; 5 years.

Claim.—A compound for the purposes described of one part Portland cement, two parts of crushed serpentine, three-fourths part of water, one-half pound saltpetre in twenty gallons of water, the whole to be mixed together into a plastic state before moulding, as described for the purposes set forth.

No. 32,401. Cultivator Tooth.

(Coutre de cultivateur.)

Joseph Drader, (co-inventor with Andrew B. McKay), London, Ont., 1st October, 1889; 5 years.

Claim.—1st. A pivotal cultivator tooth E having a returned end E^1, and a stop H, and pivotally secured to and in combination with the stud or pin C, stud or pin F, suitable standards or supports for said studs or pins C and F, and any suitable means for compressing the returned end E^1 of the tooth E, substantially as and for the purposes set forth. 2nd. A pivoted cultivator tooth E having a returned end E^1, and a stop H, and pivotally secured to and in combination with the stud or pin C, the stud or pin F, suitable standards or supports for said studs or pins C and F, anti-friction roller G, and lever J, and means for holding said lever at the position to which it is adjusted, substantially as and for the purpose set forth.

No. 32,402. Fruit Basket. (*Panier à fruits.*)

William A. Clark, Ottawa, Ont., 1st October, 1889; 5 years.

Claim.—1st. A basket comprising an oblong body A, and curved handle D across the middle, and having wooden bows E, E, one on each side, and approximately parallel to the handle, and secured rigidly to the basket to sustain other baskets when piled one upon the other, as set forth. 2nd. A coverless basket having two or more bows E, E across the top, and rigidly attached to opposite sides of the body A, as set forth.

No. 32,403. Electrical Switch.

(Commutateur électrique.)

Walter Thompson, Orange, N. J., U. S., and Allan C. Thompson, Toronto, Ont., 1st October, 1889; 5 years.

Claim.—1st. The improved electric switch herein described, combining therein a sliding bar of non-conducting material provided with upper and lower angular grooves or depressions as shown, each alternate groove being covered with metallic plates connected by a metallic pin as shown, said bar being arranged and adapted to reciprocate, and upper and lower spring conducting arms, all said parts being arranged and combined, as described and for the purpose set forth. 2nd. The improved electric switch herein described, combining therein, with suitable spring-conducting arms and electric conductors connected therewith, a non-conducting reciprocating bar having upper and lower angular grooves, each alternate series of grooves being provided with metallic terminal plates connected together by a metallic pin as shown, substantially as and for the purpose set forth. 3rd. The improved electric switch herein described, combining therein, with a non-conducting reciprocating bar provided with upper and lower grooves, each alternate series of said grooves being provided with conducting plates connected by conducting pins, and spring conducting arms arranged in pairs, and adapted to complete or break an electric current in connection or disconnection with said conducting plate, as described, all said parts being arranged as described and for the purpose set forth.

No 32,404. Carriage Curtain Fastening.

(Arrête-store de voiture.)

William M. Buchnau, Columbia, Tenn., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The herein described carriage curtain fastening comprising a hook or pin upon which the curtain is hung and a return bend spring, the inner portion of which is secured to the frame of the carriage, and the outer portion of which is bent downward and binds the selvage of the curtain when inserted thereunder closely against the frame, substantially in the manner and for the purpose described. 2nd. A carriage curtain fastening comprising a return bend spring D, a pin C, the spring D being arranged to embrace and bind the selvage of the curtain against the carriage frame after the same is hung upon the pin, substantially as and for the purpose described.

No. 32,405. Construction of Buildings.

(Construction de bâtisses.)

James E. Rankin, Elk Rapids, Mich., U.S., 2nd October, 1889; 5 years.

Claim.—A building for use as a silo constructed of a series of frames 11, angle irons 13 connecting the corners of said frames, lining 18 on the inner face of said frames, sheathing 20 on the outer face of said frames, water-proof material 21 covering said sheathing, clapboarding 22 covering said water-proof material, a roof 23 having a removable section 26, a perpendicular brace rod 27 connected to said roof, and horizontal brace rods 29 attached to said brace rod 27 and to the inner sides of the building, substantially as described.

No. 32,406. Hoe. (*Houe.*)

Elnathan J. Gates, Rochester, N. Y., U. S., 2nd October, 1889; 5 years.

Claim.—1st. A hoe consisting of a blade having a long straight, or slightly curved, bottom cutting edge, and side edges curving inwardly upwardly from at or near the bottem to a central integral shank, the height of the blade being about two-thirds of its width, the blade so constructed being narrow both laterally and vertically: in combination with a shank integral with the blade, which shank terminates in a neck and tang adapted to enter a handle, substantially as described.

No. 32,407. Air Brake Signal.

(*Signal de frein atmosphérique.*)

Allen B. Collins, Burlington, Iowa, U.S., 2nd October, 1889; 5 years.

Claim.—1st. In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, cocks for closing such pipe, and whistles attached to the cocks, and adapted to be blown when the cocks are turned to close the main air pipe, substantially as described. 2nd. In an air brake signal, the combination of the main air pipe provided with cocks for closing the same, a branch pipe connecting with the main pipe, and provided with a whistle, and a valve for opening and closing the pipe, and a spring lever connected with the handle of one of the cocks in the main air pipe and moved thereby to open and close the valve in the branch pipe, substantially as described. 3rd. In an air brake signal, the combination of the main air pipe provided with cocks for closing the same, a branch pipe connected with the main air pipe and provided with a whistle and a valve, whereby the pipe is opened and closed, and a slotted spring lever attached to the handle of one of the cocks in the main pipe, and moved thereby in one direction to open the valve in the branch pipe, and moved in the other direction by means of a spring to close such valve, substantially as described.

No. 32,408. Band Cutter Platform for Thrashing Machines. (*Plateforme de coupe-hart pour machines à battre.*)

Alfred B. Leeper, Owaneco, Ill., U.S., 2nd October, 1889; 5 years.

Claim.—An improved platform for attachment to the wheeled truck of a thrashing machine, the same consisting of the flat body having near one end a concavity adapted to fit the rim of a wheel, the hook-shaped clamping-bolt applied to such recessed end of the body, and a brace-bar hinged to the underside of said body near its outer end, substantially as shown and described.

No. 32,409. Mill for Grinding and Sheeting Rubber. (*Moulin pour polir et étendre le caoutchouc.*)

Nathaniel C. Mitchell, Philadelphia, Penn., U.S., 2nd October, 1889; 5 years.

Claim.—1st. In a rubber grinding or sheeting mill, the combination, with the rolls, of guides for conducting the rubber sheet around one of said rolls out of contact therewith, substantially as described. 2nd. The combination, with the grinding and sheeting rolls, of guiding devices for conducting the rubber sheet around one of said rolls, said guiding devices comprising rollers placed respectively above and beneath the nip of the rolls, and a curved smooth-surface sheet behind one of said rolls, substantially as described. 3rd. The combination of the grinding and sheeting rolls, the guides arranged around one of said rolls, and the doctor-blade for guiding the sheet over the first of said guides, substantially as described.

No. 32,410. Apparatus for Washing and Separating Rubber from foreign Substances. (*Appareil pour laver le caoutchouc et le séparer des corps étrangers.*)

Nathaniel C. Mitchell, Philadelphia, Penn., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The combination, with the separator having a diaphragm partially dividing the same, of a rubber-feeding device and water-supply pipe on one side of said diaphragm, and an overflow pipe on the other side thereof, substantially as described. 2nd. The combination, with the separator, having a diaphragm extending part way down the same, of rubber-feeding devices, and a main water-pipe on one side of said diaphragm, an overflow-pipe on the other side of said diaphragm, and a smaller water-pipe discharging into said separator below the diaphragm, and at the side opposite said overflow-pipe, substantially as described. 3rd. In a rubber-cleansing apparatus, the combination, of the separator, the rubber-feeding device, the water-pipe discharging into said separator, the overflow-pipe for the rubber, the return water-passage, and the pump for maintaining a constant circulation of water through the separator, substantially as described. 4th. The combination, with the separator feeding device, and water-supply pipe, of the overflow pipe, a screen for receiving the matters discharged by said pipe, and the return water-passage under said screen, substantially as described. 5th. The combination, of the separator, the water-supply pipe therefor, the reservoir, the pump, the overflow pipe from the separator, the screen onto which said overflow discharges, and the return-passage leading from beneath said screen to said reservoir, said return-passage being provided with means for purifying the water, substantially as described. 6th. In a rubber cleansing apparatus, the combination, with rubber-feeding mechanism and a water-supply, of a separator consisting of a vessel tapering from the top downward, a vertical diaphragm extending across said vessel and terminating some distance from the bottom thereof, said vessel having an overflow opening on the side of said diaphragm opposite to the feeding mechanism, a main water-pipe discharging downward on the same side as the feeding mechanism, and a small water-pipe discharging into said vessel near the bottom thereof and in the direction of the overflow, substantially as described.

No. 32,411. Coffee Surrogate. (*Café au lait.*)

Albert W. Rehnstrom, Malhammer, Sweden, 2nd October, 1889; 5 years.

Claim.—1st. Mode of preparing a coffee-surrogate by evaporating whey alone, or whey mixed with milk, or milk alone, to a mouldable mass, shaping this mass into suitable pieces, and after being dried roasting the same, either alone, or together with coffee beans. 2nd. A coffee-surrogate prepared by means of evaporating whey alone, or whey mixed with milk, or milk alone, to a mouldable mass, which is afterwards shaped into suitable pieces, and, after being dried, roasted either alone or together with coffee beans, with the view that this roasted material may be used as a coffee-surrogate alone by itself, or together with roasted coffee.

No. 32,412. Cough Syrup. (*Sirop pour la toux.*)

Francis M. Jacques, New London, Conn., U. S., 2nd October, 1889; 5 years.

Claim.—The herein described cough syrup, consisting of rock polypody, licorice, wild cherry bark, hoarhound herb, rock candy, granulated sugar, glycerine and rye whisky, in the proportions specified.

No. 32,413. Manifold Shipping Book.

(*Livre varié de chargement.*)

Hugo Loewenbach, Milwaukee, Wis., U. S., 2nd October, 1889; 5 years.

Claim.—1st. A manifold shipping book, consisting of a series of blank leaves of thin paper extending the entire width of the book, having between them one or more other blank leaves of similar material of less width than the first-named leaves. 2nd. In a manifold shipping book, the combination of series of permanent and detachable leaves bound together, each of the former having a portion of its edge cut off or out, so as to expose part of the leaf below. 3rd. A manifold shipping book, consisting of alternate permanent and detachable leaves, the latter being of greater width than the former, and provided with a vertical line of perforations adjacent to the stub of each detachable leaf, which latter are adapted to be folded over the permanent leaves, and interposed pieces of carbon transfer paper, for the purpose of making manifold entries at one and the same time.

No. 32,414. Signalling Lantern.

(*Fanal à signaux.*)

John W. Hayward, Saint John, N.F.L., 2nd October, 1889; 5 years.

Claim.—1st. The combination, with a lantern, provided with condensing and focusing lenses, of stencils and a stencil-operating mechanism, substantially as described. 2nd. The combination, with a lantern, provided with condensing and focusing lenses, of a stencil and a means for throwing said stencil into position between the lenses, substantially as described. 3rd. The combination, with a lantern, provided with condensing and focusing lenses, of stencil plates and a means for operating such plates, substantially as described. 4th. The combination, with a lantern provided with condensing and focusing lenses, of stencil plates, keys and connections between the keys and the plates, substantially as described. 5th. The combination, with a lantern, provided with condensing and focusing lenses, of stencil plates, springs arranged in connection with said plates, operating keys and connections between the keys and the plates, substantially as described. 6th. The combination, with a lantern, provided with condensing and focusing lenses, of pivotally mounted stencil plates, spring supported bars, against which the extending ends of the plates bear, operating keys and connections between the keys and the plates, substantially as described. 7th. The combination, with a lantern, provided with condensing and focusing lenses, of stencil plates, a stencil plate operating mechanism, and a stop arranged above the plates, substantially as described.

No. 32,415. Nut Making Machine.

(*Machine à faire les écrous.*)

George Dunham, Unionville, Conn., U.S., 2nd October, 1889; 5 years.

Claim.—1st. In a nut machine, the slide A having its lower end adapted to hold several punches, and made separately from the main or upper portion of said slide, and provided with adjusting devices for adjusting the punches bodily to or from the front and rear, and also laterally, substantially as described and for the purpose specified. 2nd. In a nut machine, having a groove or way for the rod or bar to pass through, the combination of the jaws *c*, *c*, pivoted to the plate E upon each side of said way, and the spring *d* for pressing said jaws against opposite sides of the bar, when passing through said ways, substantially as described and for the purpose specified. 3rd. In a nut machine, the combination of the blanking punch and dies, one member of said dies being formed on the reciprocating carrier, and the stationary wing *b* beveled at its outer end, substantially as described, whereby the movement of said carrier under said wing frees the dies from scrap, as set forth. 4th. In a nut machine, the combination, with the blanking punch, of the shear blade 4, and the reciprocating carrier, having an edge parallel to that of said shear blade, and in connection therewith, serving as the blanking die, said parallel edge having also the holding recess *f*, substantially as described and for the purpose specified. 5th. In a nut machine, the combination of the blanking punch and die, the trimming die and punch, a carrier for transferring the blank from the blanking to the

trimming dies, and the yielding gauge *g*, substantially as described and for the purpose specified. 6th. In a machine of the class hereinbefore specified, the combination of the punching die and punch for the middle hole, the blanking die and punch, a carrier, a trimming die and punch, and a clearer *m* for removing the scrap from said trimming die, substantially as described and for the purpose specified.

No. 32,416. Compound for the Manufacture of Sanitary and Drain Pipes.

(*Composition pour la fabrication des tuyaux sanitaires et d'égouts.*)

Bertel E. Olsen and Charles Gabriel, Victoria, B. C., 2nd October, 1889; 5 years.

Claim.—The herein described composition of matter, consisting of sand, sulphur and pitch, with the addition of either lime, clay, or cement, in substantially the proportions stated.

No. 32,417. Art or Process of Converting Metallic Lead into a Salt Suitable for White Paint.

(*Art ou procéde de conversion du plomb métallique en un sel propre à faire la peinture blanche.*)

John Blair, Ardtrea, Ont., and Henry Baylis, Montréal, Qué., 2nd October, 1889; 5 years.

Claim.—1st. The improvement in the process of corroding metallic lead into a salt suitable for white paint, which consists in placing lead plates and carbon plates in battery form in a suitable vessel and then charging such vessel with an exciting lequid, substantially as described and set forth. 2nd. The improvement in the process of rapidly corroding metallic lead into a salt suitable for white paint, which consists in placing carbon plates and metallic lead plates connected in battery form in a suitable vessel, and charging said vessel with an exciting liquid in the presence of heat, substantially as specified. 3rd. The improvement in the process of rapidly corroding metallic lead into a salt suitable for white paint, which consists in placing carbon plates, and metallic lead plates connected in battery form in a suitable vessel, charging said vessel with an exciting liquid as a solution of soda nitrate, sulphuric acid and water, or other substances producing like results, and applying heat to the exterior surface of said vessel, substantially as described and set forth. 4th. The improvement in the process of corroding metallic lead into a salt suitable for white paint, substantially as described and set forth, whereby a sulpho-hydrate of lead is produced in every respect equal to the best hydrated carbonate of lead of commerce. 5th. The herein described rapid and cheap method of producing this sulpho-hydrate of lead, by the application of heat to the vessel in which the process of corroding the metallic lead is being carried on, substantially as described and set forth. 6th. The herein described means of assisting the heating process, and of greatly improving the salt of lead, produced by the introduction of carbon plates into the vessel in which the process of corroding the metallic lead in being carried on, substantially as described and set forth.

No. 32,418. Locomotive Smoke Stack.

(*Cheminée de locomotive.*)

Perry J. Brown, Albuquerque, N.M.T., U. S., 2nd October, 1889; 5 years,

Claim.—1st. The combination of the stack, the cone arranged above the upper end thereof, the inverted dish-shaped screen 3, the circular screen 4 with flat top inclosing the dish-shaped screen 3, the funnel 5 inclosing the circular screen 4, the clearance pipe 8 inclosing the circular screen 4, allowing an uninterrupted flue 7 between said circular screen 4, the funnel 5 and the clearance pipe 8, substantially as described. 2nd The combination of the inclosed funnel-shaped pipe 8, having the funnel 5 at its upper end, the vertical stack 1 extending upward through the clearance pipe 8, the deflecting cone above the top of the stack, the screens 3 and 4 arranged one within the other and inclosed in the funnel 5, and the clearance pipe 8 forming an annular flue or space 7 between the outer screen, the funnel 5 and the clearance pipe 8, and communicating with the said clearance pipe 8, the deflecting cone above the top of the stack, the screens 3 and 4 arranged one within the other and inclosed in the funnel 5, and the clearance pipe 8 forming an annular flue or space 7 between the outer screen, the funnel 5 and the clearance pipe 8 and communicating with the said clearance pipe 8, substantially as described. 3rd. The combination of the stack, the cone arranged above the same, the screen 3 arranged over the cone, the screen 4 arranged over the said screen 3, the funnel enveloping the said screen 4 and having the depending clearance pipe, an annular flue or space being left between the opposing sides of the screen 4 and the funnel, substantially as described. 4th. The combination of the stack, the cone arranged above the same, the screen 3 arranged over the cone, the screen 4 arranged over the said screen 3, the funnel enveloping the said screen 4 and having the depending clearance pipe, an annular flue or space being left between the opposing sides of the screen 4 and the funnel and the sleeve 4^2, substantially as described. 5th. The spray pipe 9, passing through the upper side of the clearance pipe 8 downward into the cinder discharge pipe 20, and regulated by the valve 10 operated by the engineer, substantially as described. 6th. The cinder discharge pipe 20, extending downward from the clearance pipe 8, and having the spray pipe 9, substantially as described.

No. 32,419. Watch Case. (*Boîte de montre.*)

Gaspard Schelker, Brooklyn, N.Y., U.S., 2nd October, 1889; 5 years.

Claim.—1st. In a watch case, the combination, with one of the outer covers or lids, provided with a circular offset I, of a bezel H^1, H^2 sprung upon said offset, and a revoluble apertured disk F resting over the outer face of said cover under the bezel, substantially as set forth. 2nd. In a watch case, the combination, with one of the outer lids or covers having a circular offset I, and a concentrically arranged series of picture receiving recesses, of the bezel H^1, H^2 sprung upon said offset, and the revoluble disk F resting over the recessed face of the lid or cover under the bezel, and having an aperture and a pin or projection J, substantially as set forth.

No. 32,420. Mariner's Clock or Watch Dial.

(*Cadran d'horloge ou de montre marine.*)

Silas H. Harding, Jr., Rockingham, N.H., U.S., 2nd October, 1889; 5 years.

Claim.—1st. As a new article of manufacture, a clock dial extended beyond the numerals, and divided into spaces imprinted with symbols indicating mariner's danger signals, substantially as described. 2nd. A clock dial, of the class described, having the representation of flags imprinted on its face, and arranged in groups indicating mariner's danger signals, substantially as described. 3rd. A clock dial, having a portion of its face divided into spaces, in which are imprinted flags grouped to indicate mariner's danger signals, and words in explanation thereof, substantially as described. 4th. In *x* clock dial, the central dial A and outer portion B divided by lines a, the flags *m* in said spaces, and words explaining the signals indicated thereby, substantially as described.

No. 32,421. Joint for Furniture, Boxes or like Articles.

(*Joint pour les meubles, les boîtes ou objets semblables.*)

Henry L. Beach, Montrose, Penn., U.S., 2nd October, 1889; 5 years.

Claim—1st. An improved joint for furniture, boxes, or similar articles, consisting of the meeting sections *a* and *b*, the former being provided with triangular-shaped grooves, terminating at points back of the front edge of said section, thereby forming a shoulder, and the latter section having tongues of triangular shape adapted to be fitted in said grooves, so as to form a blind joint at the front only, substantially as herein described. 2nd. The sections *a* and *b*, formed with triangular-shaped grooves and tongues, whose inner surfaces are cut in straight lines from their bases to their outer points, the said sections *a* also having a shoulder formed at the front corners, as herein described.

No. 32,422. Traction Engine.

(*Machine de traction.*)

George T. Glover, Chicago, Ill., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, with the engine-truck, of a traction propelling attachment hinged to the rear end portion of the engine-truck, and comprising one or more traction wheels mounted lower than the point of connection between the traction propelling attachment and the engine-truck, whereby the weight of the engine-truck may be automatically taken by the traction wheels to an extent proportional to the traction required. 2nd. The combination, substantially as hereinbefore set forth, with the engine-truck, of the traction propelling attachment comprising a pair of inclined arms, hinged at their forward higher ends to the rear end portion of the engine-truck, and one or more traction wheels connected with said arms, and having their axle arranged lower than the connection between said arms and the engine-truck, for the purpose described. 3rd. The combination, substantially as hereinbefore set forth, with the engine-truck, and a traction propelling attachment arranged in rear thereof, of a draw-bar having a sliding connection with the engine-truck, and a hinged connection with the traction propelling attachment. 4th. The combination, substantially as hereinbefore set forth, with the engine-truck, and a traction propelling attachment, of a draw-bar connected with the traction propelling attachment, and having a sliding connection with the engine-truck, and a spring presenting a yielding resistance to the forward end movement of the draw-bar. 5th. The combination, substantially as hereinbefore set forth, with the engine-truck, and a traction propelling attachment arranged in rear of the engine-truck, and driven from the engine by a flexible power transmitting connections such as set forth, of a pair of draw-bars having sliding connection with the engine-truck and hinged connections with the traction propelling attachment. 6th. The combination, substantially as hereinbefore set forth, with the engine-truck, and a traction propelling attachment in rear thereof, of a draw-bar connected to the traction propelling attachment and having a sliding connection with the engine-truck, a spring opposing the forward end movement of the draw-bar, and a jack for adjusting the force of the spring. 7th. The combination, with the engine-truck carrying a suitable engine and boiler, of a traction propelling attachment attached to the engine-truck and operated from the engine thereon, and a water supply tank mounted upon the traction propelling attachment and serving to weight down the traction wheels. 8th. The combination, with a suitable boiler and engine carried by the engine-truck, in a traction-engine for forming ice roads and running over the same, of the water supply tank, a steam-chamber arranged below the tank, and means for introducing steam into said chamber from the boiler, substantially as described. 9th. The combination, with a suitable boiler and engine carried by the engine-truck, of the water supply tank, a steam chamber arranged below said tank, means for introducing steam into said chamber, and the pipe leading from the tank through said chamber, and connected with the boiler by suitable pipe-connection. 10th. The combination, with the boiler and engine carried by the engine-truck, and a traction propelling attachment attached to the engine-truck, and comprising traction wheels driven from the engine, of a feed-water heater carried by the traction propelling attachment. 11th. The combination, with the engine-truck and engine, of the traction propelling attachment B, the feed water tank N supported upon the traction propelling attachment, the steam chamber *n* under the said tank, and a pipe connection between the tank and the engine

passing through said steam-chamber, substantially as described. 12th. The combination, with the draw-bars F attached to the engine-truck, and side bars of the traction propelling attachment, of clips I applied to the opposing ends of said bars, and hinges, such as set forth, connecting the bars of the traction propelling attachment with the draw-bars. 13th. The combination, with the engine-truck, of the springs having sliding connections therewith, and a bar, for the purpose set forth, secured to the springs, substantially as described.

No. 32,423. Pipe Wrench. (*Clé à tuyaux.*)

Beverly Reagan, Ouachita, La., U.S., 2nd October, 1889; 5 years.

Claim.—1st. In pipe-tongs, the combination, with a fixed jaw formed with a handle, and a serrated or toothed shank, of a block through which said shank passes, a pawl carried by the block and arranged to engage the serrated shank, a handle pivotally connected to the block, and a movable jaw also pivotally connected to the block, and provided with a projection located so that it will be borne upon by the pivotally-mounted handle, substantially as described. 2nd. In pipe-tongs, the combination, with a jaw 10 having a shank 12, and a handle 11, the shank being formed with teeth 13 of a block 14, a pawl 15 pivotally mounted within the block and provided with teeth adapted to engage the teeth 13, a handle 16 also pivotally mounted within the block and formed with bearing-faces 4 and 5, which operate in connection with the pawl, a jaw 17 studded or pivotally connected to the outer face of the block 14, an arm 23 extending from said jaw, and a projection 22 carried by the arm, said projection being arranged so that it will be borne upon by the handle 16, substantially as described. 3rd. In pipe-tongs, the combination, with a jaw 10 formed with a handle 11, and a shank 12, which shank is provided with teeth 13, of a block mounted upon the shank 12, a pawl 15 pivotally mounted within the block and formed with a recess 3, and teeth 2, a handle 16 also pivotally mounted within the block, said handle being formed with bearing-faces 4 and 5 which operate upon the pawl 15, a jaw 17, a serrated faced block 18 pivotally connected to the jaw, and an arm 23 formed upon the jaw, and provided with a projection 22 which extends inward to be borne upon by the handle 16, substantially as described.

No. 32,424. Means for Propelling Vessels.

(*Moyens de propulser les vaisseaux.*)

Clifton Vose, Brooklyn, N.Y., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The combination, with the hull or shell of a vessel, of a water-tight compartment or chamber, secured to the bottom of the same, wherein the cranks of the propeller shaft are located, substantially as specified. 2nd. In combination, with the hull or shell of the vessel, and the compartment or chamber secured thereto, of the longitudinal propeller shaft journalled in bearings at each end of the compartment or chamber, substantially as specified. 3rd. The combination, with the propeller shaft in sections, as described, of the hangers having divided bearings or boxes for the reception of said shaft, substantially as and for the purposes specified. 4th. The combination, with the propeller shaft, of the propeller blades constructed in two parts, with semi-circular hubs adapted to embrace and be bolted to the shaft, substantially as and for the purposes specified. 5th. The combination, with the vessel having an ordinary rudder, of the supplementary rudder, whereby the forward movement of the vessel may be retarded or the turning of the vessel accelerated, substantially as specified. 6th. The combination, with the vessel having a water-tight compartment below and the propeller shaft thereof constructed of sections of successively decreasing diameters, of the worm or screw-threaded propeller on said shaft extending to the front or rear of said compartment, substantially as specified.

No. 32,425. Steam Injector. (*Injecteur de vapeur.*)

The Hayden & Derby Manufacturing Company, (assignee of John Desmond), Brooklyn, N.Y., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The herein-described improved steam-injector, having a continuous communication between the mouth of the combining tube and the overflow chamber, substantially as set forth. 2nd. A steam-injector having an overflow chamber, and the lifting and combining tubes opening thereinto, and having a continuous passageway or communication therewith, as set forth. 3rd. As an improvement in steam-injectors, the sliding valve having grooves or recesses, as set forth. 4th. As an improvement in steam-injectors, having an overflow chamber, and the lifting and combining tubes opening thereinto, the sliding valve located at said opening of the tubes, and having holes or ports forming a continuous passageway, substantially as set forth. 5th. As an improvement in steam-injectors, having the overflow chamber, the combining tube having holes or ports at or near its rear end, and the sliding valve located on said combining tube for closing said holes or ports in the starting of the injector, and having grooves or recesses for forming a continuous passageway between the mouth of said combining tube and the overflow chamber, substantially as set forth. 6th. The herein-described improvement in steam-injectors, comprising the lifting and combining tubes, and the valve sliding on said combining tube, and having its normal position against said lifting tube, as set forth. 7th. As an improvement in steam-injectors, having a water inlet arm, the water inlet valve located in said arm, and having two heads or disks fitted on disimilar screws, and the spindle carrying a finger or pointer, substantially as set forth, said heads or disks being movable in opposite directions, as stated. 8th. As an improvement in steam-injectors, the water inlet valves having the two heads or disks, and the spindle provided with right and left hand screw-threads upon which said heads or disks are disposed, substantially as set forth. 9th. As an improvement in steam-injectors, the water inlet valve having the two heads or disks, the spindle provided with opposite screw-threads, the plug through which said spindle is passed, and the guide rod projecting from said plug through said heads or disks, substantially as set forth. 10th. In a steam-injector, the combination, with the water inlet arm, of the valve having oppositely movable heads or disks, the plug, the graduated scale, and the spindle having a finger or pointer, substantially as set forth. 11th. In a steam injector, the combination, with the water inlet arm having the opposite circular extension of the plug having a flange provided with a scale, the heads or disks, the spindle having right and left hand screw-threads, the guide rod projecting from said plug, and the finger or pointer, substantially as set forth.

No. 32,426. Lock or Fastening for Doors.

(*Serrure ou fermeture de portes.*)

Edward Wright, Southend, Eng., 2nd October, 1889; 5 years.

Claim.—1st. A door fastening having a bolt with a double incline, substantially such as hereinbefore described, moving in a plane at right angles to the plane of the door when closed, and suitably mounted for fitting on a door frame, so as to engage with a suitable catch on the door, and operating substantially as hereinbefore described, to secure the door, but at the same time to permit the door to be opened or closed by a simple push or pull. 2nd. A lock adapted to be secured to a door-frame having a pivoted or articulated bolt, engaging with a suitable catch, adapted to be mounted on the door, arranged and operating substantially as hereinbefore described. 3rd. A door fastening having a bolt with a double incline, substantially such as hereinbefore described, moving in a plane at right angles to the plane of the door when closed, and suitably mounted for fitting on a door frame, so as to engage with a suitable catch on the door, and operating, substantially as hereinbefore described, to secure the door, but, at the same time, to permit the door to be opened or closed by a simple push or pull, in combination with a locking bolt or bolts to secure the lock bolt, whether such locking bolt or bolts be operated by hand or by a key, and whether the locking bolt be adapted to the door or to the door-frame portion of the apparatus or to both. 4th. A lock adapted to be secured to a door-frame, having a pivoted or articulated bolt engaging with a suitable catch, adapted to be mounted on the door, in combination with a locking bolt or bolts to secure the lock bolt, whether such locking bolt or bolts be operated by hand or by a key, and whether the locking bolt be adapted to the door or to the door-frame portion of the apparatus or to both. 5th. In a lock adapted to be applied to a door-frame or casing, the combination of a pivoted or articulated lock bolt adapted to engage with a catch fixed to a door, and a supplementary bolt or stop adapted to lock the pivoted lock bolt, when operated for that purpose whether by a key or otherwise. 6th. In a lock adapted to be applied to a door-fame or casing, the combination of a pivoted or articulated lock bolt, adapted to engage (when the door is closed) with a catch fixed to the door, a bolt or stop by which the lock bolt can be locked, and a handle arranged to serve both to operate the bolt or stop and to move the door itself, substantially as described. 7th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door and having a cam-shaped edge 5, substantially as herein described for the purpose specified. 8th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door, and having a cam-shaped edge 5 and a locking bolt 7 arranged to move in said lock case and engage with said bolt 1, substantially as herein described for the purpose set forth. 9th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door and having a cam-shaped edge 5, and a locking bolt 9 carried by the door to which said catch is applied.

No. 32,427. Air Brake Signal.

(*Signal de frein atmosphérique.*)

Allen B. Collins, Burlington, Iowa, U.S., 2nd October, 1889; 5 years.

Claim.—1st In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, cocks for closing such pipe, and whistles located above the roof of the car connected to the cocks by means of tubes, and adapted to be blown whenever the cocks are turned to close the main air pipe, substantially as described. 2nd. In an air brake signal, the combination of the signal pipe and main train pipe extending lengthwise of the train beneath the cars, cocks for closing such pipes, tubes running from the cocks in the main air pipe through the car roof, and connected with the cocks in the signal pipe, whistles located at the upper end of such tubes, and adapted to be blown when the cocks are turned to close the pipes, or either of them, substantially as described. 3rd. In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, cocks for closing the same, a branch pipe leading from one of said cocks up into the tender, and provided with a whistle at its upper end, and adapted to be blown when the cock is closed, substantially as described. 4th. In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, valves situated inside the cars and connected with the main air pipe, and whistles attached to the valves and adapted to be blown when the valves are opened, substantially as described.

No. 32,428. Inserted Saw Tooth.

(*Dent de scie mobile.*)

Frederick W. Cook, San Francisco, Cal., U.S., 2nd October, 1889; 5 years.

Claim—The inserted saw tooth herein described, consisting essentially of the holder B, oblong in shape and having a spring *b* to hold the cutting bit in place, a cutting bit C inserted in the upper forward corner of the holder, and a saw-plate with recesses to receive the bit holders, all combined as and for the purpose described.

No. 32,429. Pipe Coupling for Railroad Cars. (*Joint de tuyau pour les chars de chemins de fer.*)

Edward E. Gold, New York, N.Y., U.S., 3rd October, 1889; 5 years.

Claim.—1st. In a hose coupling, consisting of two laterally engaging heads adapted to lock together with an oscillatory wedging movement, the combination of one head having a projecting arm constructed to embrace the other head formed with bearing surfaces on diametrically opposite sides of the coupling axes, with the other coupling head formed with wedging inclines on diametrically opposite sides of the coupling axis, both inclined in the same rotary direction and adapted to simultaneously engage said bearing surfaces on the arm, whereby the wedging thrust is equalized on opposite sides of the axis and all canting of the heads is avoided. 2nd. In a hose coupling, consisting of two laterally-engaging heads adapted to lock together with an oscillatory wedging movement, the combination of one head having a projecting arm constructed to embrace the other head formed with a pintle in the coupling axis, and with bearing surfaces on diametrically opposite sides of said pintle, with the other coupling head formed with a socket for said pintle, and with wedging inclines on diametrically opposite sides of said socket, both inclined in the same rotary direction and adapted to simultaneously engage said bearing surfaces on the arm, whereby the wedging thrust is equalized on opposite sides of the axis and all canting of the heads is avoided. 3rd. In a hose coupling of the class wherein two laterally engaging heads are locked together by an oscillatory wedging movement, a coupling head constructed with a bowl having an opening in one side, and on the opposite side formed with two wedging inclines on diametrically opposite sides of the coupling axis inclined both in the same rotary direction, and an arm projecting past the open side of the bowl at a sufficient distance therefrom to admit the bowl of another coupling head between, and formed with two bearing surfaces on opposite sides of the coupling axis, whereby, when two such heads are coupled together, the arm of each engages both the inclines of the other, and all canting of either head is prevented. 4th. A hose coupling head, constructed with a bowl having wedging inclines on its closed side, and an engaging hook at its end with a locking arm projecting past the open side of the bowl at a sufficient distance therefrom to admit the bowl of another coupling head between, and formed with bearing surfaces and with a notch or recess at the base of said arm adapted to receive an engaging hook on the end of the bowl of another coupling head, whereby the head is adapted for engagement, either with a head having wedging inclines on the closed side of its bowl, or with one having an engaging hook and recess, such as Westinghouse coupling.

No. 32,430. Windlass. (*Guindeau.*)

Adolph Voss, Gloucester, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—The combination of the windlass, the levers C connected therewith and provided with dogs O, the lever G placed at an angle to the levers C and connected thereto, and the hand levers P which are applied to the ends of the levers C, G, substantially as shown and described.

No. 32,431. Manufacture of Certain Wall Hangings and the Like. (*Fabrication de certaines tapisseries et autres choses semblables.*)

Samuel Fisher, Brixton, Eng., 3rd October, 1889; 5 years.

Claim.—1st. The process, consisting in connecting a backing of sized paper with a facing of sized fabric, by means of glue and flour paste, subsequently calendering said material, and coating same with oxydised oil. 2nd. The process, consisting in coating a material with oxydised oil, embossing and printing thereon at one operation, and subsequently coating the back thereof with waterproof composition.

No. 32,432. Machine for Mixing Mineral Compounds. (*Machine pour mélanger les compositions minérales.*)

Milton Broughton, Syracuse, N.Y., U.S., 3rd October, 1889; 5 years.

Claim.—In a machine for mixing minerals, etc., the combination of troughs arranged parallel side by side, shafts extending longitudinally through said troughs and geared to rotate in opposite directions, and paddles projecting from the shafts only part way toward the centre between the shafts, and standing with the entire lengths of their flat sides at the same angle in relation to the axes of the shafts, substantially as described and shown.

No. 32,433. School Desk and other Furniture. (*Pupitre d'ecole et autres meubles.*)

Elijah Haney, Grand Rapids, Mich., U.S., 3rd October, 1889; 5 years.

Claim.—1st. In a school desk, the standards and sustaining arms interlocked therewith at one point, and bearing against the same at a second point, and independent frictionally held eccentrics pivoted to one of said parts, and bearing against the other for the purpose of wedging the two solidly in contact, substantially as set forth. 2nd. In combination, with the standard, having the stud *c* and recess *g*, the top arm B provided with a notch *a* and stud *b*, and the eccentric *d* provided with a neck or journal adapted to receive a wrench, and mounted in the recess *g* in position to act on the stud *b* of the lid arm, as described and shown. 3rd. In a school seat, and in combination with the standards having the arms or studs *e* thereon parallel with their faces, the back composed of the series of wooden slats glued firmly together, and provided in their edges with openings to receive the studs, as shown, whereby the shrinking and swelling of the wood are prevented from loosening the back. 4th. In combination, with the desk standards and the seat hinged to swing downward and rearward between the standards, the rigid guard E extending from one standard to the other, and lying in position, as shown, to cover the rear edge of the folded seat. 5th. In combination, with the standard and the pivoted seat frame with radial arms, the buffer consisting of the rubber disk, two disks of compressed paper, and a central fastening bolt. 6th. In combination, with a metal standard, a vertically swinging metal arm pivoted thereto, and an intermediate washer of compressed paper seated against the smooth surfaces on the metal parts. 7th. In combination, with a metal standard, an arm recessed in its side face, a compressed paper washer seated in said recess, a bearing against a smooth surface on the standard, and a through bolt uniting said parts and serving the double purpose of a pivot and of a compression device for the washer. 8th. In a folded seat, the standard with a seat back thereon, in combination with a seat provided with sustaining arms pivoted to the standards at approximately one-third the distance from the seat to the floor, and somewhat in advance of the rear edge of the seat, said seat arranged to turn upward and present its edge in advance of the seat back, and to swing at its rear edge downward and rearward beneath the back, substantially as described. 9th. In an automatic folding seat, the standards, in combination with the seat having the sustaining arms extending below the seat proper, and pivoted to the standards at approximately one-third the distance from the seat to the floor, and forward of the rear edge of the seat, and a stop limiting the pivotal motion of the seat to an arc of approximately forty degrees, whereby the seat is automatically folded as the occupant rises therefrom and automatically opened as he sinks thereon. 10th. The combination of a metal standard, a vertically-swinging metal arm, a metal washer on the outside of the arm, two washers of compressed paper applied on opposite sides of the arm to isolate the same from adjacent metal surfaces, and a central bolt whereby the above named parts are maintained in forcible contact. 11th The wooden slats united by a joint presenting the the faces *g*, g^1, g^2, as described and shown. 12th. In a school desk, or analogous article of furniture, the lid F^1 provided with a dowel pin 2, in combination with the sunken or concealed buffer 1, substantially as described.

No. 32,434. Hinged or Swinging Gate. (*Barrière suspendue.*)

William Goddard, Komaka, Ont., 3rd October, 1889; 5 years.

Claim.—1st. In a hinged or swinging gate, diagonal brace A secured to the gate, and butting against the lower part of the post, substantially as shown and for the purpose set forth. 2nd. In a swinging gate, the block D secured to the hinge post of the gate, to receive the thrust of the brace A.

No. 32,435. Wash Boiler. (*Chaudière de buanderie.*)

Arthur P. Thissel and George S. Bradstreet, Beverly, Mass., U. S., 3rd October, 1889; 5 years.

Claim.—1st. In a wash boiler, a cover having a portion of its top flattened and perforated, a disk swiveled to said flattened portion and provided with drain openings, and a slotted tray adapted to be detachably secured in said cover, all being combined to operate substantially as described. 2nd. In a wash boiler, a cover having the central portion of its top flattened and provided with drain holes, a perforated disk swiveled to said flattened portion, a key for said disk, a slotted tray disposed within said cover, and a flange and catch in said cover for securing said tray, substantially as described. 3rd. In a wash boiler, the combination of a body provided with handles, a cover having elongated sides and a central flattened portion in its top provided with drain openings, a perforated disk swiveled to said top, a key for revolving said disk, a slotted tray adapted to be inserted in said cover, a flange and catch for detachably securing it therein, and a hook on the supporting flange of said cover for securing it in an inverted position on said body, all being arranged to operate substantially as described. 4th. In a wash boiler, the combination of the body A, having the handles *b*, with the cover B provided with the groove *h*, perforated flattened portion *g*, the perforated disk C, key *m* and hook *v*, arranged to operate substantially as described. 5th. In a wash boiler, the combination of the body A provided with handles *b*, the cover B, having the groove *h*, flattened portion *g* and drain holes *i*, the perforated disk C, the key *m*, the tray D, the flange *r* and catch *t* and the hook *v*, all being arranged to operate substantially as described.

No. 32,436. Buggy Top. (*Couverture de voiture.*)

Shepard W. Cately, Cortland, N.Y., U.S., 3rd October, 1889; 5 years.

Claim.—1st. The combination, with a rod extending from one side of the seat to the other, of a lever arm secured thereto, one end of a detent pivoted to the outer side of the lever, and the other end held against the lever by frictional contact, and adapted to be turned into notches on the seat-rail, as set forth. 2nd. The combination, with a rod holding the hinged braces of a top, having a lever secured thereto, with one end of a detent pivoted to the side of the lever, and the other end resting on the seat rail, of a spring on the rod with one end locked under the seat rail, having an upward traction, as and for the purpose set forth. 3rd. The combination, with a rod extending from one side of the seat to the other, having a lever adjustably secured thereto on the inner side of the seat-rail, said lever having one end of a detent pivoted to its side, and the other end bent outward and held to the lever by frictional contact, and adapted to be turned into notches on the seat rail, of a coil spring having its outer end secured on the square portion of the rod on the outer side of the rail, and its inner end locked under the rail in front of the rod, said spring having an upward traction on the top, as set forth.

No. 32,437. Cord and Rope Making Machine. (*Machine à fabriquer les cordes et lei câbles.*)

Thomas B. Dooley, Boston, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—1st. The combination, in a cord and rope making machine, of a series of flier frames, each adapted to receive a spool, with a plurality of strands, gearing for rotating said frames to twist the strands carried thereby into cords, a head at which said cords are formed into rope, and provided with feed and take-up spools, gearing for imparting a double rotation to said feed, and take-up spools to effect an axial and endwise rotation of the same, the endwise rotation of the take-up spool being at a slower rate of speed than that of the feed spool, substantially as set forth. 2nd. The combination in a cord and rope making machine, of a series of flier frames, each adapted to receive a spool, with a plurality of strands, gearing for rotating said frames to twist the strands carried thereby into cords, spools g^1 for receiving said cords, means for actuating said spools g^1, a head at which said cords are formed into rope, and provided with feed and take-up spools, gearing for imparting a double rotation to said feed, and take-up spools to effect an axial and endwise rotation of the same, the endwise rotation of the take-up spool being at a slower rate of speed than that of the feed spool, substantially as set forth. 3rd. The combination of a shaft J, feed and take-up spools, and gearing for imparting a double rotation to said feed and take-up spools, to cause them to rotate axially and endwise, the endwise rotation of the take-up spool being slower than that of the feed spool, substantially as set forth. 4th. The combination in a cord and rope making machine, of a series of flier frames, each adapted to receive a spool with a plurality of strands, gearing for rotating said frames to twist the strands carried thereby into cords, a revolving head comprising mechanism, substantially as described, for laying up the cords into rope mechanism, substantially as described, for taking up the completed rope, and mechanism, substantially as described, for imparting motion to the take-up mechanism for taking out a slight amount of the twist put into the rope, to avoid kinking in the latter, as set forth. 5th. The combination, with take-up spool n^5 and its revolving shaft, of the gear wheel q, gear wheel q^1, and peripherally grooved take-up pulleys q^4, q^5, and means for supporting said pulleys and last mentioned gear wheel, as set forth. 6th. The combination, in a cord and rope machine, of a series of flier frames, each adapted to receive a spool with a plurality of strands to form cords, gearing for rotating said flier frames, a shaft j, a hub n^1 mounted thereon, bearings n^2, n^2 carried by said hub, a take-up spool n^5 mounted in said bearings and upon which the cords are laid in rope form, devices intermediate of said spool, and frames for receiving the cords, devices, substantially as described, intermediate of said take-up spool, and flier frames for feeding forward the cords, twisting the same into rope, and feeding forward the rope as twisted, means for rotating said hub on said shaft j, and devices for rotating the take-up spool in its bearings, gear wheels q, q^1, peripherally grooved take-up pulleys q^4, q^5, a coiler can or receptacle, and gearing for revolving the same, substantially as set forth. 7th. The combination, with the fliers a, having the square notches or holes a^1, of the spool shaft b having square ends corresponding to said square holes a^1, split sleeve b^1, sleeve c, spline c^1, and spool e provided with the hollow barrel b^2 having the groove c^1, as set forth. 8th. The combination, in a cord and rope making machine, of a series of flier frames, each adapted to receive a spool with a plurality of strands, a hollow spindle for each flier, and having a gear wheel, gearing for revolving said gear wheel, stem f^1 located in said spindle, spring f^5, pin f^2, and nut T^1, and a saddle f suspended on said stem, and twisting and coiling devices, substantially as set forth.

No. 32,438. Buffer. (*Lissoir de cordonnerie.*)

Sidney W. Winslow, (assignee of Andrew W. Rogers), Beverly, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—1st. In combination with the foot of a buffer, an abrading covering for said foot having a practically stiff margin extending beyond the margin of the said foot, and a non-abrading edge, substantially as described. 2nd. In combination, with a foot, of a buffer, an abrading covering for said foot, said covering having a continuous working face, a practically stiff margin extending beyond the margin of the foot, and a non-abrading edge, substantially as described. 3rd. In combination, with the yielding foot of a buffer, an abrading covering loosely mounted on the flexible foot, and extending beyond the margin of the foot, substantially as described. 4th. A detachable abrading covering for buffers, having its connections to hold it to the foot attached directly to the inner face of said covering, substantially as described. 5th. An abrading covering for the foot of a buffer, combined with connections attached to its inner face within the margin thereof, for connecting it to the foot, substantially as described. 6th. An abrading covering for buffers, having its flexible connections to hold it to the foot attached directly to the inner face of said cover, substantially as described. 7th. In combination with the abrading covering, provided with connections on its inner face, a foot having notches or holes to receive the connections, substantially as described. 8th. An abrading covering for buffers, having a reinforcement on its inner face, and connections for holding it to the foot integral with said reinforcement, substantially as described. 9th. An abrading covering for buffers having an annular reinforcing strip secured upon the inner face at the margin, and immediately adjacent thereto, substantially as described. 10th. An abrading covering for buffers having a marginal reinforcement on its inner face, with connecting tongues formed on the inner edge of said reinforcement, combined with the foot having notches or holes, substantially as described. 11th. An abrading covering for buffers, combined with a buffer foot, and holding connections between the cover and the foot, the said holding connections being arranged to draw obliquely to the surface of the cover and in line with the rotation of the foot, substantially as described.

No. 32,439. Buffer Covering.

(*Couverture de lissoir de cordonnerie.*)

Sidney W. Winslow, (assignee of Andrew W. Rogers), Beverly, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—1st. A flexible abrading covering for buffers, having abrading material on both sides, so as to be reversible, as shown. 2nd. Attaching connections for the reversible abrading covering, removably secured to said covering. 3rd. Flexible attaching connections secured to the covering, and projecting outwardly from the periphery thereof. 4th. The reversible covering for buffers, consisting of two discs placed back to back, with abrading material on the other face of each. 5th. A double-faced abrading covering removably connected to the buffer foot. 6th. An abrading covering for the foot of a buffer, formed of tongues cut circumferentially out of the material of the covering.

No. 32,440. Buffer Covering.

(*Couverture de lissoir de cordonnerie.*)

Sidney W. Winslow, (assignee of Andrew W. Rogers), Beverly, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—1st. An abrading covering for the foot of a buffer used to finish the surface of boot and shoe soles, having attaching connections formed by being cut out from the material of the covering within the margin thereof. 2nd. A reversible abrading covering having its attaching connections, formed out of the material of the covering within the margin thereof. 3rd. Attaching connections for the said covering formed of tongues cut circumferentially out of the material of the covering itself.

No. 32,441. Paper Cutter.

(*Machine à trancher le papier.*)

The American Roll Paper Company, (assignee of Charles K. Pickles), St. Louis, Mo., U.S., 3rd October, 1889; 5 years.

Claim.—1st. In a paper-cutting machine, the combination of a fixed knife, and arms gravitating toward the knife, and adapted to support the paper roll, substantially as set forth. 2nd. The combination in a paper-cutting machine, of a knife, gravitating arms, with bearings adapted to receive the gudgeons of the roll upon which the paper roll is supported, and standards preventing the backward swing of the gravitating arms, substantially as and for the purpose set forth. 3rd. The knife of a paper-cutting machine made with a spring at its inner side, adapted to raise the edge of the paper from the knife, substantially as set forth. 4th. The combination in the knife of a paper-cutting machine, of the spring 13, and recess 12, substantially as and for the purpose set forth.

No. 32,442. Buffer. (*Lissoir de cordonnerie.*)

Sidney W. Winslow, co-administrator with Freeman W. Winslow of the estate of Freeman Winslow, (assignee of Sidney W. Winslow and Freeman W. Winslow), Beverly, Mass., U.S., 3rd October, 1889; 5 years.

Claim.—1st. An abrading covering for boot and shoe buffers, the same consisting of a disc composed of a sheet of thin material having an abrading surface, and a non-abrading edge combined with connections for holding it to the foot, and the foot attached by said connections to the covering between the centre and margin thereof, substantially as described and for the purpose set forth. 2nd. As an article of manufacture, an abrading covering for boot and shoe buffers, consisting of a disc composed of a sheet of thin material having an abrading surface, and a non-abrading edge, attaching connections and countersinks between the centre and margin of said covering, adapted to receive the attaching connections to hold it to the foot, substantially as described. 3rd. An abrading covering for boot and shoe buffers, consisting of a disc composed of a sheet of thin material moulded with countersinks at intervals on its working surface between the centre and the margin, combined with a foot, and connecting devices inserted through the countersinks in said covering and through the foot, substantially as described.

No. 32,443. Preparation of Watermarks and Waterprints. (*Préparation du filigrane.*)

James Husnik, Prague, Austria, 3rd October, 1889; 5 years.

Claim.—1st. The method of obtaining semi-transparent figures, signs or drawings in paper, by pressing said paper with matrices of chromogelatine, substantially as described and set forth. 2nd. The method of preparing drawings for the purposes hereinbefore mentioned, consisting in tracing the lights only instead of the shades, substantially as described and set forth. 3rd. A gelatine relief for producing watermarks or prints, prepared in the manner and for the purposes hereinbefore described.

No. 32,444. Steam Engine. (*Machine à vapeur.*)

Joseph W. Dennis and Frank A. Shoemaker, Buffalo, N.Y., U.S., 3rd October, 1889; 5 years.

Claim—The combination with the cylinders of an intermediate chamber which communicates with the inner ends of the cylinders, and which is at one side provided with an opening closed by a removable cover, and at the opposite side closed and provided with a central shaft bearing, and an annular valve seat containing an annular exhaust port surrounding said bearing, and ports leading to the ends of the cylinders, a shaft arranged in said bearing, a crank secured to said shaft, a valve mounted on said shaft between the crank and the valve seat, and pistons connected with said crank, substantially as set forth.

No. 32,445. Grain Scourer.

(*Nettoyeur des grains.*)

John M. Case, Columbus, Ohio, U.S., 4th October, 1889 ; 5 years.

Claim.—1st. A shell or casing for grain cleaners, comprised of but two parts, each consisting of a semi-cylindrical portion, and two semi-circular disks so arranged that when the parts are placed together the cylindrical portions will form the sides, and the semi-circular disks will form the ends of the casing, substantially as set forth. 2nd. A shell or casing for grain cleaners, comprised of but two sections, each consisting of semi-cylindrical portion formed in two parallel planes, united by an offset so that the casing will be cylindrical throughout its length, but of unequal diameter at its opposite ends, substantially as set forth. 3rd. In a grain scourer, the combination, with the scouring chamber, of a stand pipe communicating therewith, said stand pipe being of such diameter and height that the grain is caused to pass through the said cylinder by reason of the pressure of the superincumbent column of grain within the stand pipe, substantially as set forth. 4th. In a grain scourer, the combination, with the scouring chamber, of a stand pipe communicating with the top part of said chamber, whereby it is kept constantly filled with grain, the grain being caused to pass through and be discharged from said chamber by the pressure of the superincumbent column of grain within the stand pipe, substantially as set forth. 5th. In a grain scourer, the combination with the scouring chamber, of a stand pipe communicating therewith, said stand pipe being of such diameter and height that the grain will be caused to pass therethrough by the pressure of the superincumbent column of grain within said stand pipe, and means for regulating the rapidity with which the grain shall escape from said chamber, substantially as set forth. 6th. In a grain scourer, the combination, with the scouring chamber, of a stand pipe communicating therewith, said stand pipe being of such diameter and height that the said chamber will be kept filled with grain constantly under the pressure of the superincumbent column of grain in the stand pipe, means for agitating the grain within the chamber, and a discharge aperture situated above the bottom of the chamber, substantially as set forth. 7th. In a grain scourer, the combination, with a horizontal cylinder, of a stand pipe communicating with one end thereof, and at the top side a rubbing drum journalled within said cylinder, and a discharge aperture situated at the other end of the cylinder and near the top thereof, the stand pipe being of such diameter and height that the pressure of the column of grain within the same will keep the grain in the chamber under constant pressure, and cause it to pass through the cylinder from the receiving to the discharge end, substantially as set forth. 7th. In a grain scourer, the combination, with a horizontal cylinder, of a stand pipe communicating with one end thereof, and at the top side a rubbing drum journalled within said cylinder, and a discharge aperture situated at the other end of the cylinder and near the top thereof, the stand pipe being of such diameter and height that the pressure of the column of grain within the same will keep the grain in the chamber under constant pressure, and cause it to pass through the cylinder from the receiving to the discharge end, substantially as set forth. 8th. A grain cleaner, comprising the combination of the following elements, to wit: a scouring cylinder and a dusting cylinder placed end to end, a diaphragm or partition between them having an aperture through which the interiors of said cylinders communicate, a scouring drum situated within the scouring cylinder, a reticulated cylinder situated in the dusting cylinder, and a rotary heater situated within said reticulated cylinder, substantially as set forth. 9th. In a grain cleaner, the combination of the cylindrical shell or casing, the partition dividing it into two chambers B and C, an aperture through which the grain is discharged from the chamber B into the chamber C, said aperture being situated near the top of the dividing partition, a corrugated lining secured within the chamber B, a revoluble rubbing drum mounted to revolve in said chamber, a reticulated cylinder situated within the chamber C, and a rotary duster mounted within said cylinder, substantially as set forth. 10th. The combination, with the casing having the discharge aperture a^7, and means for adjusting its upper edge vertically, whereby the quantity of material retained within the casing may be regulated, substantially as set forth. 11th. A shell or casing formed in two planes, connected by an offset, an aperture a^6 through the offset, having communication with an aperture a^5 through the top of the portion of the shell, which is of smaller diameter, and a partition separating the interior of the shell into two compartments, substantially as set forth. 12th. The combination, with the adjacent chambers B, C, the scourer located in the chamber B, and the duster or beater located in the chamber C, of the partition separating said chambers, having the aperture through which said chambers communicate, and the valve for controlling said aperture, substantially as set forth. 13th. The combination, with a chamber and a rubber situated therein, of a stand pipe communicating with one end of said chamber, and an outlet at the other, whereby the pressure of the grain and the movement of the rubber causes a feed from one end of the cylinder to the other, as set forth. 14th. The combination, with a chamber having its inlet and outlet at opposite ends, of a stand pipe communicating with the inlet, a valve controlling the outlet, and a rubber within the cylinder, substantially as set forth. 15th. The combination of the stand pipe H, horizontal pipe N, horizontal shaft E passing through pipe N, screw-conveyor O overlapping horizontal flanges or rings Q, Q^1, Q^{11}, circular plate P and paddles K, as set forth. 16th. In a grain cleaner, the screen J, in combination with the horizontal revolving shaft carrying the cone, deflector S and the fan paddles K and plate P supporting flange Q, as set forth. 17th. The circular plate P, having arms *d* provided with alternating brushes and wipers, and the fan paddles, in combination with the screen J, flanges or rings Q, Q^1, horizontal shaft E and pipe N, as set forth. 18th. The combination, with the discharge aperture, of the adjustable valve M hinged at its lower edge beneath said aperture, and the parallel boards M^1, M^1 projecting from the casing on opposite sides of the aperture, substantially as set forth.

No. 32,446. Device for Conveying Cars over Temporary Obstructions placed on the Track. (*Appareil pour faire passer les chars par dessus des obstacles temporaires sur la voie.*)

Charles A. Little, Pittsburg, Penn., U.S., 4th October, 1889 ; 5 years.

Claim.—In a device, such as described, the combination, consisting of the two sections *a* for each rail of the track, one or more circular openings *c* extending through the same, a portion of each of said openings *c* being formed in each of the two sections *a*, the projecting pins *b* for securing the sections together, and the forked rod *t* for the same purpose, the two rods *i* extending across the track detachably secured to the device, whereby each portion of the device is held rigidly and securely in position, and the base and top of the sections *a* corresponding to the shape of the rail *d* on which the device is placed, substantially as and for the purpose set forth.

No. 32,447. Sliding Barn Door Hanger.

(*Ferrure de porte glissante de grange.*)

Augustus R. Woodyatt, Guelph, Ont., 4th October, 1889 ; 5 years.

Claim.—In a door hanger, the combination of the flat bent strap A provided with bolt holes, a piece B having its bent ends secured to said strap and carrying below a friction roller C, and the roller D placed between the pieces A and B, and journalled upon an axle secured in said pieces, substantially as set forth.

No. 32,448. Concentrated Ale and Stout and other Beers. (*Aile et porter concentrés et autres bières.*)

The Manbré Beer Extract Company, Widnes (assignee of Ernest Manbré, Garston), Eng., 4th October, 1889 ; 5 years.

Claim.—1st. The process of manufacturing a concentrated extract for making beer, ale, etc., which consists in mashing the grain and flour in water, and heating it by steam to boiling point, and boiling till the starch is dissolved, lowering the temperature to about 195 degrees Fah., and adding malt, allowing the bulk to settle and stand till the starch is cemented to dexbrose or dexbro malthose, then stirring and boiling the bulk, adding alkali and heating to a temperature from 290 degrees to 320 degrees Fah., distilling of the impurities, filtering the residue, and mixing the same with extract of hops, made as hereafter described, boiling, filtering again, adding saccharine materials and concentrating in vacuo, the extract of hops being made by boiling in water at about 100 lbs. pressure, straining and condensing. 2nd. The process of making a concentrated extract for beer, ale, etc., making wort in any usual manner, adding alkali and heating to about 320 degrees Fah., under pressure of 100 lbs. to the square inch, adding extract of hops, similarly heated and condensed, and sacharine materials and condensing. 3rd. The improvement in the process of making a concentrated extract for making beer, ale, etc., which consists in heating the solution of dextro maltose and other substances to 290 degrees Fah. or more, whereby the impurities are distilled off. 4th. The treatment of extract of hops for use in manufacturing extract for making beer, which consists in boiling the same in water to about 320 deg. Fah., under pressure of 100 lbs. in the square inch, and then concentrating. 5th. As a new article of manufacture, the extract for making beer. etc., consisting of dextros, maltose, extract of hops, alkaline and sacharine materials purified from oil, nitrogenous matters and easily volatilized salts and acids, substantially as described.

No. 32,449. Cartridge Loader.

(*Charge-cartouche.*)

Alexander Euston, St. Louis, Mo., U.S., 4th October, 1889 ; 5 years.

Claim.—1st. In a cartridge loader, the combination, with a rotating circular shell supporting table, and mechanism for imparting an intermittent movement to the same, of a vertically reciprocating similar circular disk above the table, having mounted on its periphery suitable charging mechanism, substantially as and for the purpose set forth. 2nd. In a cartridge loader, the combination of a table having a fixed portion and a movable portion, and mechanism for rotating the movable portion, consisting of a ratchet wheel 21 secured thereto, a pawl 23 engaging the ratchet wheel 21, pivoted lever 24 to which the pawl is secured, a vertical pivoted lever 25, having a forked upper end engaging the arm, and a cam 27 engaging the lower end of the lever for moving the same, substantially as and for the purpose set forth. 3rd. In a cartridge loader, the combination of a table having a fixed portion and movable portion in the same horizontal plane, and mechanism for moving the shells from the fixed to the movable portion of the table, said mechanism consisting essentially of a pivoted lever moving horizontally above the table, and having an end embracing the shell for sliding it into place, and mechanism for moving the lever, substantially as and for the purpose set forth. 4th. In a cartridge loader, the combination of a table having a fixed and movable portion in substantially the same plane, a vertical delivery tube above the fixed portion, holders secured to the movable portion, and a pivoted lever having an end moving horizontally over the parts and beneath the delivery tube, embracing and moving the shells from the fixed portion of the table onto the movable portion, and into engagement with the holders, substantially as and for the purpose set forth. 5th. In a cartridge loader, the combination of a table having a fixed and movable portion, adjustable holders secured to the movable portion, and a lever operated by suitable mechanism, and moving the shells laterally off of the fixed portion onto the movable portion of the table, and guards 150 provided with friction rollers, substantially as and for the purpose set forth. 5th. In a cartridge loader, the combination of a table having a fixed

and movable portion, adjustable holders secured to the movable portion, and a lever operated by suitable mechanism and moving the shells laterally off of the fixed portion onto the movable portion of the table, and guards 150 provided with friction rollers, substantially as and for the purpose set forth. 6th. In a cartridge loader, the combination of a table, a funnel for delivering the cartridge vertically onto the table, and device for delivering the shells into the funnel, and a horizontally swinging arm 39 moving under said funnel and having the tail 41, substantially as and for the purpose set forth. 7th. In a cartridge loader, the combination of a table, and mechanism for delivering the shells onto the table, consisting of an adjustable funnel normally distant from the table less than the length of the shell, and mechanism for automatically delivering the shells into the funnel, one at a time, and lifting the funnel, substantially as and for the purpose set forth. 8th. 8th. In a cartridge-loader, the combination of a table and mechanism for delivering the shells onto the table, consisting of a funnel, an inclined holder for receiving a number of the shells, and two reciprocating gates extending into the passage and operated alternately up and down, substantially as and for the purpose set forth. 9th. In a cartridge-loader, the combination of the table, and mechanism for moving the shells onto the table consisting of a funnel, a holder, vertically-reciprocating gates projecting into the holder bar, to which the gates are secured, and means for alternately moving the bar to raise and lower the gates automatically, substantially as and for the purpose set forth. 10th. In a cartridge-loader, the combination of the table, a funnel located over the table, and means for delivering the shells into the funnel, consisting of a holder 56, vertically movable gates 60, 61, bar 63 to which the gates are secured, link 70 connected to the bar at one end, pivoted lever 67 to which the link is connected at the other end, and a movable disk 3 for operating said lever, substantially as and for the purpose set forth. 11th. In a cartridge-loader, the combination of the table, a funnel located over the table, and mechanism for delivering the shells one at a time into the funnel, consisting of a holder having an inclined end 59, and slide 59 1-2 for retarding one end, and the opposite inclined depression 58 for dropping the other, substantially as and for the purpose set forth. 12th. In a cartridge-loader, the combination of the table and funnel for delivering the shells onto the table, and an oscillating lever having an end for embracing the shell, and a rearwardly extending wing 41 for closing the funnel orifice, substantially as and for the purpose set forth. 13th. In a cartridge-loader, the combination of a table, a funnel for delivering the shells onto the table, normally distant from the table less than the length of the shell, whereby the shell is not wholly released, and a reciprocating disk 3 to which the funnel is connected for lifting it a short distance after each shell has been deposited, substantially as and for the purpose set forth. 14th. In a cartridge-loader, the combination of a table for supporting the shells, and a powder or shot charging device, the latter consisting essentially of a receiver or canister, a cylinder into which the canister discharges, a hollow movable plunger having perforations to receive and discharge the powder or shot, and a funnel for transferring the powder or shot from the plunger to the shells, said funnel being mounted on a vertically movable rod, whereby it enters and is withdrawn from the shell, substantially as and for the purpose set forth. 15th. In a cartridge-loader, the combination of a table, and the powder or shot-charging device consisting essentially of a cylinder into which the powder or shot is deposited, a hollow vertically-movable plunger having perforations to receive and discharge the powder or shot, connection between the plunger, and disk 3 for raising and lowering said plunger, and a funnel for transferring the powder or shot from the plunger to the shell, substantially as and for the purpose set forth. 16th. In a cartridge-loader, the combination of a table for supporting the shells, and a powder or shot-charging device consisting essentially of a cylinder into which the powder or shot is deposited, a hollow plunger located within the cylinder and having perforations to receive and discharge the powder or shot, and a funnel for transferring the powder or shot from the plunger into the shell, said plunger being connected to and operated by a movable disk 3, substantially as and for the purpose set forth. 17th. In a cartridge-loader, the combination of a table for supporting the shells, and a powder or shot-mechanism consisting essentially of a cylinder, a hollow plunger located within the cylinder and having perforations to receive and discharge the powder or shot, a funnel for transferring the powder or shot from the plunger to the shells, and an adjustable bottom in the plunger consisting of a plug, and a screw-threaded rod entering the plug from the bottom, and having a projecting end for turning and for raising and lowering the plug, substantially as and for the purpose set forth. 18th. In a cartridge-loader, the combination of a table for receiving the shells, and a shot or powder-charging mechanism consisting essentially of a cylinder, a hollow plunger located within the cylinder, and having receiving and discharging openings at different elevations, a tube secured to the cylinder and through which the plunger passes, and a funnel for transferring the powder or shot from the plunger to the shells, said plunger passing through an arm 93 on the disk 3, substantially as set forth. 19th. In a cartridge-loader, the combination of a table for receiving the shells, and a powder or shot-charging mechanism consisting essentially of a cylinder, a hollow plunger located within the cylinder and having receiving and discharging openings, a movable bottom in said plunger, a longitudinal rod screwing into said bottom for regulating it, and a pin in said bottom fitting in a graduated slot of the plunger for preventing the bottom from turning and for indicating its location, substantially as and for the purpose set forth. 20th. In a cartridge-loader, the combination of a table for supporting the shells, and a powder or shot-charging mechanism consisting essentially of a cylinder, a hollow plunger located within the cylinder, and having openings for receiving and discharging the powder or shot, a funnel for transferring the powder or shot from the plunger to the shells, and means for raising and lowering the plunger consisting of a vibrating disk 3, and arms or brackets 84 mounted thereon, substantially as and for the purpose set forth. 21st. In a cartridge-loader, the combination of a table for supporting the shells, and a powder or shot-charging mechanism having a funnel for transferring the powder or shot to the shells, said funnel being normally distant from the table less than the length of the shell, and connected to a vertically-vibrating disk 3, whereby it enters the shells while the powder or shot is being transferred, and then rises out of the shells to permit the latter to be moved away, substantially as and for the purpose set forth. 22nd. In a cartridge-loader, the combination, of a table for holding the shells, and a powder or shot-charging mechanism consisting essentially of a supply-cylinder, a vertically movable charging plunger moving in said cylinder, and a funnel secured to and beneath the plunger, so as to be raised and lowered thereby, substantially as and for the purpose set forth. 23rd. In a cartridge-loader, the combination of a supporting-table, a wadding device consisting of a vertically reciprocating plunger, a receiving tube, a slide for presenting the wads, a pivoted lever secured to the slide provided with a vertical cam slot, and an arm having an operating pin and connected to the plunger, whereby the vertical movement of the plunger causes the delivery of a wad, substantially as and for the purpose set forth. 24th. In a cartridge-loader, the combination of a supporting table and a wadding-device consisting essentially of a plunger, a vertically movable disk 3 carrying the plunger, a delivery tube, a table beneath the delivery tube, a slide located on the table and moving beneath the tube, and working connection between the disk and the slide, substantially as and for the purpose set forth. 25th. In a cartridge-loader, the combination of a supporting table and a wadding device consisting essentially of a plunger, means for moving the wads beneath the plunger, a guard for protecting the mouths of the shells consisting of an adjustable arm, having a cylindrical opening slotted to receive the mouth of the shell, and means for automatically moving the guard consisting of a rod-lever and cam, substantially as and for the purpose set forth. 26th. In a cartridge-loader, the combination of the intermittently-moving supporting table and crimping mechanism consisting of reciprocating rods 120 and 124, and dies 121 and 125 on the respective rods by which the shell is successively treated, the former contracting the shell and the latter having a projection 126 for turning in the edge, substantially as and for the purpose set forth. 27th. In a cartridge-loader, the combination of the intermittently-moving supporting table, and a crimping device consisting of the rods 120 and 124, vertically reciprocating disk 3 with which the rods have screw-threaded connection, and dies on the lower ends of the respective rods by which the shell is successively treated, the die on the former having a projection 122, and being formed to contract the shell around said projection and the latter having a projection 126 of larger diameter than the former projection, whereby it engages the contracted portion and turns it in substantially as and for the purpose set forth. 28th. In a cartridge-loader, the combination of the supporting table and a printing device consisting essentially of a movable rod, a printing roller, an adjustable inking-pad, and mechanism for moving the printing roller automatically against the pad-end over the face of the printing-die, substantially as and for the purpose set forth. 29th. In a cartridge-loader, the combination of the supporting table, and a printing device consisting of a movable adjustable rod, a pivoted lever, a die secured to the lower end of the rod, a roller secured to the lower end of the lever for inking the face of the die, and mechanism for operating the roller consisting of a stationary slotted arm, having an inclined groove in which fits a pin on said lever, substantially as and for the purpose set forth. 30th. In a cartridge-loader, the combination of the supporting table, and a printing mechanism consisting of a movable rod, a printing die on the end of the rod, and an inking mechanism consisting of a pivoted lever, a slotted stationary arm with which the lever is connected by a pin, a roller secured to the lever, and a pad 140, substantially as and for the purpose forth. 31st. In a cartridge loader, the combination of a rotating supporting table, and mechanism for moving the shells onto and from the table, consisting of a pivoted lever 37 having ends 39 and 50 moving alternately over said table, substantially as and for the purpose set forth. 32nd. In a cartridge-loader, the combination of the supporting table 2, a movable disk 3 over the table, and means for moving the shells onto and from the table, consisting of a pivoted lever 37 having shell engaging ends 39 and 50, a slotted lever 42 pivoted to a fixed part of the machine and engaging the lever 37 with its free end, and an arm 49 carried by the disk 3 and having a pin 48 engaging the slot in lever 42, substantially as and for the purpose set forth. 33rd. In a cartridge-loader, the combination of a table having a stationary perforated part 2, and a movable centre 19, a lever 37 for moving the shell off the moving part, a tube 146 secured to the stationary part beneath the perforation, and a bracket 147 at the perforation, and in the path of the lever for stopping the shells in a vertical position, and allowing them to pass into the tube, substantially as and for the purpose set forth. 34th. In a cartridge-loader, the combination, with a table having a stationary part, a turning centre, and suitable loading devices disposed at intervals above said table, of laterally opening shell-holders 30 secured to the turning-centre, and adjustable holders 150 opposite to said holders 30 and secured to the stationary part beneath the respective loading devices, substantially as and for the purpose set forth. 35th. In a cartridge-loader, the combination of a shell supporting table having a stationary outer part, and a turning centre, shell-holders 30 secured to the turning centre, clearing finger 160 secured to the stationary part and extending over the movable part and entering said holders, and a perforation 161 adjacent to the finger for outlet of the material collected, substantially as and for the purpose set forth. 36th. In a cartridge-loader, the combination of a shell supporting table having a stationary outer part, and a turning-centre mechanism for moving the centre intermittently, and a stop mechanism consisting of a rod fitting in perforations in the two parts of the table, a pivoted lever to which the rod is secured and means for operating the lever, substantially as and for the purpose set forth. 37th. In a cartridge-loader, the combination of a shell supporting table having a stationary pivoted part, and a turning-centre mechanism for giving the table an intermittent movement, and mechanism for stopping the table consisting of a rod 303 fitting in perforations in the table, pivoted lever to which the rod is secured, and which has a depression 307, spring-rod 309 and a movable roller 306, all substantially as and for the purpose set forth. 38th. In combination with a suitable table, and a reciprocating part above the same in a cartridge-holder, a crimping device consisting of two dies carried by the vibrating part, and to the action of which the shell is successively subjected, the former having a contracted bore with a central core, and the latter having a straight bore with a central core, the core of the latter being of greater diameter than the former, whereby the portion of a

shell contracted by the former is turned in by the latter, substantially as shown and described. 39th. In a cartridge-loader, the combination, with a fixed table and a movable table, for substantially the purposes explained, of a brush or sweep secured to the fixed table and projecting over the movable one, substantially as and for the purpose set forth. 40th. In a cartridge-loader, the combination, with a fixed table and a movable table, of an arm on the fixed table overhanging the movable table in close proximity thereto, said fixed table having an outlet at or near the arm for allowing the material gathered by said arm to pass off, all substantially as shown and described.

No. 32,450. Compouud to Restrain the Setting of Plaster and the like.

(*Composition pour retarder le séchage des enduits de mortier et autres choses semblables.*)

George R. King, New Brighton, N.Y., U.S., 5th October, 1889; 5 years.

Claim.—The above described composition of matter comprising a restraining material, composed essentially of animal gelatinous or vegetable glutinous matter, and hydrated lime, combined substantially as described and in the proportions specified.

No. 32,451. Bridle. (*Bride.*)

The Gowan Mf'g. Company, (assignee of Benjamin L. E. Gowan), Boston, Mass., U.S., 5th October, 1889; 5 years.

Claim.—A crown-piece for a bridle having a straight body, as x, a curved portion, as z, connected with each end of said body, and adapted to pass partially around the ear of the horse, and billets v, b connected with the outer end of each of said curved portions, substantially as set forth.

No. 32,452. Water Closet, etc., Flush.

(*Appareil de lavage des sièges d'aisance, etc.*)

Miller Brothers and Toms and David L. Dwinnell, (assignees of Charles G. C. Simpson), Montreal, Que., 5th October, 1889; 5 years.

Claim.—In a flush for water closets, etc, the combination of a tank supplied with water to a constant standard, or normal level, a syphon provided on its longer leg with an injector by which a quantity of water can be injected into the long leg of the syphon, the whole substantially as described for the purposes set forth.

No. 32,453. Mechanism for Operating Railway Semaphores. (*Mécanisme pour actionner les sémaphores de chemins de fer.*)

Robert Thompson, James Wright, John Wilson, Harry Cortland and Henry Eldridge, Toronto, Ont., 5th October, 1889; 5 years.

Claim.—1st. A rope or chain A, connected at one end to the operating mechanism of the semaphore B, and at its other end to a head E connected to a bar F on which is hinged a bar I, having a projection J to fit onto a frame K, in combination with a box I, links M, and lever N, arranged substantially as and for the purpose specified. 2nd. In a semaphore mechanism, the combination of the lever T, pawl S, ratchet wheel P, drum O, chain R connected to the bar F, all arranged as and for the purpose hereinbefore specified.

No. 32,454. Churn. (*Baratte.*)

Asher Holmes, Hamilton, Ont., 5th October, 1889; 5 years.

Claim.—1st. In a churn, the combination, with the box A, of the double horizontally acting dashers G, G, slotted spindle H, lever I, cover C, all arranged and constructed substantially as and for the purpose specified. 2nd. In a churn, the combination, with the churn box A, of the double horizontally acting dashers G, G, slotted spindle H, lever I, rabbeted and slotted cover C, lugs E, E, all arranged and constructed substantially as and for the purpose specified.

No. 32,455. Barrel Stand. (*Chantier de baril.*)

Thomas McKay, Pilot Mound, Man., 5th October, 1889; 5 years.

Claim.—In a counter barrel swing, the combination of shaft B having turntable C, grips C^1, and shoulder C^2 at its lower end, supporting pivot H, plate G, eye screw belt I and sliding grip D, the whole as shown and described and for the purpose hereinbefore set forth.

No. 32,456. Spoke Socket. (*Mortaise de jante.*)

Melvin L. Smith, Batavia, N.Y., U.S., 7th October, 1889; 5 years.

Claim.—The combination of the felly having a circular recess E on its inner side, and provided with notches H in the base of said recess, the spoke having its tenon entering the felly, and the casting fitting in the recess E having lugs G engaging the notches H, the lugs L adapted to be pressed into the sides of the felly, and the upward projecting lips J having concave inner faces and bearing against the opposite sides of the spoke, as specified.

No. 32,457. Means of Preventing the Formation or Development of injurious Germs of Animal or Vegetable Life Applicable to the Treatment of Hides or Skins and to the Manufacture, Preparation and Preservation of other Materials and Substances liable to be affected by those Germs. (*Moyens d'empêcher la formation ou le développement des germes nuisibles de la vie animale ou végétale applicables au traitement des peaux et à la fabrication, préparation et conservation des autres corps et substances susceptibles d'être affectés par tels germes.*)

Thomas Palmer, Ashbrooke, Eng., Lucien Benoist and Emile Collin, administrator of the estate of Charles Collin, Paris, France, and Benjamin Nicholson, South Norwood, Eng., 7th October, 1889; 5 years.

Claim.—1st. The employment of mercuric iodide or bi-iodide of mercury for preventing the formation or development of injurious germs of animal or vegetable life in substances, or matters liable to be affected thereby. 2nd. In the manufacture or treatment of hides, skins and other materials or substances, liable to be affected by injurious germs of animal or vegetable life, the employment of a solution of mercuric iodide or bi-iodide of mercury in water prepared by the use of a solvent for the mercuric iodide or bi-iodide of mercury, such as an alkaline iodide for example, the iodide of potassium with or without the addition of a salt of potash or of soda or in conjunction with an acid, all substantially as and for the purposes hereinbefore described. 3rd. The employment of mercuric iodide or bi-iodide of mercury, in combination with other antiseptic compounds or materials, such as for example, sanitas enclyptus, carbolic acid, camphoric acid, thymol, peroxide of hydrogen, as well as preparations of creosote, turpentine, camphoraceous, and other bodies possessing antiseptic properties, either with or without other salts or compounds, substantially as and for the purposes hereinbefore described.

No. 32,458. Steam Engine. (*Machine à vapeur.*)

Flora Williams, (assignee of John H. Williams), Urbana, Ohio, U.S., 7th October, 1889; 5 years.

Claim.—1st. The combination, with a circular valve chest C, of a valve K and its adjustable central arbor G, means to adjust said arbor inward, and preserve contact between the valve and the face of the chamber, and suitable packing L, P^1 and Q^1 between the ends of the valve and the upper side of the valve casing. 2nd. The combination, with a steam cylinder A and its circular valve chest C, a bearing E in the cylinder, and a central opening in the chamber cap D, of a valve K fitted to oscillate within the said chamber, and having spring-actuated packing strips L, P^1 and Q^1 between its ends and its upper edge and the valve chamber, the valve arbor G mounted in said bearing E and opening and having a shoulder H, a plate I fitted upon the arbor G against the said shoulder H, and adjusting screws J, J, connecting the plate with the cap. 3rd. The combination, with a circular valve chamber C, a flanged cap D F, and a central opening in the cap, and a recess within the flange, of a valve K mounted in the chamber, and its arbor G fitted to the central opening in the cap, and having a shoulder H which fits said recess, an adjusting plate I embracing the shaft and fitted against the shoulder H, and screws J, J which connect said plate with said flange. 4th. The combination, with a circular valve chest C, of a valve K mounted therein and recessed on its upper side and at its ends, and extensible packing strips L mounted in said recesses, and spring between said strips and said valve to project the strips upward and outward. 5th. The combination, with the valve consisting of an oscillating bar K grooved at its upper side and at its ends, of packing strips L fitted in said grooves and composed of overlapping sections, the outer section of which having a vertical part P which fits the end recesses, and springs which press the sections upward and other springs which respectively press the outer sections upward and the vertical part of such sections outward. 6th. The combination, with the valve chest composed of an annular body C, a cap-plate D of two steam pipes C^1 and D^1 which connect with the steam chest at diametrical points and communicate therewith, an oscillating valve K whose shaft G is mounted in said chest, and cylindrical ports within said chest. 7th. The combination, with a steam cylinder A, and a steam chest C, of steam pipes B opening into said chest in the form of elongated tapering mouths, the annular ends of said mouths being nearest the centre of said steam chest, whence the mouths widen toward the end of the cylinder, the said ports extending through the walls of the cylinder, and widening from said mouths to their termini at or near the ends of the cylinder, at which points they occupy a portion of the circumference of the cylinder.

No. 32,459. Battery for the Storage of Electricity. (*Accumulateur d'électricité.*)

Charles Norsworthy and John C. Lyndop, (assignees of William Morrison), St. Thomas, Ont., 7th October, 1889; 5 years.

Claim.—1st. The method in which the plates M are wound, substantially as and for the purpose hereinbefore set forth. 2nd. The method of regulating the plates M by means of the lever D, substantially as and for the purpose hereinbefore set forth.

No. 32,460. Device for Protecting Electric Conductors. (*Appareil pour protéger les conducteurs d'électricité.*)

Edward G. Acheson and Joseph W. Marsh, Pittsburgh, Penn., U.S., 7th October, 1889; 5 years.

Claim.—1st. As a means of preventing the disruptive discharge of a conductor through its surrounding insulator, an arm arranged to receive the discharge at a potential below that necessary for striking through the insulator, substantially as described. 2nd. An insulated conductor or cable having static discharge points arranged at a less electrical distance than the electrical distance of the insulation surrounding the conductor, substantially as described. 3rd. The combination, with an insulated conductor and its enclosing casing, of static discharge rods arranged on the conductor and case, substantially as described. 4th. The combination, with an insulated conductor, and an enclosing case, of adjustable rods connected to the conductor and case, substantially as described. 5th. The combination, with an insulated conductor and enclosing case, of clamps mounted on said conductor, and case, and adjustable rods supported in said clamps, substantially as described. 6th. The combination, with a cable having an insulated conductor, of static discharge points connected therewith, and a signal apparatus connected with the cable to indicate the discharge, substantially as described. 7th. The combination, with an insulated conductor and enclosing case, of static discharge rods connected with the conductor and case, and a fusible connection between the rods and conductor, substantially as described.

No. 32,461. Connector for the Elements of Electric Batteries. (*Appareil pour relier les couples des piles électriques.*)

The Railway Electric Car Lighting and Signal Company, East Orange and Camden, N.J., (assignee of Sidney H. Barrett, Springfield, Mass.), U.S., 7th October, 1889; 5 years.

Claim.—1st. In a connector for secondary batteries, the combination of mercury-cups on rigid projections from the electrodes, and the immersed U-formed coupler. 2nd. A flexible and protected connector for secondary batteries, consisting of the combination of rigid integral projections from the electrodes to points outside of and below the cell-tops, the mercury cups rigidly attached to the respective projections, the U-formed coupling wire and the protecting and flexible sleeves. 3rd. The connector consisting of electrode-projections 3 terminating in mercury cups 4, which receives the end of the coupling wire 5, and the protecting sleeve 7. 4th. In a connector for secondary batteries, the combination of electrode-projections 3, mercury cups 4, U-formed coupling wire 5 having the insulating coverings 6, and the projecting rubber sleeves 7, for the purposes set forth.

No. 32,462. Potato Digger and Picker.

(*Scarificateur-trieur à patates.*)

Herbert Horner, Port Perry, Ont., 8th October, 1889; 5 years.

Claim.—1st. A potato digger, consisting of a bar iron frame carrying a platform, the gearing shoe and a sifting cage, and supported at the rear by a castor wheel, and near the front by wheels at an adjustable height, an axle journalled in levers having their rear end pivoted near the rear of the front portion of the frame and within the same, and having their segmental fronts attached to chains secured to chain wheels upon a shaft carrying ratchet wheels held by detents and operated by hand levers, wheels journalled upon the axle and operated by ratchet connections, and adapted for lateral adjustment, a sprocket wheel journalled upon the axle, a clutch feathered upon the axle and pressed into gear by a spring and controlled by a shifting fork controlled by an operating device, a shaft parallel to the axle and in rear thereof carrying a smaller sprocket wheel, and geared to the other sprocket wheel by a pitch chain, said shaft carrying a mitre wheel, the conical sifting cage composed of ends connected by longitudinal wires or bars, and having a shaft journalled longitudinally upon the rear portion of the main frame, and carrying a mitred wheel gearing in the mitre wheel, upon the rear cross shaft, said cage having internal archimedean screw blades, and provided with shields at the front rear end on one side, and a shoe K carried on a bracket K_1, secured to the frame in front of the cage, substantially as set forth. 2nd. In a potato digger, the combination of the bar frame A, A^1, A^{11}, and the longitudinal bars A^{11} being arched over the axle to allow the axle to rise above the level of the frame, and carrying a platform A^{111}, the axle B journalled in the levers B^1, the levers B having segmental front ends b^{11}, and having their rear ends pivoted at the rear of the front portion of the frame and to the inside thereof, and the upper end of each of the segments having the end of a chain secured thereto, the platform A^{111} secured upon the bars A^{11}, a shaft D journalled upon the front of the frame A, chain wheels C^{11}, secured in said shaft, chain C, each having one end secured to one of the chain wheels c^{11}, and the other to the segments b^{11}, and passing over a friction pulley C^1, ratchet wheel D^1 secured upon the shaft D by set screw, and having a detent d^1 gearing into it, lever D^{111} pivoted upon the shaft by an oblong eye, and having a dog d^{111} adapted to engage the teeth of the ratchet wheel, substantially as set forth. 3rd. In a potato digger, the combination, with the frame A, A^1, A^{11} and foot board A^{111}, the shaft D journalled thereon, chain wheels C^{11} keyed to said shaft, ratchet wheel D^{11} secured upon one end of said shaft by set-screw a, lever D^4 pivoted to said shaft by an oblong eye, and having a dog d^4 adapted to engage the teeth of said ratchet wheel, a detent d^5 pivoted to said frame A and engaging the teeth of said ratchet wheel and having a handle d^6, substantially as set forth. 4th. In a potato digger, the combination of the frame A, A^1, A^{11}, the levers B^1 and axle B, the wheels F journalled upon said shaft and connected therewith by a ratchet movement, the sprocket wheel G journalled upon said axle, and provided with lateral teeth adapted to be engaged by a clutch, the clutch H feathered to said axle and adapted to engage said sprocket wheel, and controlled by a shifting fork, the spring H held by a collar on said axle, and adapted to push the clutch H into gear, the shifting fork 1 engaging said clutch H and held at one end upon a rod, the rod or bolt 1 holding one end of said fork and secured to said bars A^{11}, parallel to the axle B, the bracket 1^{11} secured to one of the bars A^{11} and having a hub or bearing i^{11}, the flat bar 1^{111} journalled to said bracket 1^{11}, and provided with handle i^{111}, and adapted to bear with one edge on the shifting fork T, and press the same, so as to push the clutch H out of gear, substantially as set forth. 5th. In a potato digger, the combination of the frame A, A^1 A^{11}, the levers B^1 and axle B, the wheels F journalled upon said shaft, and connected therewith by a ratchet movement, the sprocket wheel G journalled upon said axle, and provided with lateral teeth adapted to be engaged by a clutch H feathered to said axle and adapted to engage said sprocket wheel and controlled by a shifting fork, the spring H^1 held by a collar on said axle, and adapted to push the clutch H into gear, the shifting fork 1 engaging said clutch H and held at one end upon a rod, the rod or bolt 1^1 holding one end of said fork and secured to said bars A^{11}, parallel to the axle B, the bracket 1^{11} secured to one of the bars A^{11}, and having a hub or bearing 1^{11}, the flat bar 1^{111} journalled in said bracket 1^{11}, and provided with handle 1^{111} and adapted to bear with one edge on the shifting fork T and press the same, so as to push the clutch H out of gear, substantially as set forth. 5th. In a potato digger, the combination of the frame A, A^1, A^{11} and levers B^1, the axle B carrying the sprocket wheel, the shaft J journalled to the bars A^{11}, parallel to the axle B, a small sprocket wheel G^1 keyed upon said shaft and geared to the sprocket wheel G, by a pitch chain G^{11} the cage shaft M journalled upon the mean part of the frame and connected by mitre gear to the shaft J, the mitre gear J^1, J^{11} upon the said shafts J and M, substantially as set forth. 6th. In a potato digger, the combination of the frame A, A^1, the bracket K secured to said bracket, substantially as set forth. 7th. In a potato digger, the combination of the frame A, A^1, A^{11}, the conical sifting cage M, having open ends mounted upon a shaft M journalled upon said frame and connected by gearing, said ends connected by longitudinal bars or wires o, and held by a hoop N^1, and said cage provided with internal archimedean screw blades M^1, M^{11}, and with an adjustable front shield O and side shield Q, substantially as set forth. In the sifting cage of a potato digger, the combination of the central shaft M, the open ends M connected by longitudinal bars or wires N held by a hoop N^1, said ends varying, its diameter being larger in front and smaller at the rear, so as to give a conical shape, the archimedean screw blades M^1 extending through the cage and the short screw blades M^{11}, the front shield O held adjustably to the cross bar of the frame by a slotted bar O^1 pivoted to said plate, and the side shield S secured to the frame, substantially as set forth.

No. 32,463. Radiator Coupling.

(*Assemblage de calorifère.*)

William C. Sellers and Charles Sellers, Toronto, Ont., 8th October, 1889; 5 years.

Claim.—1st. The combination of two or more radiator sections having top and base chambers a, provided with two openings at one end on opposite sides, and an internal bridge or stay formed in the same chamber, and a tie-rod or bolt passing through the said bridges and openings, substantially as and for the purpose set forth. 2nd. The combination of two or more radiator sections, having top and base chambers a provided with two openings at one end on opposite sides, the male collar D fitting into the female collar E, having a small flange e on its inner end, and an internal bridge or stay formed in the said chambers, and a tie rod or bolt passing through the said bridges and openings, as and for the purpose set forth.

No. 32,464. Stove Drum or Heater.

(*Poêle sourd.*)

Robert O. Dobbin, Breslan, Ont., 8th October, 1889; 5 years.

Claim.—The construction of a drum or heater, with the partition C in the upper drum head, in combination with the damper D, the pipes F, F, e, e, e, etc., and the lower drum head, substantially as above described and set forth.

No. 32,465. Water Works. (*Aqueduc.*)

Robert C. Sayer, Bristol, Eng., 8th October, 1889; 5 years.

Claim.—1st. The construction and arrangement of apparatus for gathering, cleansing, filtering and storing water, consisting of a strainer A, a separator B, an auxiliary storage tank C for unfiltered water, a filter D and a storage tank E for filtered water, provided with an overflow flushing and drawing off apparatus F, substantially as set forth. 2nd. In apparatus for gathering, cleansing, filtering and storing water, a strainer, consisting of sleeve 1, sliding on pipe 2 and passing through cover 3 into vessel 4, with outlet 5 and with wire netting 6 containing carbon, the water passing through the sleeve 1 into wire netting 6 and drawing in air under the cover 3 and to the outlet 5, substantially as set forth. 3rd. In apparatus for gathering, cleansing, filtering and storing water, a separator for separating the dirty water first collected from the clean water subsequently collected, comprising a container 8, with dished cover 7, and outlet at 16, central taper pipe 9 working in horizontal spindle 10, and being secured to lever 11, carrying balance weight 13 and pan 12, and the jaw 12 with overflow pipe 14, the water first collected on the dished cover passing through aperture 15 to pan 12, which is depressed, diverting the water from trough 18 to container 8 and outlet at 16, substantially as set forth. 4th. In apparatus for gathering, cleansing, filtering and storing water, a separator for separating the dirty water first collected from the clean water subseqnently collected, comprising a container 8 with outlet, a small pipe 19 with variable orifice 20 opening into supply pipe 17 and into pan 12, central taper tube 9, working on horizontal spindle 10 and secured to lever 11, carrying pan 12 and pan 12 with perforated overflow 21, a portion of the water first collected passing through pipe 19 to pan 12, which is depressed, diverting the water from trough 18 to container 8 and outlet at 16, substantially as set forth. 5th. In apparatus for gathering, cleansing, filter-

ing and storing water, the flushing apparatus for cleansing the auxiliary storage tank, consisting of a bent pipe with outer flange secured to outside of said tank, and with inner flange within said tank, and of a disc secured to a rod passing through the bent pipe, and provided with a nut, the said disc sliding on a guide 53 in the bent pipe, and bearing against the inner flange with interposed elastic packing, the tank being flushed by loosening the nut and forcing back the disc, substantially as set forth. 6th. In apparatus for gathering, cleansing, filtering and storing water, a filter consisting of parallel plates 23, perforated with small holes or with wire gauze fixed over a hole in each, the said holes being arranged so that the hole in each plate is at the opposite end to the holes in adjacent plates, or formed porous at alternate ends of rings 27, filtering corrugations in plates 23, having plugged holes 25 of interposed elastic cushions, and of side bolts 28 serving to draw up the plates and so form a series of water tight compartments, in which the filtering material is placed, substantially as set forth. 7th. In apparatus for gathering, cleansing, filtering and storing water, a filter, consisting of parallel plates 23 attached to the side 29, and perforated with small holes or with wire gauze fixed over a hole in each, the said holes being arranged so that the hole in each plate is at the opposite end to the hole in adjacent plates, or formed porous at alternate ends of the side 29 being provided with holes similar to 25, Fig. 6, on opposite sides, and adapted for removing the filtering material and for closing with the plugs 24, drawn together by bolts 26 or plugs only, and so form a series of water-tight compartments, in which the filtering material is placed, substantially as set forth. 8th. In apparatus for gathering, cleansing, filtering and storing water, the combined overflow, flushing and drawing off arrangement, consisting of overflow bent pipe 20, sliding on bracket 32 inside the storage tank, and provided with flange 31 adapted to bear on inside of said tank, with interposed elastic packing ring 33, of bent pipe 34 passing through side of tank, and working horizontally in pipe 30, and provided with a collar 36, sliding on stop guide 43, and adapted to bear on outside of said tank, with interposed elastic packing ring, of a transverse pipe 38 and stump bolt 39, both secured in T-pipe 40, and pipe 30, of pipe 41 secured in T-pipe 40, and passing through pipe 34 to outside of said tank, and carrying stop tap 42 at external end, and nut 44 on pipe 41, said pipes 30 and 34 serving for the overflow, the tank being flushed by working the nut 44, allowing large volume of water to escape through side of the tank, and the water being drawn off through the pipe 38, T-pipe 40, pipe 41 and tap 42, substantially as set forth. 9th. In apparatus for gathering, cleansing, filtering and storing water, the combined flushing and drawing off arrangement, consisting of perforated tube 50, with flange secured to the inside of the storage tank, of bent tube 46, with flange secured to outside of tank opposite said tube 50, and having its inner end projecting into said tank, of pipe 47 passing through the pipe 46, and having secured on its inner end a disc 48, guided in perforated tube and adapted to bear against flange or inner end of tube 46, with interposed elastic ring 48, of nut 51 on pipe 47 for flushing the said tank, and of stop tap 42 on outer end for drawing off water, substantially as set forth. 10th. In apparatus for gathering, cleansing, filtering and storing water, a storage tank consisting of ware socket pipes 64 fitted together with cement and resting upon a cement bed 65, and supported by buttresses 66 and pannelled walling 67, of cover exit plugged sockets 68, abutting against cross wall 69, of warming pipes 71, with expansion joints 72, 73, and diaphragm and carrying valves 74 opening when the water is being drawn off, but preventing leakage backwards, substantially as set forth.

No. 32,466. Filter. (*Filtre.*)

Robert C. Sayer, Bristol, Eng., 8th October, 1889 : 5 years.

Claim.—1st. In a filter, the combination of a vessel *a*, provided with an external flange *f* near the bottom, and having in its bottom and at one side thereof a group or series of fine perforations *c*, covered with a special sieve *d*, a disk *h* corresponding in size and shape to the vessel *a*, provided with an external flange *g* and having in its bottom and at one side thereof a group or series of fine perforations *c* covered by a special sieve *d*, and in its side outlets *l* secured to the bottom of the vessel *a* in such a position that perforations *c* and sieve *d* are on the opposite side of the perforations in the bottom of the vessel *a*, by means of bolts *e* passing through the flanges *f* and *g*, and having an elastic packing ring *k* interposed, the elastic packing ring *k*, a layer of filtering material covering the bottom of the vessel *a*, and a layer of filtering material in the dish *h*, filling the space between the bottom of the same and the vessel *a*, and sufficient in quantity to be slightly compressed by the action of the bolts *e* and the elastic ring *k*, substantially as set forth. 2nd. A filter, composed of a vessel to contain water, and filtering material, provided near the bottom with an external flange adapted to support the same upon another vessel, and for securing thereto one or more dishes of the same size and shape containing filtering material, a series of dishes of the same shape as said vessel, each having an external flange for securing same to the bottom of said vessel and to the bottom of the preceding dish respectively by bolts passing through the flange on said vessel, and having an elastic packing ring interposed between its upper edge and the bottom to which it is secured, the bottom of said vessel and each dish having on one side a group of fine perforations, covered with a fine wire gauze sieve situated on opposite sides, the vessel containing a layer of filtering material, and each dish filled with filtering material to such an extent as to be slightly compressed by the action of the elastic packing ring and the securing bolts, and each dish provided with apertures on opposite sides adapted for emptying the filtering material and for closing with a plug, substantially as set forth. 3rd. In a filter, the combination, with the bottom supporting the filtering material, provided with a group of fine perforations and an encircling fine groove, a sieve *d* formed of two thicknesses of solid carbon, slate or other material, by which the sizes of the perforations of the sieve are regulated with mathematical exactitude to the size required, and the edge of said sieve secured to said encircling groove, substantially as set forth. 4th. In a filter, the combination, with a dish *h*, containing filtering material and secured to the bottom of a vessel by bolts, the apertures *l* in the side of said dish, situated opposite each other, adapted for emptying said dish, and adapted to be closed by plugs.

No. 32,467. Method of Making Connections with Carbon. (*Mode de raccordement avec du charbon.*)

The Thomson-Houston International Electric Company, Boston, (assignee of Hermann Lemp, Lynn), Mass., U.S., 8th October, 1889 ; 5 years.

Claim.—1st. The herein-described method of connecting a carbon conductor with another body, which consists in forming a deposit upon said carbon by passing a current through the carbon while the portion of the body to be connected therewith by said deposit is in position to be engaged by said deposit but out of circuit, substantially as described. 2nd. The method of connecting a carbon filament with another body, which consists in placing the body to be connected in proximity to the said filament, and then depositing carbon upon the said filament until it engages the adjacent body or parts thereof, substantially as described. 3rd. The method of connecting a carbon filament with another body, which consists in placing portions of said body adjacent to the said filament, and passing an electric current through the portion of the filament that extends past the adjacent body while surrounded by a carbon depositing fluid, substantially as described.

No. 32,468. Joint or Connection between Carbon, or Material having Similar properties, and other Bodies. (*Joint ou liaison entre le charbon, ou autre matériel ayant les mêmes propriétés, et d'autres corps.*)

The Thomson-Houston International Electric Company, Boston, (assignee of Hermann Lemp, Lynn), Mass., U.S., 8th October, 1889 ; 5 years.

Claim.—The carbon filament and body joined thereto, and a deposit on said filament interposed between the said filament and body which are out of contact with one another, but connected by the said intervening deposit, substantially as described.

No. 32,469. Alternating Current Electric Motor. (*Moteur électrique à courant alternatif.*)

The Thomson-Houston International Electric Company, Boston, (assignee of Elihu Thomson, Lynn), Mass., U.S., 8th October, 1889 ; 5 years.

Claim.—1st. In an alternating-current electric motor, in which the reaction between an alternating field and currents induced by such field in a closed-circuit armature is employed as the motive force, a ring or endless structure of iron I carrying coils A operated on closed local circuit. 2nd. In an alternating current electric motor having an alternating field and a closed-circuit conductor, the reaction between which and the field produces motive effects, an external ring I carrying coils A on locally-closed circuit, and an internal electro-magnet F carrying coils C connected to an alternating source, as and for the purpose described. 3rd. In an alternating current electric motor, an alternating-current field-coil C fixed in position, as described, and wound over a suitable core F, and a revoluble ring-magnet I carrying the coils which form the circuit for the induced currents by whose reaction the ring is revolved. 4th. In an alternating-current electric motor having a closed electric circuit for induced currents, by the reaction of which, on an inducing alternating field, the motor is operated, a laminated external ring-magnet in combination with a laminated internal magnet, formed, as shown and described, with a central reduced portion for the coils, and enlarged polar portions conforming to the circular internal line of the outer ring-magnet, both said magnets being wound with suitable coils, one set of which is closed on itself. 5th. In an alternating-current electric motor, having a closed armature-circuit, as described, forming the path of induced currents by whose reaction motion is produced, means for varying the resistance to such induced currents for the purpose of regulating the speed or power of the motor. 6th. In an alternating-current electric motor, the combination, with the closed circuit for the the induced currents, of means for varying the resistance to the induced currents, and a speed governor for adjusting the devices which vary the resistance. 7th. The combination, substantially as described, of the speed-governor, a double flange disk or clutch I connected therewith, a roll H, and a screw and worm wheel T X, the worm wheel X carrying an arm J, which supports the device for producing variations in the resistance to the alternating currents. 8th. The combination, substantially as described, of the circular-shaped core I carrying coils A, an internal inducing alternating field-magnet F C, and a commutator K for closing the circuit of coils A in the same plane, when by reason of rotation of the shaft with the motor such plane is parallel with the plane of the coils C.

No. 32,470. Alternating Current Electric Motor. (*Moteur électrique à courant alternatif.*)

The Thomson-Houston International Electric Company, Boston, (assignee of Elihu Thomson, Lynn), Mass., U.S., 8th October, 1889 ; 5 years.

Claim.—1st. In an alternating-current electric motor, the combination of a field-magnet having a series of poles, four or more, and wound with coils connected to an alternating-current source, in a manner to produce poles alternately north and south at the same time, and an armature having a corresponding number of poles, said armature being wound with coils forming the seat of currents induced by the field-magnet, and connected in a continuously closed uncommuted local circuit, as and for the purpose described. 2nd. In an alternating-current electric motor, the combination of a field-magnet core of ring-form, having internal radial projections, coils wound in the spaces between said projections, and connected in pro-

per manner to produce poles alternately north and south with any given current, a single alternating current source connected to said coils, and an armature in the form of a cylinder having polar projections the same in number as those of the field, and provided with half as many coils as the field, each of said coils being on closed circuit, as and for the purpose described. 3rd. The combination, with an alternating-current electric motor composed of a multipolar alternating field-magnet, and an armature having a corresponding number of poles, and wound with coils placed on continued locally-closed circuit while the motor is running, of a mechanical starting device, as and for the purpose described 4th. The combination, with an alternating-current motor, of a mechanical propelling or starting device geared thereto through a gear cut away or reduced, so as to become automatically disengaged from the motor when the latter has been brought to the desired speed. 5th. The combination, with an alternating-current electric motor, of a propelling or starting power geared to the motor through a wheel or gear, which is provided with a gap or cut-away portion, and a stop for bringing the gear to rest in position of disengagement, as and for the purpose described. 6th. The combination, with an alternating-current electric motor, of a starting or propelling device for giving initial rotation to the same, and a switch controlled by said starting device for turning the energizing current into the motor after the same has received its mechanical impulse, as and for the purpose described. 7th. In an alternating-current electric motor, the combination, of a field-magnet maintained by energizing-coils supplied with a single set of alternating currents, and an induced current armature carrying coils which are kept on continually-closed circuit independent of the first set, and with their same ends continually connected to the same poles of the external conductor of circuit over which their closure is effected. 8th. An alternating-current motor comprising a multipolar field-magnet, having four or more poles alternately north and south maintained by a single alternating current in the field-magnet coils, and an armature wound with a set of coils of high self-induction on a separate local circuit continuously closed while the motor is running at speed, and having a number of poles or polar projections the same as the field, as and for the purpose described. 9th. The combination, with an alternating-current motor, of a mechanical starting or propelling mechanism, and an electric switch controlled thereby for connecting the motor to the energizing source when the armature has been speeded. 10th. The combination, with an alternating-current electric motor provided with starting devices, of a speed gauge or governor, and mechanism controlled by said governor for throwing the work onto the motor when the same has reached the required speed, as and for the purpose described. 11th. The combination, with an alternating-current electric motor, of a commutator connected with the local circuit, armature coils for cutting them out of circuit at predetermined points, a speed gauge or governor, and mechanism controlled by said governor for putting the armature coils on continuously-closed circuit, when the motor has reached the required speed. 12th. In an alternating-current electric motor, the combination of an energizing field-magnet maintained by a series of energizing coils supplied with a single set of alternating currents, and an armature having a set of poles alternately north and south at the same time, under the influence of induced currents in armature coils which are continually on closed uncommuted circuit while the armature is running.

No. 32,471. Method of Ornamenting Watch Case Centres and other like articles. (*Mode d'ornementation des boîtes de montres et autres objets semblables.*)

Robbins and Appleton, New York, (assignee of Adolph W. Hofmann, Brooklyn), N.Y., U.S., 8th October, 1889; 5 years.

Claim.—The improved method hereinbefore described of ornamenting the peripheries of watch case centres, or other like articles, the same consisting in holding a portion of the surface of an embossing die in contact with the surface of the article to be ornamented, said portion being less in width than the entire width of the ornamenting surface of the die, imparting a reciprocating or reversing rotary movement to one of said surfaces, and at the same time laterally moving the point of contact of the die with the surface being ornamented thereby laterally extending or widening the area of ornamentation, as set forth.

No. 32,472. Paper Cutter.

(*Machine à trancher le papier.*)

The American Roll Paper Company, (assignee of Leo Ehrlich), St. Louis, Mo., U.S., 8th October, 1889; 5 years.

Claim.—1st. In a paper-cutter, the combination, of the ends in which the roller is journalled, and which are provided with an upper and lower series of lugs, and a knife having ends and moving in the lugs, substantially as and for the purpose set forth. 2nd. In a paper-cutter, the combination of the ends forming a support for the roller, and having lugs and the knife movably and removably secured to the ends, by fitting between said lugs so as to move by gravity as the paper is taken from the roller, substantially as and for the purpose set forth.

No. 32,473. Car Mover. (*Moteur de char.*)

Matthew F. Connett and Frederick H. Smith, Peoria, Ill., U.S., 8th October, 1889; 5 years.

Claim.—1st. A car starter and mover, comprising in combination, a support A, a roller C on one end of the support to engage the rail, and a roller C^1 adjacent to the roller C to engage the car-wheel, and means, substantially as described, connected with the said rollers for rotating them in opposite directions, substantially as and for the purpose set forth. 2nd. The combination of a support A, roller *q*, co-operating rollers C, C^1 on one end of the support, and means, substantially as described, connected with the said rollers C, C^1, for rotating them in opposite directions, substantially as and for the purpose set forth. 3rd. A car starter and mover, comprising in combination, a support A, a roller C on one end of the support to engage the rail, and a roller C^1 adjacent to the roller C to engage the car-wheel, a wheel D connected with one of the rollers, a wheel E on the support geared to the wheel D, and a crank F for operating the wheel E, substantially as described. 4th. The combination of a support A, adjustable frame B on the end of the support, carrying a roller *q*, and co-operating rollers C, C^1, and means, substantially as described, connected with the said rollers C, C^1 for rotating them in opposite directions, substantially as and for the purpose set forth. 5th. The combination of a bar A, adjustable frame B supported on the end of the bar carrying a roller *q*, and co-operating rollers C, C^1 rotatory wheels D and E geared together, and a crank F connected with the wheel E, substantially as and for the purpose set forth. 6th. A car starter and mover, comprising in combination, a support A, a roller C on one end of the support in close-fitting journal bearings, and a second roller C^1 adjacent to said first roller and normally in contact therewith in loose-fitting journal bearings, and means, substantially as described, connected with one of said rollers to rotate it in one direction and through it the other roller in the opposite direction, substantially as and for the purpose set forth.

No. 32,474. Journal Box. (*Boîte de tourillon.*)

Thomas E. Hays and Albert J. Read, Milwaukee, Wis., U.S., 10th October, 1889; 5 years.

Claim.—1st. The combination, in a journal box, of a transverse concave web, provided with one or more longitudinal openings, an oil-reservoir beneath said web, and a spring-controlled wick extended through each of said openings, and adapted to come in contact with a journal located above said web, substantially as set forth. 2nd. The combination, in a journal-box, of a transverse concave web, provided with one or more longitudinal openings, an oil reservoir beneath said web, a spring-controlled wick extended through each of said openings, and a pair of overlapping spring-actuated non-absorbent plates whose adjacent ends are cut out to receive a journal located above said web, and in contact with said wick or wicks, substantially as set forth. 3rd. The combination, in a journal-box, of a shell provided with a bearing, a hollow casting supported in the shell, and having its front of such area as to entirely close the front of said shell, and a spring-controlled wick-carrying tray having a perforated bottom, and arranged to depend into said casting, substantially as set forth. 4th. The combination, in a journal-box, of a shell provided with a bearing, a hollow casting having a concave upper face provided with a central opening and concave recess, a flanged circular plate extended above said concave face, an arch adjacent to the plate, and a groove in the bottom of said casting, a pin passed through the sides of the shell to engage the groove in the casting, and a spring-controlled wick-carrying tray having a perforated bottom, and arranged to depend into the casting, substantially as set forth.

No. 32,475. Scaffold Bracket.

(*Ecoperche d'échafaud.*)

Everett A. Brace, Moberly, Mo., U.S., 10th October, 1889; 5 years.

Claim.—In a scaffold bracket, the combination of the main beam having the rack and the groove, the lateral projections on said beam, the fastening at its upper end, the adjustable pivoted base beam and the adjustable brace, having the bifurcated end, and the projection to engage in the groove of the main beam, substantially as specified

No. 32,476. Car Truck. (*Châssis de char.*)

Benjamin F. Manier, Troy, N.Y., U.S., 10th October, 1889; 5 years.

Claim.—1st. The combination in a truck frame, of the side bars A^1, A^2, composed of flat metal bars arranged vertically edgewise in pairs, and bolted together, substantially as described, and the vertical uprights connecting said bars, and the transverse connecting bars, substantially as specified. 2nd. The combination in a truck, of the side frames composed of side bars A^1, A^2, each consisting of two parallel flat metal bars set edgewise, and connected, substantially as described, the uprights B, B, and the transverse connecting bars D, D and E, all substantially as and for the purpose set forth. 3rd. The combination of the truck frame with the body supporting springs, and vertically movable caps I, I, resting on said springs and supporting the body, all substantially as specified. 4th. The combination of the side bars A^1 A^2, springs supported on bars A^2, exterior to the axles, the caps I having shanks I playing through bar A^1, and the bar F supported on said shanks, substantially as and for the purpose specified. 5th. The combination of the truck frame, composed of side bars A^1, A^2, uprights B, B, and transverse connecting bars D, D and E, with the car axles boxes B^1 and springs F, F, all substantially as set forth. 6th. The combination of the truck frame, having compound side bars A, A^1, A^2, with the stirrup blocks C, springs thereon, caps I and bars F, all as and for the purpose described. 7th. The combination of the truck frame, composed of side bars A^1, A^2, the latter being depressed at centre, the uprights B, B, and transverse bars D, D, and E, and bolts E^1, with the car axle boxes playing between uprights B, B, the springs F, F, and car body sustaining springs arranged on the truck exterior to the axles, substantially as described. 8th. The herein described truck, consisting of the side frames composed of compound bars A^1, A^2, uprights B, B and transverse braces D, D and E, and bolts E^1, E^1, the stirrup blocks C, C, springs thereon, the vertically movable caps I, having shanks *i* playing through bars A^1, and the body bars J, J, all constructed and arranged as and for the purpose described.

No. 32,477. Grate Bar. (*Barreau de grille.*)

James Elliott, Montreal, Que., 11th October, 1889; 5 years.

Claim.—1st. The improved grate bar, having recesses *a* and openings *b*, substantially as and for the purposes described. 2nd. The improved grate bar, having the recesses *a* in its sides, substantially as described.

No. 32,478. Fire Escape. (*Sauveteur d'incendie.*)

Rev. Arthur E. Jones, Montreal, Que., 11th October, 1889 ; 5 years.

Claim.—1st. The combination in a fire escape, of the floors or platforms having openings *g*, with posts or tubes extending through the openings *g* to the floors or platforms alternately, substantially as described. 2nd. The combination in a fire escape, of the posts or tubes *f*, having inlet and outlet pipes, as described, with floors or platforms *c*, having openings *g*, the whole substantially as described. 3rd. The combination in a fire escape, of the posts or tubes *f*, floors, or platforms, *c*, having openings *g*, and spring platforms *h*, the whole substantially as described. 4th. The combination in a fire escape, of the removabl floors or platforms *c*, having openings *g*, with posts or tubes *f*, the whole substantiall as described.

No. 32,479. Car Axle Box and Bearing.

(*Boîte et coussinet de tourillon.*)

George W. Fulmer and Dan T. Fry, Water Valley, Miss., U. S., 11th October, 1889 ; 5 years.

Claim.—1st. In a car axle bearing, the combination, with the wheel having a journal, and the flanged roller bearing supported on the axle journal, and having a shaft or journal projecting from its inner side only, of the box supported on the shaft of the said roller, substantially as described. 2nd. The combination of a wheel, having a journal, the flanged roller supported on the said journal, and having a shaft or journal projecting from its said inner side, said shaft having a flange, the box having a shoulder to rest against one side of the flange, and the brass fitted in the box and adapted to bear against the other side of the flange, substantially as described. 3rd. The combination of the wheel, having a journal, the roller supported on the journal and having a shaft projecting from its inner side, said shaft having a flange on its inner end, the box mounted on the shaft and having a shoulder which is adapted to bear against one side of the flange, the brass interposed between the shaft and the box, and having its end adapted to bear against the other side of the flange, and having an extension on its back, which extension is fitted in a corresponding recess in the box, substantially as described. 4th. The combination, with the wheel having a journal, and the flanged roller supported on the journal and having a shaft on its inner side only, of the box mounted on the said shaft, and having a recess in its side to give clearance for the flange of the roller, whereby the shaft, the journal and the flange of the said roller are in approximately the same vertical plane, substantially as described. 5th. In a car axle bearing, the combination, with the box D, having a recess *h* in its side, of the guide block I fitted in the said recess, and having a limited vertical movement, substantially as described. 6th. In a car axle bearing, the combination, with the box D, having a recess *m* in its side, of the guide block fitted in the said recess, and having the shoulder *i* and the wheel having a corresponding shoulder a^1 on its journal, substantially as described for the purpose specified. 7th. The combination of the wheel having a shoulder on its journal, the flanged roller supported on the said journal, and having a shaft on its inner side, the box mounted on the said shaft, having a recess in its side, and the guide block fitted in the said recess and having a corresponding shoulder to fit against the shoulder on said journal, substantially as described. 8th. The herein described box, having a recess *e* in its front side, near its upper end, and having its lower portion hollow, and provided with an opening leading from the hollow portion, said box having openings for the reception of the journals, substantially as described for the purpose specified.

No. 32,480. Steam Boiler.

(*Chaudière à vapeur.*)

George Kingsley, Lowell, Mass., U.S., 11th October, 1889 ; 5 years.,

Claim.—The combination, with a double shell horizontal boiler having an inner and outer fire space and a water space between, of a series of inclined laterally projecting tubes C screwed into the inner shell, so as to communicate with the water space, and having their inner ends closed and elevated and projecting into the inner fire space, and the stay bolts c alternating with the tubes C and connecting the shells, substantially as shown and described.

No. 32,481. Sugar Sap Evaporator.

(*Appareil évaporatoire de l'eau saccharine.*)

Clark Hall and William H. Wright, East Farnham, Que., 11th October, 1889 ; 5 years.

Claim.—The combination, with an evaporator, of the small compartments F, F^1, with their openings closed by the slides H, H^1, the feed tube or pipe L for conveying the sap from the spout D in the back of the heater C into the small compartments F, F^1, or into the back end of the deep flues K^1, K^2, substantially as and for the purpose hereinbefore set forth.

No. 32,482. Reel Support for Harvesters.

(*Support de râteau de moissonneuses.*)

John S. Davis, Cleveland, Ohio, U.S., 11th October, 1889 ; 5 years.

Claim.—1st. An overhanging support for the outer end of a reel shaft, consisting of the post B^1, rigidly attached near the rear side of the platform, the thrust bar B pivotally secured at its heel near the lower end of the post, and the tie-rod B^2 extending from the top of the post to the top of the bar, and means whereby its length may be adjusted to change the position of the reel shaft, substantially as hereinbefore set forth. 2nd. An overhanging adjustable support for the outer end of a reel shaft, consisting of the post B^1 rigidly secured to the platform near its rear, the brace bar B adjustably attached at its heel near the lower end of the post by a bolt *b*, and the series fo holes b^1, b^2, the tie-rod B^2 passing from the top of the bar through the top of the post, screw-threaded at its end and provided with adjusting nuts, substantially as hereinbefore set forth. 3rd. The combination of the reel shaft, the independently adjustable supports at its ends with bearing boxes mounted in universal joints on the supports, substantially as hereinbefore set forth. 4th. The combination of the reel shaft, the driving wheel screwed thereon, as described, the hub of the spider G^1 rigidly secured upon the shaft, the bearing box F between the driving wheel and the spider hub, and the spacing thimble or sleeve slightly longer than the bearing box within which it embraces the shaft, as and for the purpose hereinbefore set forth.

No. 32,483. Combined Wood and Coal Stove

(*Poêle à bois et à charbon.*)

Ophin L. Gadoury, St. Placide, Que., 11th October, 1889 ; 5 years.

Claim.—1st. A stove, having two compartments, one for burning coal and one for wood, and an oven having flues and dampers, so that either compartment may be used, substantially as shown and described. 2nd. In a cooking stove, the combination in a stove A, having a partition C, doors B, D and E, fire pot F, spider G, shaker H, of the oven I having flues K, K and M, and dampers L, substantially as shown and described.

No. 32,484. Boring Machine.

(*Machine à forer.*)

Harlin Longwell, Elkland, Penn,, U.S., 11th October, 1889 ; 5 years.

Claim.—1st. In a wood boring and metal drilling machine, the combination, with a bracket frame B and perforated and threaded bosses *b*, b^1, of a hollow feed screw H, a drill spindle L, a set screw C, a sliding bracket plate I, a driving bevel gear wheel D and a bevel pinion E, substantially as set forth. 2nd. In a wood boring and metal drilling machine, the combination, with a hollow feed screw H, a drill spindle L, a balance wheel G, a bevel pinion E and drill chuck F, of a bracket frame B, a sliding bracket plate I, a bevel gear wheel D, a frictional feeding device that transmits motion from the drill spindle to the feed screw, and a crank handle J, substantially as set forth. 3rd. In a wood-boring and metal drilling machine, the combination, with a bracket frame B, of a hollow feed screw H, a drill spindle L, an adjustable frictional feeding device that transmits rotary motion from the drill spindle to the feed screw, a bevel gear wheel D, a bevel pinion E, a crank J, a balance wheel G and a sliding bracket plate I, substantially as set forth.

No. 32,485. Electric Clock.

(*Horloge électrique.*)

George Hess, Zurich, Ont., 11th October, 1889 ; 5 years.

Claim.—1st. The above described apparatus for operating any number of clocks at any distance apart, by transmitting thereto the motion of a single pendulum, consisting of a pendulum rod A, connecting rod B pivoted at *a* to frame work and carrying on its lower end the "impulse" C, which vibrates the current changer D, and with it the small roller I, thereby changing the current from one to the other, of a pair of metal strips H, H^1, which is thence transmitted by wires J, M to electro-magnets K, K^1, which operate an armature L, and with it the connecting rod and pendulum, substantially as shown and specified. 2nd. The above described apparatus for communicating motion to the hands of the clocks, consisting of the electro-magnets K, K^1 and N, armature O, connecting wire *c*, dog P, ratchet wheel Q, screw pinion R, wheels S and Z and coil spring T, all arranged and operated as shown and specified. 3rd. The above described apparatus for communicating motion to the striking mechanism of clocks, consisting of an electric motor U, screw pinion V, cog wheel W, pinion X and rack Y, all arranged and operating substantially as shown and specified and for the purpose hereinbefore set forth.

No. 32,486. Belt Gearing.

(*Communication de mouvement par courroies.*

John A. Lough, Chetopa, Kan., U.S., 11th October, 1889 ; 5 years.

Claim.—The combination, with two adjacent pulleys, and the belt B passed around said pulleys, of the main driving belt C passing over the belt B, and in contact with it points where it passes around both pulleys, substantially as set forth.

No. 32,487. Automatic Car Coupler.

(*Attelage de chars automatique.*)

James A. Hinson, Des Moines, Iowa, U.S,. 11th October, 1889 ; 5 years.

Claim.—1st. The combination, in a car-coupler, of the draw-bar A having the hollow offset *c*, the arms B, B^1, the former having the flanges *d* cast integral therewith, the recesses *e* formed in said flanges, the slots *f* entering said recesses, the movable jaw C having the branches *b*, b^1, the oblong journals f^1 cast with said jaws, the pivoted latch E, and means for operating said latch, all formed as and for the purpose hereinbefore set forth. 2nd. The combination, in a car-coupler, of the hollow draw-bar A having the offset *c*, and arms B, B^1 cast therewith, the latch E pivoted in said draw-bar, the spring bearing against said latch, the chain connected to said latch, a rod connected to said chain, and the movable jaw C pivoted to said arm B and having the branches *b*, b^1, one of said branches being adapted to swing against the latch, all formed as and for the purpose hereinbefore set forth. 3rd. A movable jaw C for a car-coupler consisting of the branches *b*, b^1, the former having the hook *h* cast therewith and its end tapered, the oblong journals f^1, formed at the junction of the branches *b*, b^1, the curved shoulders g^1 formed on the ends of branch b^1, the slot or pocket d^1 formed in said branch, the opening or perforation e^1 intersecting said slot or pocket, and the curved grooves p^1 formed in the edge of said jaw, all formed as and for the purpose hereinbefore set

forth. 4th. The combination in a car-coupler, with a draw-bar A having the arm B, provided with flanges d having recesses e therein, and slot f entering said recesses, of the movable jaw C having branches b, b^1 the oblong journals f^1 cast with said jaw, a latch E pivoted in said draw-bar, and means for swinging or moving said latch, all formed as and for the purpose hereinbefore set forth. 5th. The combination, in a car-coupler, with a draw bar A having an arm B, provided with flanges d having circular recesses e therein, and slots f entering said recesses, of the movable jaw C having the oblong journals f^1 cast therewith, and curved grooves p^1 formed in the edge of said jaw, and the perforated block n^2 having a curved shoulder m^1 adapted to fit said groove, all formed as and for the purpose hereinbefore set forth. 6th. The combination, in a car-coupler, of the hollow draw-bar A having flaring arms B, B^1, and a recess a between said arms, the wedge-shaped recess g formed on the inner side of one of said arms, the flanges d having circular recesses e, and slots f entering said recesses, the hollow offset c, the latch E pivoted in said draw-bar, the spring bearing against said latch, the movable jaw C having the oblong journals f^1, the branch b having the hook h, and tapering end, the curved slots p^1 formed in said jaw, the branch b^1 having the rounded outer face and provided with the slots or pocket d^1, the opening e^1 intersecting said poeket, and the curved shoulders g^1, all formed as and for the purpose hereinbefore set forth.

No. 32,488. Metal Railroad Tie.

(Traverse métallique de chemin de fer.)

Benjamin W. Ellicott, Flemington, N.J., U.S., 11th October, 1889; 5 years.

Claim.—1st. In a metal railroad tie, in combination, a foundation plate A provided with abutment ribs in rear of the standards of the rail-rest, and a flexible transverse rail-rest having abutment ribs for the rails between the said standards of the rail-rest, substantially as and for the purpose described. 2nd. In a metal railroad tie, in combination, the plate A provided with abutment ribs a, a^1, a^2, a^3, abutment blocks a^5 having bevelled portions c^5 and lugs c^6, and a flexible rail-rest B having foot portions c^2 with bevelled portions c^4, and a notch c^9, substantially as and for the purpose described. 3rd. In a metal railroad tie, the flexible rail-rest B formed with foot portions c^2, curved standard portions f, abutments m, m^1, inside of or between the standards, substantially as and for the purpose described. 4th. In a metal railroad tie, in combination, the flexible rail-rest B having abutments m, m^1 between its standards, chair plates C, C^1, and the foundation plate A having abutments for the feet of the rail-rest, substantially as described. 5th. In a metallic railroad tie, in combination, the flexible rail-rest B, chair plates C, C^1 extended beyond the edges of the rail-rest, and griping clips D passed under the rest and through the chair plates, substantially as described. 6th. In a metal railroad tie, in combination, the rest formed of two spliced parts c, c^1, provided with abutment ribs m, m^1, and having parallel portions terminated in shoulders h^1, then tapered for a portion of their length, then made of uniform thickness from said tapered portion to their standards f, then bent into curved standards of a thickness equal to the last mentioned portion, and terminating in thicker abutting foot portions, substantially as and for the purpose described. 7th. In a metal railroad tie, in combination, the flexible rail-rest having abutment ribs between its standards, and provided with standards and abutting foot portions, said portions extending inward from said standards, a greater distance than outward, substantially as and for the purpose described. 8th. The flexible spliced rail-rest, in combination with a rigid foundation abutment plate, substantially as described. 9th. The abutment ribs a, a^2 of the foundation plate, made of less height than the abutment ribs a^1, a^3, and with a bevel surface a^4, substantially as described. 10th. The abutment ribs m, m^1 of the rail-rest, those m^1 being made of a less height than the ribs m, in combination with the differently formed chair-plates C, C^1, and the rails c^2, c^3, substantially as and for the purpose described. 11th. The combination, of the auxiliary braces E, rail-rest, rail and foundation plate A, substantially as described. 12th. In combination, with a rigid or solid plate or foundation, a flexible transverse rail-rest receiving the rails between its bearings, said transverse rail-rest yielding at once under a load bodily throughout its entire length and thickness between the foundation supports, and in thus yielding assuming a downwardly curved or approximately segmental form, and, when the load is withdrawn, resuming its original straight shape, substantially as and for the purpose described.

No. 32,489. Combined Sand Band and Wheel Retainer. *(Rondelle d'essieu de voiture.)*

Franklin E. Peebles, Martinsburgh, N.Y., U.S., 11th October, 1889. 5 years.

Claim.—1st. A combined wheel-retainer and sand band, comprising a box in the hub having a spiral web, and an arm on the axle carrying a guard adapted to work within said box, as set forth. 2nd. The combination, with the hub and axle, of the box secured in said hub and formed with internal spiral web, and the arm secured to the axle and formed with an arc-shaped guard adapted to fit within said box and engage said spiral web, substantially as and for the purpose specified.

No. 32,490. Siphon. *(Siphon.)*

Michael Siersdorfer, Louisville, Ky., U.S., 11th October, 1889; 5 years.

Claim.—1st. The combination, with the suction device, of two tubes having communication therewith, a valve in each of said tubes arranged with their openings in opposite directions, whereby one is constituted an outlet and the other an inlet, a cut off in one of said tubes, and a spring for holding said cut-off normally in one position, and a strainer in one of said tubes, for the purpose described as shown in Fig. 1 of the drawings. 2nd. The combination, with the flexible bulb 1, having tubes 2, 3 inserted therein, balls 4 in each of said tubes, flanges or valve-seats 5 arranged in said tubes between the bulb and said balls, a cage 14 partially surrounding said balls for retaining them, a dome or box 12 on the tube 3, a stem projecting vertically through said dome, a disk 10 on the lower end of said stem 11, a lug on said stem, a spiral spring surrounding said stem between said lug and tube 3, a strainer 6 located in one of said tubes and a ring 8 on the under side of tube 3, all substantially as shown in Fig. 1 of the drawings. 3rd. The combination, with the flexible bulb 1, of the tubes 2, 3 in said bulb, the valves 6, 9, for the purpose described, the spigot 12a, secured to tube 2, a chamber 11 in said spigot having valve-seat 24, and opening 12, a cover 13 having box 14, the valve-stem 16 having shoulder 18, the spiral spring 19 coiled in said box between the said shoulder and cover, and the finger-ring 28, substantially as shown in Fig. 2 of the drawings. 4th. The combination, with the bulb 1, of a spigot connected therewith, a valve in said spigot opening away from said bulb, a partition in said spigot forming a chamber 11, and having an opening 12 therein, a valve-seat surrounding said opening, the removable cover 13 in said chamber, a valve-stem projecting through said cover, a valve on said stem, and a spring for holding said valve normally open, substantially as described and as shown in Fig. 2 of the drawings. 5th. The combination, with the flexible bulb 1 having tubes 2, 3 inserted therein, a suitable valve located in the tube 2, and a second valve located in the tube 3, said latter valve being operated and controlled by means of the hollow vertically moving stem 11, disk 10, spring 13 and thumb-lever 22, all substantially as described in Fig. 3 of the drawings. 6th. The combination, in a siphon, of the flexible bulb 1, the tube 2 having a valve chamber therein, and provided with a valve 19 mounted on a longitudinally moving stem 20, and a second tube 3 likewise provided with a valve chamber and valve, the latter being mounted on the pin 13, said parts being guided and controlled substantially as hereinbefore shown and described in Fig. 3 of the drawings. 7th. In combination with a siphon, the straining device consisting of the wire frame or cage on which is mounted a suitable straining cloth, and a locking ring 16, as described in Fig. 3 of the drawings.

No. 32,491. Potato Digger.

(Scarificateur à patates.)

Alvin N. Woodard, Jamestown, N.Y., U.S., 11th October, 1889; 5 years.

Claim.—1st. In a potato digger, the combination of an inclined frame supported upon ground wheels, a plough pivotally connected at the forward end of the frame, a slatted carrier for elevating the earth, and a double inclined apron below said carrier, substantially as described. 2nd. In a potato digger, the combination, of an inclined frame supported upon the ground wheels of a plough pivotally connected at the forward end to the frame, of a slatted carrier carried upon sprocket wheels in the end of the frame, and operated by connection with the gear wheel on the axle, a double inclined apron below said carrier extending below the sides of the frame, substantially as described. 3rd. In a potato digger, the combination of the following elements: ground wheels journalled upon stub-axles, an inclined frame, a carrier extending around said frame, and an apron below said carrier, said apron having the straight portion O^1, double inclined portion O and the curved portion Q, and stop P, substantially as described. 4th. In a potato digger, the combination, of ground wheels journalled upon stub-axles secured in the inclined frame C, the arch D connecting the sides of the frame, a plough pivotally connected to the forward end of the frame, the sides H of the plough, of the handles R extending to the rear of the machine, and bearing at or near their middle upon the arch D, substantially as and for the purpose described.

No. 32,492. Pencil Sharpener. *(Taille-crayon.*

Thomas H. Stafford, Concord, N.H., U.S., 12th October, 1889; 5 years.

Claim.—1st. In a pencil-sharpener, the hinged cutter-frames and knives attached to their free ends, and suitable guide rolls, all substantially for the purpose set forth. 2nd. In a pencil-sharpener, the hinged cutter-frames, swivel cutters attached thereto adapted to make a tapering cut on opposite sides of a pencil, and guide rolls connected to said cutters in a manner calculated to regulate their cut, all arranged substantially as for the purpose set forth. 3rd. In a pencil-sharpener, the oppositely inclined spring cutters adapted to make a tapering cut on opposite sides of a pencil, and suitable spring rolls for separating said cutters as required.

No. 32,493. Boiler. *(Chaudière.)*

John Lapp, Honeoye Falls, N.Y., U.S., 12th October, 1889; 5 years.

Claim.—1st. A hot water heating apparatus, consisting of hollow sides, hollow ends and hollow top secured together, and communicating with each other through coincident ports in their vertical meeting edges, of the side ports in the lower face of the top adjacent to the outer edges, and coinciding with ports in the upper edge of the sides, and water inlet and outlet pipes, and a grate and fire pot, substantially as described. 2nd. A hot water heating apparatus, comprising sides and ends, and top in separate sections secured together, all being hollow and communicating together, and a grate and fire pot, a casing and horizontal partition between the sides and ends, and the casing constituting a reverse flue, and a partition across the top provided with a damper in combination, substantially as described. 3rd. A heating apparatus, consisting of hollow sections in separate pieces, hollow ends and hollow top sections secured together and communicating with each other internally, and tubes extending from the sides into the top of the combustion chamber and nearly across it, a grate and fire pot, water inlet and outlet pipes, and an external casing creating flues exterior to the sides and ends and above the top, substantially as described. 4th. A hot water heating apparatus consisting of a hollow side piece, a hollow back, a hollow top, provided with an opening for escape of the products of combustion, a hollow front, the sides, back, front and top being secured together, and all communicating with each other internally, one section being cut away on one edge, and its meeting section being cut away in like manner,

and means for closing the opening, and a casing and a partition between the casing and the walls of the apparatus and water inlet and outlet pipes, substantially as described, 5th, A section for a wall of a hot water heating apparatus, comprising a vertical portion, and an inwardly and downwardly contracted portion, all hollow and integral, and provided with ports in the edges to connect it to the adjoining section, and flanges for securing the lower end to the adjoining section, substantially as described.

No. 32,494. Nut Lock. (*Arrête écrou.*)

Walter T. Ross. Quebec, Que., 12th October, 1889; 5 years.

Claim.—1st. The combination, with the drawer front or wooden structure A, bolt or shank C and nut D, of the pin E, having a square and tapering end driven into the wood, and an offset or shoulder embedded therein by driving, and an exposed portion to engage the nut, as set forth. 2nd. The pin E, having an offset or shoulder, as set forth for the purpose described.

No. 32,495. Automati Grain Weigher. (*Bascule à grains automatique.*)

Elis A. Hoover, West Milton, and John B. Touts, Troy, Ohio, U. S., 12th October, 1889; 5 years.

Claim.—1st. The combination in an automatic grain weigher, of a main frame, a weighing receptacle without partition, a chute for conveying the grain thereto, a downwardly swinging effluent valve journalled on said receptacle, and provided with a weighted arm to close said valve, as relieved from the weight of the discharging grain, a weighted catch to lock said valve in normal position, a weighted forked beam fulcrumed near its ends on the main frame, with a counter weight to maintain a horizontal position of said receptacle, a rising and falling secondary receptacle fulcrumed on the sides of the main frame, an arm of said secondary receptacle to engage said effluent valve, and hold the same open until freed from the discharging grain and raised by the counter-weight, the rod of the effluent valve closing the chute by means of the influent valve during said discharge, and said valve opening by a weight when freed from the operation of said arm, substantially as described. 2nd. The combination, in a grain weigher, of the secondary receptacle fulcrumed on the frame and in balance by counter-weight, the arm of said receptacle rising to engage the arm of the effluent valve by the accumulated grain in said secondary receptacle and said effluent valve, the same being pivoted to the outside of the weighing receptacle, and closing the same when unloaded and locked by the catch pivoted on the opposite side of the receptacle and held open by the arm or lug of said secondary receptacle, until there is a full discharge of the grain, substantially as described. 3rd. The combination in a grain weigher, of the influent or cut-off valve pivoted on the frame, and held from closing said chute by a counter-weight on the arm thereof, the effluent valve having a rod hinged to it to engage the aforesaid arm, said effluent valve being pivoted to the outside of the weighing receptacle and closing the same, said rod rising to throw said cut-off valve over the mouth of said chute as said valve is opened by the discharge of the grain, the release of said effluent valve being effected by the descent of said weighing receptacle, which disengages the locking catch as the load overcomes the counter-weight of the supporting beam, substantially as described.

No. 32,496. Whistle. (*Sifflet.*)

James R. Eldridge, Loran E. Baker and Reuben McKinnon, Yarmouth, N.S., 12th October, 1889; 5 years.

Claim.—1st. The combination, with a steam whistle, of a sound deflector supported above the same, having a curved under surface, substantially as shown and described. 2nd. The combination, with a whistle, of a sound deflector supported above the same, provided with a central stem upon the under surface, the exterior of which stem is concaved, substantially as shown and described. 3rd. The combination, with a steam whistle, of a sound deflector supported above the same, provided with a central stem upon the under surface and having the under face upwardly and outwardly curved from the base of the stem, which curve is merged into an essentially horizontal line near the periphery of the deflector, substantially as and for the purpose specified. 4th. The combination, with a steam whistle, of a sound deflector supported above the same, provided with a stem upon the under face, and having the under surface curved from the base of the stem essentially to the periphery of the deflector, and provided with a convex outer surface, and means, substantially as shown and described, for supporting the said deflector, as and for the purpose specified.

No. 32,497. Door Bell. (*Timbre de porte.*)

P. and F. Corbin, New Britain (assignees of Henry Leach, Bristol), Conn., U.S., 12th October, 1889; 5 years.

Claim.—1st. In a door bell, the combination of a spring-actuated alarm movement and hammer wire, a slide 17, having a holding and releasing dog 18, arranged to move transversely to the movement of said hammer wire, a spring 19 for holding said dog in engagement with said hammer wire, and a push button 21 at the other end of said slide for throwing said dog out of engagement with said hammer wire, substantially as described and for the purpose specified. 2nd. In a door bell, the combination of the vibratory hammer wire, the slide 17, push-button 21 at one end of said slide, a holding and releasing dog adapted to move with said slide transversely from and to the path of said hammer wire, said dog being provided with a beveled face upon that side which first engages the hammer wire when moving into its path, substantially as described and for the purpose specified.

No. 32,498. Double-Acting Pump. (*Pompe à double effett.*)

August Reiling and Martin Van B. Spencer, Fort Wayne, Ind., U.S., 12th October, 1889; 5 years.

Claim.—A double-acting pump, consisting of a detachable base 5, provided with a chamber 8 communicating by a passage 10 with the upper end of the pump cylinder above the piston, a pipe 16 at the opposite side of the cylinder communicating with the latter above and below the piston, and having at its upper end a detachable valve chamber 16*a* fitted to the cylinder beneath its upper end, and from which rises a service pipe 17, and a downwardly closing valve 20 and a laterally closing spring-impelled valve 21, both located in said valve chamber, substantially as shown and described.

No. 32,499. Water Heater. (*Calorifère à eau.*)

Warden King (assignee of Archibald Spencer), Montreal, Que., 12th October, 1889; 5 years.

Claim.—The combination in a heater, of the sections B, C, and D having the projecting integral portions b^1, c^1 and d^1, forming the water connection to the said sections, also having diaphragms b^2, c^2 and d^2, the whole substantially as described.

No. 32,500. Method of Producing High Explosives. (*Mode de production des explosifs puissant.*)

Hudson Maxim, Pittsfield, Mass., U.S., 14th October, 1889; 5 years.

Claim.—1st. The herein described process of producing high explosives, consisting in dissolving gun cotton or nitro-cellulose in a suitable solvent, adding to the dissolved nitro-cellulose nitro-glycerine and then evaporating from the mixture the volatile solvent, substantilly as set forth. 2nd. The process herein described for manufacturing explosives, which consist in dissolving nitro-cellulose in a volatile solvent, combining therewith nitro-glycerine and evaporating the volatile solvent therefrom, after the admixture of the nitro-glycerine.

No. 32,501. Concentrating Table. (*Table de concentration.*)

John Alves, Melbourne, Victoria, 14th October, 1889; 5 years.

Claim—1st. A concentrating table, in which wire netting, perforated metal, or their mechanical equivalent, is laid upon a comparatively soft and yielding bed (preferably of india-rubber laid upon blanking), which bed rests upon the bottom of the table, substantially as herein described and explained and as illustrated in my drawings. 2nd. As a modification of my invention, I also claim a concentrating table, in which wire-netting, perforated metal, or their mechanical equivalent, is laid upon a hard bed, instead of the comparatively soft and yielding bed referred to in the first claim, whether such hard bed consist of amalgamating plates or not.

No. 32,502. Opening and Closing Drive Gates. (*Ouverture et fermeture des barrières glissantes.*)

Jonathan M. Gustin, Wilmington, Ohio, U. S., 14th October, 1889; 5 years.

Claim.—1st. In combination with a gate, a plate supported upon the hinge post M, provided with slot for the guidance of the upper pintle, and with a fulcrum bolt, a pair of crossed levers pivoted upon said fulcrum bolt, a link connecting the inner end of each lever to the upper pintle of the gate, and means for operating the levers, all substantially as described. 2nd. In combination with a gate, having a pintle at the top of its hinge style, a plate supported upon the hinge post, provided with a V-shaped slot to guide the upper pintle, and with a fulcrum bolt, a pair of crossed angle levers pivoted upon said fulcrum bolt, a link connecting the inner end of each to the gate pintle, a pair of upright levers pivoted upon the hinge post and connected to the other ends of the cross-levers, and operating cords extending along the road side from the free ends of the levers, all substantially as described.

No. 32,503. Steam Boiler and Appliance therefor. (*Chaudière à vapeur et accessoire.*)

Joseph A. Eno, Newark, N. J., U. S., 14th October, 1889; 5 years.

Claim.—1st, The improved steam generator, herein described, combining therein a boiler, having the water leg *b* forming a pocket at the sides of the fire-box, a mud drum arranged at the side of said boiler, as shown, heating pipes arranged within the said fire-box, pipes connecting said drum with the water leg and with the said heating pipes, and a pipe connecting said heating pipes with the upper part of the boiler, substantially as set forth. 2nd. In combination with a vertical boiler, having a water leg, a mud-drum arranged on the outside thereof, a collection of heating or circulating pipes, disposed within the fire box at the upper part thereof, and pipes leading from the heating pipes through the water leg to the outside of said boiler, and connecting with the mud-drum, and pipes leading from said heating pipes to the upper part of the boiler, substantially as and for the purpose set forth.

No. 32,504. Device tor Holding Head-Gear. (*Appareil pour attacher les coiffures.*)

Drusillia M. Fuller, Terryville, Conn., U. S., 14th October, 1889; 5 years.

Claim.—1st. In a device for supporting and holding head-gear, the combination of a standard, having a disk on its top, and a movable

disk supported on a spring-arm, and a catch attachable to the spring arm, and arranged to engage with the spring-arm and to hold the two disks together. 2nd. In a device for supporting and holding head-gear, the combination of the standard A having the disk E on its top, the disk B supported on the spring-arm D attached to the standard, and so bent at C as to form a hook and engage that part of the spring-arm which supports the disk B. 3rd. In a device for supporting and holding head-gear, the combination of the standard A, exterior disk B, and a wire supporting the exterior disk B, and forming the catch C and spring D, and extending through the standard A, and having its projecting end provided with screw-thread *g* and a nut H. 4th. In a device for supporting and holding head-gear, the combination, with the standard A, and interior disk A attached thereto, of an elastic wire supporting the movable exterior disk B and formed with the catch C arranged to hold the two disks together, and with the offset at J, for the purpose and substantially in the manner described.

No. 32,505. Reed and Flue Pipe for Organs

(*Tuyau d'orgue.*)

John Stafford, Lower Cove, N.S., 14th October, 1889; 5 years.

Claim.—In a pipe or flue for wind instruments, the combination of the foot tube having the sound-producing agent arranged without the same, and the parallel imperforate tubes B, B of equal length communicating at one end with the said foot-tube, substantially as specified.

No. 32,506. Piano. (*Piano.*)

Henry W. Smith, Boston, Mass., U.S., 14th October, 1889; 5 years.

Claim.—A piano with a wooden case, having its outer surface insulated from the surrounding air by an elastic coating of cloth, or other similar material, substantially as described.

No. 32,507. Trace Buckle. (*Boucle de trait.*)

Vincent A. Coleman, Port Hope, Ont., 14th October, 1889; 5 years.

Claim.—1st. In a trace buckle, the tongue-plate, or shield C having its inner surface which comes in contact with the trace plane, and hinged to the bail D, in the manner and for the purpose substantially as set forth. 2nd. In combination with the body of the buckle, and the tongue-plate C, herein described, the bale D with its hooks or trunnions K, K centrally hinged to the said tongue-plate C, substantially as described and for the purpose set forth. 3rd. In the herein-described buckle, the body having the side-pieces A, A connected by the three cross bars F, G and H forming a bed for the trace, and between which and the tongue-plate C the trace is clamped, also having the recesses in the side-pieces A, A between the cross bars *g* and H for the reception of the hooks K, K of the bail D, for the purposes and in the manner substantially as set forth. 4th. In the draw link B, the part passing over the tongue-plate C slightly oval, and the angles *b*, *b* somewhat rounded, in the manner and for the purposes substantially as herein set forth.

No. 32,508. Fertilizer Distributer.

(*Semoir d'engrais.*)

William Josleyn, Bedford, Que., Harry Watkins, Phœnix, and Daniel H. Gowing, Syracuse, N.Y., U.S., 14th October, 1889; 5 years.

Claim.—1st. The combination of an axle 8, a loose traction wheel W, a collar 2, and a pin 3, substantially as specified. 2nd. The combination of an axle 8, a loose traction wheel W, a collar or disk 2, a disk 4, a pin 3, substantially as and for the purpose specified. 3rd. The combination of an axle 8, a loose traction wheel W, a collar 2, a pin 3, and spring *r*, substantially as and for the purpose specified. 4th. The combination of an axle 8, loose traction wheel W, the collar 2, the disk 6, and pins 3, substantially as specified. 5th. The combination in a fertilizer distributer, of the floor *s*, the beater B, and the teeth *t*, arranged substantially as and for the purpose specified. 6th. The combination, in a fertilizer distributer, of the floor *s*, the comb-board *e* and the rearwardly-deflected spring teeth *f*, substantially as and for the purpose specified. 7th. The combination, in a fertilizer distributer, of the floor *s*, the beater B having teeth *t* arranged substantially as described, and the comb-board *e* having rearwardly-deflected spring teeth *f*, substantially as and for the purpose specified. 8th. The combination of the gear 6 and its connections, substantially as described, with the intermediate disk, gear 14, and the shaft 17 and its connections, substantially as and for the purpose set forth. 9th. The combination of an intermediate disk gear 14, having a series of teeth *x*, *y*, *z* of varying diametrical pitch, pinions upon opposite sides of said disk connected respectively to the traction wheel axle and to the floor actuating mechanism, substantially as and for the purpose described. 10th. The combination, in a fertilizer distributer, of a driving axle, the floor *s*, the sprocket wheel 22, shaft 20, worm wheel 18, worm 19, shaft 17, pinion 15, intermediary disk gear 14, pinion 13, shaft 12, gears 10 and 6, substantially as and for the purpose specified. 11th. The combination of the pins 3, 3, disks 4, 4, springs *r*, *r*, connecting rods g^2, g^2, the bell-crank D having arms *l*, l^1, l^2, the rod E, and the spring *i*, substantially as and for the purpose set forth. 12th. The beater teeth *t*, *t* having a screw-shank and a flat or free extremity, substantially as and for the purpose described.

No. 32,509. Fruit Picker. (*Jaffet.*)

John B. Marshall, Sunny Side, N.J., U.S., 14th October, 1889; 5 years.

Claim.—1st. In a fruit picker, the combination of the conductor or tube, the receiver affixed thereto, and provided with an opening in its side, having serrated upper and lower edges, the chute secured to the conductor-tube, and the handle secured to one side of said tube, as set forth. 2nd. The combination of the chute and the conductor-tube having the tongues L, engaging the upper edge of the chute to secure it to the conductor-tube, as set forth.

No. 32,510. Slide Valve. (*Tiroir de vapeur.*)

William A. Robinson, Memphis, Tenn., U.S., 15th October, 1889; 5 years.

Claim.—1st. The combination, with the steam-chest having the ingress and exhaust ports, of the two steam-chambers located within the said chest and at both ends, and having vertical faces 3 elongated toward each other, and arranged parallel with two ports therein communicating with the ports in the chest respectively, and valves fitted between said elongated faces 3, connected together and having cavities 11 on both sides, adapted to cover both ports in each face. 2nd. The combination, with the steam-chest having ports 8, 9, and the valve, of the steam-chambers in said chest having ports 6, 7 communicating with ports 9, 8, respectively, and set-screws bearing upon the tops and sides of said steam-chambers, substantially as set forth. 3rd. The combination, with the steam chest having ports 8, 9, and the slide-valve, of the steam-chambers in said chest having ports 6, 7 communicating with ports 9, 8, respectively, and set-screws bearing upon the tops and sides of said chambers and projecting through the plates of the chest, substantially as set forth. 4th. The combination, with the steam chest having ports 8, 9, and the slide-valve, of the steam-chambers in said chest having ports 6, 7 communicating with ports 9, 8, respectively, elongated bearings upon the tops of said chambers, and set-screws bearing upon said elongated bearings and upon the sides of said chambers, and projecting through the plates of the chest, substantially as set forth.

No. 32,511. Filter. (*Filtre.*)

Junius A. Bowden, Detroit, Mich., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a filter, the combination, with a suitable filter bed through which the water is passed, of an inclined imperforate bottom beneath said bed, and a water inlet pipe located adjacent to the base of the incline, whereby a discharge of water under pressure into the bed, at the base of the incline, will create a circulation of the material composing the bed, substantially as described. 2nd. In a filter composed of two compartments, one above the other, each having a bed of suitable filtering material, and each having suitable inlet and outlet pipes, the combination, with one or more conical diaphragms supported clear of the bottom of each compartment, of suitable water inlet pipes discharging water beneath the diaphragms for cleansing the bed, substantially as described. 3rd. In a filter, the combination, with the filtering bed, an inclined diaphragm or diaphragms located beneath said bed, and water inlet pipes located beneath said diaphragms, of loosening pipes K located in the bed above the diaphragms, substantially as described.

No. 32,512. Thill Coupling.

(*Armon de limonière.*)

Lewis Miller and Maurice L. Wright, Mexico, N.Y., U.S., 15th October, 1889; 5 years.

Claim.—1st. A thill-coupling composed of a shackle-eye formed in two sections, one of which is rigidly attached to, or integral with, the thill-iron, and the other section hinged to the rigid section, a clamp for holding the hinged eye-section in its closed position, and a safety-guard connected to the thill-iron, and adapted to embrace the said hinged eye-section, as set forth. 2nd. In combination, with the axle-clip and shaft-shackle projecting therefrom, the thill-iron I formed with the rigid eye-section *a*, the eye-section a^1 hinged on the rear portion of the rigid eye-section and formed with the forwardly-projecting tongue *b*, and the latch *l* hinged on the thill-iron and formed with the rearwardly-projecting guard *t*, extending between the rear of the eye-sections *a*, a^1 and axle-clip, and below the said clip, substantially as described and shown. 3rd. In combination with the thill-iron I formed with the eye-section *a*, the eye-section a^1 hinged on the section *a*, and having the forwardly-projecting tongue *b* provided with the recess *r* and the latch *l* hinged to the thill-iron, the bail *c* connected to the said latch and adapted to enter into the recess *r*, and the rubber cushion *e* seated in said recess, substantially as described and shown. 4th. In combination, with the thill-iron I formed with the rigid eye-section *a*, and the eye-section a^1 hinged on the rear portion of the rigid eye-section, and formed with the forwardly projecting tongue *b*, the latch *l* hinged to the thill-iron and formed with the thumb-piece *f*, and with the rearwardly-extending guard *t* embracing the rear portions of the eye-sections *a*, a^1, and the bail *c* connected to the latch and embracing the tongue *b*, substantially as described and shown.

No. 32,513. Rail Joint. (*Joint de rail.*)

John W. Cloud, Buffalo, N.Y., U.S., 15th October, 1889; 5 years.

Claim.—1st. A rail joint consisting of two fish-plates B, having inwardly-extending flanges *b* adapted to fit under the head of a rail, and provided with bolt-holes, outwardly-extending flanges b^1 adapted to extend along and over the rail base, and downwardly-extending flanges b^2, adapted to extend below the rail base without coming in contact with it, and provided with one or more bolt-holes b^3 at a point or points below the level of the rail base, in combination with bolts for securing the flanges *b* to the rail, and a bolt or bolts passing through the downwardly-extending flanges, said fish-plate flanges b^2 and the bolt or bolts uniting them beneath the rail base being so constructed and combined as not to press directly or indirectly upon the under side of the rail. 2nd. As a new article of manufacture, a railway fish-plate having an upwardly extending flange *b* adapted to fit beneath the head of the rail and provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, and a downwardly-extending flange b^2 adapted to ex-

tend below the rail base without coming tn contact with it or passing beneath its edges, and having one or more bolt holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 3rd. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b adapted to fit beneath the head of the rail, and provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, and a downwardly-extending flange b^2 shorter than the flange b, adapted to extend below the rail base without coming in contact with it or passing beneath its edges, and having one or more bolt-holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified 4th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b adapted to fit beneath the head of the rail, and provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, a downwardly-extending flange b^3, shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail-base, and a web b^4 connecting the flanges b and b^1, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 5th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b having projections b^5 adapted to fit beneath the head of the rail at the centre, and the ends of the flange, said upwardly-extending flange being provided with bolt-holes, an outwardly extending flange b^1 adapted to lie along and extend beyond the rail base, and a downwardly-extending flange b^3 shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 6th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b having projections b^5, adapted to fit beneath the head of the rail at the centre, and the ends of the flange, said upwardly-extending flange being provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, a downwardly-extending flange b^2 shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail base, and a web b^4 connecting the flanges b and b^1, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified.

No. 32,514. Pipe Elbow. (*Coude de tuyau.*)

Charles B. Cooper, New York, N. Y., U. S., 15th October, 1889; 5 years.

Claim.—1st. A curved pipe elbow consisting of a series of transverse sections, each formed of a single blank, one end or edge of each section being formed with an annular corrugation, said corrugation and the opposite end of the section being provided with transverse indentations, whereby, when the sections are secured together, the straight edge of the section fits on the corrugation of the next and the indentations intermesh, substantially as described. 2nd. A curved pipe elbow consisting of transverse sections concave at the throat and convex at the back, each formed of a single blank having its ends secured together, said sections being secured together at their ends, and the two end sections at about half their length departed from a curved form and made straight or tapering, for the purpose set forth. 3rd. A curved pipe elbow consisting of transverse sections concave at the throat, and convex on the back, each formed of a single blank having its ends secured together with matched grooves allowing the sections to revolve on their circumference, and the two end sections at about one-half their length departing from a curved form and made straight or tapering, for the purpose set forth. 4th. A sheet metal sectional curved elbow made in two or more transverse sections, the walls of which are made concave in the throat and convex on the back, and held together by the use of indentations made in the walls of the sections, where they lap on one another when jointed, and also by soldering, substantially as described. 5th. A sheet metal sectional curved elbow made in two or more transverse sections, with one or both end sections conforming part of their length to the arc of the corresponding section to which it is joined, and the other part of their length departed from the arc and made tapered or of the shape of a plain straight tube. 6th. A sheet metal sectional curved elbow made in two or more transverse sections, the walls of which are made concave in the throat, convex on the back, and which are joined or locked together with the seam made by joining such sections formed on the inside walls below the plane of the external surface of sections of such elbows, whereby the convex curve of the outer wall is continuous. 7th. A transverse curved elbow section convex on the back and concave at the throat, and formed from a flat blank tapering towards the ends and bent into circular form with the ends overlapping and secured together, anp the edges of the sections grooved.

No. 32,515. Butter Package.

(*Vaisseau pour le beurre.*)

Gilbert W. Bradley, Sunderland, Vt., U.S., 15th October, 1889; 5 years.

Claim.—1st. As an improved cover for cylindrical butter packages, a thin wooden disk, held in a flute or crease in a flanged metallic band by means of spurs which are struck up out of the material of the cylindrical portion of such band and are bent down internally against the under side of the disk, substantially in the manner described and set forth. 2nd. A metallic band for use in the manufacture of cylindrical packages or boxes, wherein a bent hoop is used for the body or walls, and thin disks are used for tops and bottoms or for covers thereof, provided with longitudinal struck up spurs at one end of such bands, and perforations at the opposite end thereof as means for uniting the ends of such bands and having a crease and flange to receive the edge of the disk, and a series of transverse struck up spurs adapted to be either bent down over the edge of the disk to confine the same within the band or to have their points bent and driven through the body of the package, as a provision for attaching the band either to the cover disk or to the hoop of the box, as described and set forth. 3rd. A metallic band for use in the manufacture of packages of the character described, provided with an annular crease for the reception of the edge of the disk-head and series of transverse struck up points or spurs, whereby the band may be connected with said disk to form a cover for a box or may be used as a hoop to confine the bottom to the body of the box itself, substantially as described and for the purposes set forth. 4th. A cylindrical package having a thin body part made of thin bent veneer, and a cover consisting of a thin disk held in a flanged and creased metallic band by means of struck up spurs bent down, as shown, in combination with a hook or staple h which catches into the gap left after the bending down of the spur by one leg of the staple and penetrates the wall of the box with the other leg, substantially as described and for the purpose set forth. 5th. A butter package consisting of a bent veneer body having the bottom held by a creased and flanged metallic band, the body and band being united by rivets and having a bent veneer lining, in combination with a cover consisting of a thin disk held in a flanged creased metallic band by means of spurs struck out of the material of the band and folded down upon the inner surface of the said disk, substantially in the manner described and for the purpose set forth. 6th. A metallic band for attaching the disk bottom of a cylindrical bent veneer box to the body thereof, provided with an annular crease to receive the edge of the disk bottom having transverse struck up points or spurs, the points of which may be bent at right angles with the roots of the spurs for the purpose of forcing them through the walls of the box, substantially as described and for the purposes set forth. 7th. A butter package consisting of an external wall of thin veneer having a bottom attached thereto by a crease and flanged metallic band, and provided with a lining of thin veneer curved to fit the wall of the package, substantially as described and for purposes set forth. 8th. A cylindrical butter package, the wall of which is of wood veneer having its overlapped ends united by sewing, and its bottom attached and held in position by a creased and flanged metallic band, substantially as shown, and provided with a cover consisting of a disk top confined in a similar creased and flanged metal band, substantially as specified.

No. 32,516. Rotary Engine. (*Machine rotative.*)

Marcellus A. Buford, Thompson's Station, Tenn., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a rotary engine, the combination, with a casing provided with a steam inlet chamber and steam exhaust chambers, of a main driving shaft mounted to rotate in the said casing, and a wheel secured on the said shaft in the said casing, and provided with central disks having inlet openings in their peripheries, and exhaust disks secured to the central disks and provided with outlet openings discharged into the said exhaust chambers, substantially as shown and described. 2nd. In a rotary engine, the combination, with the casing A provided with the walls, D and D^1 forming the chambers F and F_1, of the main driving shaft B mounted to rotate in the said casing, the wheel C secured on the said driving shaft and provided with the disks I, I^1, each having the spokes 13 and inlet openings 12 in its periphery, said wheel being also provided with the exhaust disks J and J^1, having spokes J^3, and exhaust disks J^2 registering with channels formed in the walls D and D^1, substantially as shown and described. 3rd. In a rotary engine, a casing, partition walls formed in the said casing and provided with channels leading into the outer chambers formed by the said partition walls, an inlet pipe leading to the central chamber formed by the said partition walls, and exhaust pipes leading from the outlet chambers formed by the said partition walls, in combination with the main driving shaft mounted to rotate centrally in the said casing, the disks I and I^1, secured on the said main driving shaft between the said partition walls, each disk being provided with spokes and inlet openings extending from the periphery through the said spokes, and exhaust disks secured on the said main driving shaft and abutting against the outer spaces of the said disks I and I^1, said exhaust disks being fitted in the said partition walls D and D^1, and provided with spokes, and exhaust openings in the periphery, said openings registering alternately with the channels in the partition walls, substantially as shown and described.

No. 32,517. Adjustable Grate Blower Handle. (*Manche mobile de rideau de foyer.*)

Joseph A. Côté, Ottawa, Ont., 15th October, 1889; 5 years.

Claim.—The handle B having a U-shaped end A fitted to it, forged or cast as shown, for the purposes described.

No. 32,518. Car Truck. (*Châssis de char.*)

William H. H. Sisum, Brooklyn, N.Y., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a car truck, the combination, with side frames provided with bearings, of a bolster made in three parts, comprising upper, middle, and lower parts, and springs arranged in pairs between the lower and middle parts, and other springs arranged in pairs between the middle and upper parts, substantially as specified. 2nd. In a car truck, the combination, with side frames provided with bearings for three pairs of wheels, of two bolsters connected together and severally composed of three parts comprising an upper, a central and a lower part, springs arranged between the lower and middle parts of each of said bolsters, and springs arranged between the middle and upper parts of each bolster, substantially as specified. 3rd. In a car truck, the combination, with frames provided with bearings, of a bolster comprising an upper, a middle and a lower beam, spiral springs arranged near the ends between the lower and middle beams, and other spiral springs between the middle and upper beams, substantially as specified. 4th. In a car truck, the bolster comprising the upper, the middle and the lower portions extending

across the truck, and spiral springs arranged between the upper and middle portions, and other spiral springs arranged between the middle and lower portions, substantially as specified. 5th. In a car truck, the combination of a side frame having two longitudinal bars, one above the other, and pedestal jaws consisting of pieces fitted and secured between the two longitudinal bars by means of bolts extending transversely through the said bars and lengthwise through the pedestal jaws, substantially as specified.. 6th. In a car truck, the combination, with a side frame and an oil box working within pedestal jaws comprised in said side frame, of a rocker supported upon the oil box, and a stirrup supported upon the rocker and engaged with said pedestal jaws, substantially as specified. 7th. In a car truck, the combination, with a side frame and an oil box working within pedestal jaws comprised in said side frame, of a rocker supported upon the oil box and a stirrup consisting of two upright bars and a cross-bar, the cross-bar resting upon the rocker, and the upright bars being engaged with the pedestal jaws, substantially as specified. 8th. In a car truck, the combination, with a side frame and an oil box working within pedestal jaws comprised in said side frame, of a rocker supported upon the oil box and a stirrup consisting of a cross-bar resting upon the rocker, two upright bars engaging with the pedestal jaws and provided with vertical slots receiving lugs with which the rocker is provided, substantially as specified.

No. 32,519. Folding Opera Chair.

(Fauteuil pliant d'opéra.)

Louis E. Granger, Chicago, Ill., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a folding-chair, the combination of a seat, consisting of a centre part having wings hinged to each side and forming part of the seat, and a supporting pedestal having pivotal connections for said seat, substantially as described. 2nd. In a folding-chair, the combination, with a supporting box-pedestal having an open top, of a seat pivoted to the pedestal at or near its front end, and having wings or sides folding inwardly at right angles to the centre of the seat when the seat is turned up, substantially as set forth, 3rd. In a folding chair, the combination, with a supporting pedestal, of a chair-back hinged thereto and consisting of a centre part, and folding wings hinged to the centre part, substantially as described. 4th. In a folding-chair, the combination of the pedestal, a chair-back in three parts and hinged thereto, the curved bar connected at its upper end to said back, the seat formed of a centre piece and folding wings, the centre part of the seat having an extension which is slotted to embrace said bar, and provided with friction roller bearing against the upper and lower edges of said bar, to ease the movement of the seat with reference thereto, substantially as described. 5th. In a folding-chair, the combination, with the folding back, the folding seat and the pedestal, of the curved bar secured at one end to the back, the inner end of the seat riding thereon, and the stop located on the lower end of said bar, substantially as described. 6th. In a folding-chair, the combination, with the pedestal, of the adjustable feet secured to the back part thereof, substantially as described. 7th. In a folding-chair, the combination of the pedestal, the folding sides or wings of the seat structure, and the strips of rubber recessed in and projecting a little above the top edges of the pedestal at each side, substantially as described. 8th. In a folding-chair, the combination of the rear extension of the seat, the corresponding downward extension of the back part, the curved bar and the rubber cushion attached to the lower end of said back part, substantially as described.

No. 32,520. Snow Plate for Horse Shoes.

(Plaque à neige pour les fers à cheval.)

Arthur D. Hamlin, Portland, Me., U.S., 15th October, 1889; 5 years.

Claim.—1st. A snow ball plate for a horse's hoof, consisting of a flanged piece of metal of a size about equal to the space inside the shoe, pivoted to and combined with a flanged piece of metal having combined therewith a spring, substantially as described. 2nd. A snow ball plate consisting of the flanged plate A having slot A^1, and the flanged plate C having spring E and the latch c^1 the said plates pivoted together, as described. 3rd. In a snow ball device for a horse's hoof, the plate A flanged at B, and having slot a^1 combined with, and pivoted to, the flanged plate C, whereby said plate C has free motion over said plate A, the plate C having at one side the spring E, and at its lower end, the catch c^1 formed with a handle c^2, substantially as described. 4th. The plate A having flange B at one side, the catch a^3 at its lower edge opposite to the flange B, and the upturned lower edges a^2, combined with the plate C having the flange D, and the spring E, and the handled catch c^1, substantially as described. 5th. In a snow ball plate for a horse's hoof, a plate fully covering the hoof inside the shoe and held in place by spring pressure, and adapted to be placed in or removed from position without the use of tools, substantially as described. 6th. A snow ball plate for a horse's hoof consisting of two parts or members, namely: a plate entirely covering the hoof inside the shoe, and another plate movable thereon and having integral therewith a spring, whereby the device can be held in place on the hoof, substantially as described. 7th. A snow ball plate for a horse's hoof, in which the outside plate which covers the entire hoof has side flanges, whereby snow and other substances will be prevented from entering between the plates and the hoof, substantially as described. 8th. In combination with the snow ball plate, as described, the washer G held in place at the upper end of the plate outside of plate A, by the bolt F, substantially as described. 9th. The two metallic imperforate and flanged plates A and C pivoted together at their upper ends, the one plate having a guide slot in which a headed bolt fixed at one end to the plate A is placed, thereby the two plates are confined together near their lower ends, but the one may be freely moved upon the other. 10th. The combination of the flanged and imperforate plates A and C pivoted together, and the latter slotted at c^3, with the bolt H and the spring E secured upon the pivotal bolt F, substantially as described. 11th. The combination of the flanged plate A of size and shape to fit the space inside a horse shoe, with plate C slotted at c^3, rivet or bolt F, the headed bolt H, and the spring E, substantially as described. 12th. In combination with the plates A and C, constructed as described, and pivoted and secured together as set forth, with the felt I, as and for the purpose set forth.

No. 32,521. Carriage Wrench. *(Clé de voiture.)*

Patrick Kyle, Merrickville, Ont., 15th October, 1889; 5 years.

Claim.—The combination, of the spring B, with the space D, of a carriage wrench A, substantially as hereinbefore shown and described, and as and for the purposes set forth.

No. 32,522. Electro-Deposition of Metals and apparatus used therein.

(Electro-déposition des métaux et appareil pour cet objet)

Alexander S. Elmore, Cockermouth, Eng., 15th October, 1889; 5 years.

Claim.—1st. In the process of manufacturing metal tubes, rings, pans, cylinders, and other metal wares, by electro-deposition, the treatment of the said article to a rolling, or rolling and burnishing, or hammering, or hammering and burnishing action, simultaneously with the process of electro-deposition, substantially as hereinbefore described. 2nd. In the manufacture of metal tubes, rings, pans, cylinders, and other metal wares, by electro-deposition, the use of cylindrical rollers constructed of glass or agate, for the purpose of rolling, or rolling and burnishing. 3rd. The use of a break, in combination with a roller, substantially as and for the purposes described and shown with reference to Fig. 2*a*. 4th. In the electro-deposition of metals, the use of a roller having a surface speed different to that of the metal acted upon, substantially as and for the purposes mentioned. 5th. In apparatus designed for subjecting metallic articles, during the process of formation by electric deposition, to a burnishing action, the use of burnishing tools having comparatively narrow rubbing surfaces. 6th. In apparatus for the manufacture of metal tubes, rings, pans, cylinders, and other metal wares, by electro-deposition, constructing the parts of the spindles of the cores or mandrels, which are exposed to the electrolyte, of wood or similar insulating substance, and constructing bearings which are exposed to the electrolyte of glass or similar insulating substance. 7th. In the manufacture of cast iron cores, moulds and mandrels to be used for the electro-deposition of tubes, rings, pans, cylinders, and other metal wares, coating the same with a deposit of tin or other suitable metal, and subsequently coating the tin or other metal with a covering of lead, substantially as described. 8th. In the manufacture of cast iron cores, moulds and mandrels to be used for the electro-deposition of tubes, rings, cylinders, and other metal wares, the process of malleableizing the surfaces of the said articles, and subsequently coating the same with lead, substantially as and for the purposes hereinbefore described.

No. 32,523. Construction of Boot and Shoe Heels. *(Fabrication des talons de chaussures.)*

George E. Salter, Montreal, Que., 15th October, 1889; 5 years.

Claim.—1st. A boot or shoe provided with a rotary or adjustable heel composed of a rigid and a rotary portion, and a rivet or spindle having its head embedded in the rigid portion and projecting from same into the rotary portion, and means in the rotary portion confining the same on the rivet, substantially as described. 2nd. A boot or shoe heel composed of an upper rigid and lower rotary portion, the rivet having its head embedded in the rigid portion, and its leg extending into the rotary portion, and a washer or nut embedded in the rotary portion and through which the leg extends, and on the outer side of which the end of the leg is upset, substantially as and for the purpose hereinbefore set forth.

No. 32,524. Production of White Lead or Carbonate of Lead. *(Production du blanc ou carbonate de plomb.)*

Ralph W. E. MacIvor, London, Eng., 15th October, 1889; 5 years.

Claim.—1st. The process for the manufacture of white lead, consisting in the treatment of non-oxide of lead with acetate of ammonia, whereby hydrate of lead is formed and the conversion of this into basic carbonate of lead by the subsequent injection of carbonic acid, substantially as herein described. 2nd. The process for the manufacture of white lead, consisting in submitting non-oxide of lead to agitation, with a solution of acetate of ammonia in a closed vessel, and afterwards, when the non-oxide has been converted into hydrate, passing streams of carbonic acid gas through the contents of the vessel.

No. 32,525. Road Cart. *(Désobligeante.)*

George W. Brabb and Loring M. Smith, Romeo, Mich., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a road cart, the combination, with the shafts, and a semi-elliptic spring located beneath the axle and supporting the crate or body, of loops located on the ends of said spring, and one or more hooks located on the rear end of each shaft and adapted to engage said loops, the construction being such that the spring and consequently the crate or body may be adjusted to a higher or lower level as desired, substantially as described. 2nd. In a road cart, the combination, with the shafts, a semi-elliptic spring located beneath the axle, and uprights engaged to said spring and supporting the crate or body, of a loop engaged to the ends of said spring and embracing the axle, and a series of hooks located at the rear ends of the

shafts and adapted for engagement with the loops substantially as described. 3rd. In a road cart, the combination, with the shafts, of the plate K attached to the inner face of the shaft and provided with hooks k, said plate passed beneath the ends of the shafts k^1 and up along the opposite sides at k^2, substantially as described. 4th. In a road cart, the combination, with the shafts and the crate or body, of springs fastened to the under side of the shafts, said springs at their heels constituting the forward shaft, irons for stiffening and strengthening the shafts, and at their forward ends secured to and supporting the forward end of the crate or body, substantially as described. 5th. In a road cart, the combination, with the shafts, and the crate or body, of springs located beneath the shafts and fastened thereto, said springs at their forward ends engaged with, and supporting the forward end of the crate or body, and at their rear ends constituting the forward shaft irons, and with their extreme ends passed through the brace rods and constituting a part of the clips, by which the shafts are engaged with the axle.

No. 32,526. Galloping Rocking Horse.

(*Cheval à buscule galopant.*)

George W. Wade, Cadillac, Mich., U.S., 15th October, 1889; 5 years.

Claim.—1st. The attachment to rocking horses, of one or more rods or braces C loosely bolted or pinned to the horse at the upper end, substantially as and for the purpose specified. 2nd. The short movable rocker g attached to the horse by means of one or more rods or braces, as and for the purposes specified. 3rd. A rocking horse provided with one or more extra swinging rockers attached by means of rods or braces, as and for the purposes specified. 4th. The swinging rods or braces C, in combination with the rockers e attached to rocking horse, substantially as described.

No. 32,527. Combined Latch and Lock.

(*Loquet-serrure.*)

Charles Sandford, William Feeney and Arthur Coe, Madoc, Ont., 16th October, 1889; 5 years.

Claim.—1st. In a combined latch and lock, the combination of a casing having studs C and C^1, a latch bolt having a latch head, an eye b^1 by which it is pivoted excentrically on the stud C, an elongated slot b^{111} engaging the stud C^1, and means for engagement by the latch lever, and a latch lever engaging said latch, substantially as set forth. 2nd. In a combined latch and lock, the combination of a casing having studs C and C^1, a latch bolt having a latch head, an eye b^1 by which it is pivoted excentrically on the stud C, an elongated slot b^{111} engaging the stud C^1, a face b^5 for the night latch, and means for engagement by the latch lever, a latch lever engaging said latch, and a night latch F, substantially as set forth. 3rd. In a combined latch and lock, the combination of a casing having studs C and C^1, a latch bolt having a latch head, an eye b^1 by which it is pivoted excentrically, the stud C, an elongated slot b^{111} engaging the stud C^1, means for engagement by the latch lever, square ended elongated slot 5^{1111}, having a square notch b^6 and a square ended shoulders, a latch lever adapted to engage the latch bolt, and tumblers E having square projections e^1 adapted to engage the slot b^{1111}, and notch b^6, substantially as set forth. 4th. In a combined latch and lock, the combination of the casing A, a having studs C, C^1, a latch bolt B having latch head b, eye b^1, lug b^{11}, slot b^{111}, slot b^{1111}, notch b^5, recess b^6, and facing b^7, latch lever D, having facing d pivoted in the casing and engaging a spindle, its free end engaging the lug b^{11}, spindle S engaging the eye in said lever, night latch F engaging the facing b^7, tumblers E having projections a engaging the slot b^{1111}, and notch b^5, and the key K, substantially as set forth. 5th. In a combined latch and lock, the combination of the casing A^1, a^1 having studs C, C^1, latch bolt B^1 having latch head b, eye b^1, slot b^{111} engaging stud C^1, having means for engagement by a latch lever, night latch F^1, and plate f^1, substantially as set forth.

No. 32,528. Insulator for Electric Batteries.

(*Isoloir pour piles électriques.*)

The United Electric Improvement Company, Gloucester, N.J. (assignee of Stanley C. C. Currie, Philadelphia, Penn.), U.S., 16th October, 1889; 15 years.

Claim.—1st. A perforated corrugated insulating plate or diaphragm, permitting of the free passage of the current, as well as the free circulation of the liquid and gases in or through the perforations, and around or along the grooves or recesses of the corrugations thereof, substantially as and for the purposes set forth. 2nd. A perforated corrugated insulating plate or diaphragm, having the lines of corrugation lying in a vertical plane, substantially as and for the purposes set forth. 3rd. A perforated insulating plate or diaphragm formed with corrugations, substantially as and for the purposes set forth.

No. 32,529. Steam Engine. (*Machine à vapeur.*)

George Dalton (assignee of John H. Dales), Leeds, Eng., 16th October 1889; 5 years.

Claim.—1st. In combination with centrifugal steam engine governors, the application and use of anti-friction balls or rollers to the joints and bearings, for the purpose of increasing their sensitiveness. 2nd. In the construction of centrifugal steam engine governors, the application and use of ball or roller bearings to the joints, and the combination therewith of the power and cataract cylinders, substantially as and for the purposes hereinbefore described and illustrated by the drawings. 3rd. The construction of centrifugal steam engine governors, of the right angular lever arm, spring load type fitted with ball or roller bearings, in combination with the power and cataract cylinders and other apparatus, substantially as and for the purpose hereinbefore described and illustrated by the drawings. 4th. In combination with centrifugal steam engine governors, the application and use of the special arrangement of the power cylinder and cataract cylinder, substantially as hereinbefore described and illustrated by the drawings. 5th. The general construction, combination and arrangement of the several and respective part together, constituting my improvements in steam engines, substantially as hereinbefore described and illustrated by the drawings.

No. 32,530. Railway Switch.

(*Aiguille de chemin de fer.*)

Walter N. Knight, Boardman, and William H. Smith, Evinston, Fla., U.S., 16th October, 1889; 5 years.

Claim.—The improvement in railway switches herein described, consisting of the main line having section B^1, the side track having section h, provided with portion h^2 and shoulder h^3, the intermediate rail I, having section I^1 and extension i, the bar or beam J, the main shaft having crank-like portions, and the rods for connecting such portions with the sections to be operated, substantially as set forth.

No. 32,531. Ditching Plough.

(*Charrue à fossoyer-*)

Russell H. Nogar, Dundee, Mich., U.S., 18th October, 1889; 5 years.

Claim.—1st. The combination, with the ditching plough, of a carrier mounted on a truck at the rear of the plough, and having a hinged connection at its forward end with the scoop or plough, and the adjustable draft connection with the rear end of the plough beam, said connection being pivoted at one end to the plough beam, substantially as described. 2nd. In a ditching machine, the combination, with the ditching plough, of the carrier mounted on the truck at the rear of the plough, and having pivotal connections at its forward end therewith, and the adjustable draft connection between the rear end of the plough and said truck, said draft connection being pivoted at one end to the plough beam and under the control of the operator, substantially as described. 3rd. In a ditching machine, the combination, with the ditching plough, of a carrier pivotally secured at its forward end to the scoop or plough, and mounted with its rear end upon the truck, and a draft connection between said truck and the rear end of the plough in the line of draft, consisting of the foot lever t and the draft connection u, substantially as described. 4th. In a ditching machine, the combination of the following elements, the ground wheel mounted on a vertical standard, the draft devices applied thereto, the plough beam, provided at its forward end with the vertical bearing engaging with the standard of the ground wheel, the scoop or plough secured to the rear end of the plough beam, the raising and lowering device mounted upon the plough beam, the carrier pivotally secured at its forward end to the plough and mounted at its rear end upon the truck, and the adjustable connection between the rear end of the plough and the truck, said connection consisting of the foot lever t and the draft connection u, substantially as described, 5th. The combination, with the plough of a ditching machine, of the endless carrier pivotally secured at its forward end to the rear end of the plough and mounted at its rear end upon a truck, a carrier pulley mounted upon the truck and to which motion is applied, and a friction pulley mounted below such carrier pulley and pressing the belt against the face of the carrier pulley, substantially as described. 6th. The combination, with the plough of a ditching machine, of a carrier, consisting of the endless belt M, secured at its forward end to the plough, and mounted at its rear end upon a truck, the belt pulley O mounted in suitable hearings upon the frame of the truck, the adjustable friction pulley S mounted in contact with the belt pulley, the shaft V of the belt pulley, and the grooved drive pulley W, substantially as described. 7th. The combination, with the ditching plough, the carrier mounted in the rear thereof and supported upon the truck, the drive shaft V, of the carrier, the grooved pulley W upon said drive shaft and the wire rope Y, the parts being arranged to operate substantially as and for the purpose described. 8th. In a ditching machine, the combination of the following elements: the ground wheel D, the vertical standard E carrying such ground wheel, the draft bar H, the draft connection adjustably secured to the draft bar, the plough beam provided at the forward end with the bearing I, into which the standard E engages, the raising and lowering lever J pivotally mounted on top of the plough beam, and engaging by its forward end with the standard E, the adjusting devices of the lever, the scoop C mounted on the standard B, the endless carrier M, the roller N mounted in the scoop of the plough, the truck upon which the rear end of the carrier is mounted, the carrier pulley O, over which the rear end of the carrier belt passes, the friction pulleys S, the drive pulley W and the seat R mounted on the rear truck in proximity to the rear end of the plough, substantially as described. 9th. In a ditching machine, the plough, consisting of the plough beam, the standard secured thereto, and the scoop secured to the lower end of the standard, and having the digging portions a, b, and c, substantially as described. 10th. In a ditching machine, the combination of the ditching plough, the carrier pivotally secured to the rear end of the ditching scoop and mounted with its rear end upon the truck, a flexible draft connection between the plough and the truck, the loop w secured to the plough beam, the lever z and the hanger y, substantially as and for the purpose described.

No. 32,532. Manufacture of Metallic Sulphates in Solution. (*Production des sulphates métalliques en solution.*)

Lucius O'Brien, Sydney, N.S.W., 18th October, 1889; 5 years.

Claim.—1st. The use of sulphurous acid under pressure for the purpose of forming metallic sulphates in solution. 2nd. The use of sulphurous acid under pressure, in combination with nitrous oxide, oxogen and other substances yielding oxygen, for the purpose of forming metallic sulphates in solution.

No. 32,533. Extension Strip for Window Shade Rollers. (*Bande de rallonge pour les bâtons des stores de fenêtres.*)

Abram B. Dunkle, Steelton, Penn., U.S., 18th October, 1889; 5 years.

Claim—1st. In an extension strip for window shade rollers, the wooden sections B^1, B, having inclined grooves or channels along their upper and lower edges, and the metallic extension or face plate D, secured rigidly to one section and having inclined flanges at its upper and lower edges, working in the inclined grooves of the other section, said extension or face plate spanning the space between the adjoining separated ends of the two sections, so as to cover this space and make the strip have all the appearance of an ordinary one. 2nd. In an extension strip for window shade rollers, the wooden strip divided into sections B, B^1, carrying the roller brackets at the ends, and the metallic extension or face plate D rigidly affixed to one section, and having flanges along its upper and lower edges to engage the upper and lower edges of the other section, and said extension or face plate being arranged along the front face of the strip and spanning the space, separating the adjoining ends of the sections, whereby this space is concealed and the strip is given the appearance of an ordinary one, as set forth. 3rd. In an extension strip for window shade rollers, the wooden strip divided into sections B, B^1, carrying the roller bracket at the ends, and the metallic extension or face plate D, rigidly affixed to one section and having flanges along its upper and lower edges to engage the upper and lower edges of the other section, and said extension or face plate being arranged along the front face of the strip, and spanning the space separating the adjoining ends of the sections, whereby this space is concealed and the strip is given the appearance of an ordinary one, and the clamp *a*, or locking device arranged on the section, over which the extension plate slides, so as to clamp the free end of the said plate, as set forth. 4th. The combination, in a shade roller strip, of the grooved or channeled section B^1, the section B having an extension or face plate provided with flanges engaging in the grooves of the section B^1, and the catch or clamp c engaging the upper edges of the section and the extension or face plate mounted thereon, whereby they are locked together, substantially as and for the purpose specified. 5th. A sheet metal attachment to the bracket bar A, comprising the holder F, formed of a single piece of sheet metal secured rigidly to said bar and adapted to receive the roller bracket, said holder having the tongue f^2 struck up from the body of the holder, and the integral flange f^5 bent outward from the side of the holder adjacent to the free end of the tongue, but separated therefrom sufficiently to allow the reception of the roller bracket as set forth. 6th. A sheet metal attachment to the bracket bar A, comprising the holder F, formed of a single piece of sheet metal secured rigidly to said bar and adapted to receive the roller bracket, said roller having the tongue f^2 struck up from the body of the holder, and the integral flange f^5 bent outward from the side of the holder adjacent to the free end of the tongue, but separated therefrom sufficiently to allow the reception of the roller bracket, and the integral stud or stop f^6 bent outward from the body of the holder for the roller bracket to rest upon, as set forth. 7th. The herein described roller bracket holder, comprising the plate *f*, the integral tongue f^2 struck from the interior of the plate, the integral points f^4 on the free edge of the opening from which the tongue is struck, the integral flange f^5 adjacent to the free edge of the tongue, the stud or stop at the lower end of the said flange, and the ears f^1 adapted to be secured to the upper and lower edges of a bracket bar respectively, substantially as and for the purpose specified.

No 32,534. Frame for Railway Cars.

(*Caisse de char de chemin de fer.*)

Max A. Zurcher, Montreal, Que., 18th October, 1889; 5 years.

Claim—1st. A railway car frame, in which each exterior longitudinal face is constructed of a statically formed truss, with skeleton members, and one chord for each pair of adjacent trusses in common, the whole forming a complete skeleton tube, substantially as described. 2nd. A railway car frame, consisting of a hollow statically constructed skeleton prism or body, having a number of panel points in each of the faces of the longitudinal sides of the frame, which panel points intersect or coincide at the junction of the sides of the frame with the longitudinal chords thereof, substantially as described. 3rd. A railway car frame, consisting of an exterior longitudinal frame work, having interior transverse vibration trusses, substantially as described. 4th. A railway car frame, consisting externally of a skeleton prism or body, with one or more interior longitudinal trusses connected with the exterior frame work, substantially as described. 5th. A railway car frame, having a body in the form of a skeleton prism or body, with one or more interior longitudinal trusses connected with the external frame work, and one or more interior transverse vibration trusses connected also to the frame work, substantially as described. 6th. A railway car frame, having externally a skeleton prism or body, with one or more vertical transverse statically constructed overhead roof trusses, having web members throughout its entire length, substantially as described. 7th. A railway car frame, having externally a body in the form of a skeleton prism, with one or more interior transverse vibration trusses, and one or more vertical transverse statically constructed overhead roof trusses, having web members throughout its entire length, all connected together substantially as described. 8th. A railway car frame having externally a body in the form of a skeleton prism, with one or more interior longitudinal trusses and one or more transverse statically constructed overhead roof trusses, having web members throughout its entire length, and suitable connections for rigidly connecting the same together, substantially as described. 9th. A railway car frame externally in the form of a skeleton prism or body, with one or more interior longitudinal trusses, and one or more vertical transverse statically constructed overhead trusses, having web members throughout its entire length, and one or more interior transverse vibration trusses, all connected together substantially as described. 10th. A railway car frame, having an upper and lower deck frame projecting beyond the ends of the body of the main frame, connected by columns or girders at their extreme ends, substantially as described. 11th. A railway car frame, having an upper and lower deck frame projecting beyond the ends of the body of said frame, connected by columns and girders at their extreme ends extending above said upper and below said lower decks, substantially as described. 12th. A railway car frame, having a truss body with an upper and lower deck frame projecting beyond the ends of the body, connected by columns or girders at the ends thereof, and having columns or girders *m* built into the end wall of the body with projecting ends of members *k*, substantially as described. 13th. A railway car frame in the form of a prism or body, having trussed side, top and bottom faces, in combination with one or more longitudinal interior trusses, substantially as described. 14th. A railway car frame, having trussed side, top and bottom faces, in combination with one or more lateral interior trusses connecting the sides, top and bottom, substantially as described. 15th. A railway car frame, having trussed side, top and bottom faces, in combination with one or more longitudinal interior trusses, and one or more lateral interior trusses, all connected together substantially as described. 16th. A railway car frame, consisting of a trussed body, in combination with projecting trussed platforms, substantially as described. 17th. A railway car frame, consisting of a trussed body, in combination with trussed platforms and trussed projecting roof portions, connected respectively to the body of said frame, substantially as described. 18th. A railway car frame, consisting of trussed longitudinal side, top and bottom faces, in combination with a trussed roof-supporting frame, substantially as described. 19th. A railway car frame, having four or more longitudinal external members, with diagonal and vertical members connecting the sides of said frame to said longitudinal members, and diagonal and horizontal members connecting the top and bottom of such frame to said longitudinal members, substantially as described. 20th. A railway car frame, having vertical and diagonal braces in its side faces, in combination with diagonal and horizontal braces in its top and bottom faces, and knee braces between the sides and top and bottom faces, substantially as described.

No. 32,535. Heating Schools, Churches and Halls from Ordinary Stoves or Furnaces. (*Chauffage des écoles, églises et salles au moyen de poêles ou calorifères ordinaires.*)

Joseph Millard, Newmarket, Ont., 18th October, 1889; 5 years.

Claim.—1st. The position of the piping from either a stove or furnace running along the angle made by the floor and wall of the hall or building under the seats and benches. 2nd. The casing which surrounds the piping fastened to the wall in such a position that the cold air from the floor passes into the aperture in the casing and circulates about the piping. 3rd. The hot air chamber covering the elbows of the pipe with the aperture at the bottom into which the cold air enters and circulates about the elbows, and then passes into the room through the register at the top of the chamber.

No. 32,536. Shaft Attachment for Vehicles.

(*Armon de limonière.*)

Robert Sproul, Pittsburgh, Penn., U.S., 18th October, 1889; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination, with the body of the vehicle, of standards or irons secured to the bottom of the same and rising in front thereof, and shafts hinged or pivoted to said standards, substantially as described. 2nd. In shaft attachments for two-wheeled vehicles, the combination, with standards secured to said vehicle and rising in front of the same, of shafts hinged or pivoted to said standards, and spring-braces connecting the shafts to the body of the vehicle, substantially as described. 3rd. In a two-wheeled vehicle, the combination, with the hinged or pivoted shafts, of yielding shaft sustaining braces consisting of rods attached to the shafts forward of the shaft pivots, and springs encircling said rods and located above and below bearing plates fastened to the body of the vehicle. 4th. In a two-wheeled vehicle, the combination, with standards to which the shafts are pivoted, of spring shaft supporting braces consisting of rods and spiral springs connecting the shafts to a portion of the vehicle above the shafts, substantially as described. 5th. In a two-wheeled vehicle, the combination, with the hinged shafts and brace-rods, and encircling springs, of spring adjusting nuts attached to said rods, substantially as described. 6th. In a two-wheeled vehicle, the combination, with the hinged shafts and the brace-rods, of the springs encircling the latter and located respectively above and below bearing plates attached to said shafts, substantially as described. 7th. In shaft attachment for two-wheeled vehicles, the combination, with the hinged shafts, of spring braces fastened above said shafts and connected thereto by spring connections, substantially as described. 8th. In a two-wheeled vehicle, the combination, with hinged shafts having brace-rods attached thereto, of flat or plate springs secured to the bottom of the vehicle near the front, and having the brace-rods connected thereto. 9th. In a two-wheeled vehicle, the combination, with the hinged shafts and the yielding spring braces, of supplementary yielding braces, substantially as described.

No. 32,537. Harvester-Binder.

(*Moissonneuse-lieuse.*)

Frederick D. Mercer and John S. Mercer, Dereham, Ont., 18th October, 1889; 5 years.

Claim.—1st. A grain-table conveyor consisting of a series of rake-heads located below the grain-table deck, and provided with rake-teeth projecting through slots or openings made in the grain deck, the said rake-heads being carried in suitable guides and connected together, and driven by endless chains carried on sprocket wheels located below the grain-table deck in such positions that the grain-table rake-teeth, which the chains propel, shall convey the grain to a point within the travel of the elevating-rake teeth, in combination

with elevating rake-teeth designed to carry all the grain so conveyed and elevate it to the binding table, substantially as and for the purpose specified. 2nd. The rake-heads F, connected together by the endless travelling chain C, and supported by the ledges *e*, in combination with a grain-table deck composed of a series of strips A separated by the slots *d*, through which the rake-teeth *b* on the rake-head F project, substantially as and for the purpose specified. 3rd. A grain-table composed of a series of strips A suitably secured, as described, so that the slot *d* shall be left between each, in combination with the rake-heads F, connected together and driven by the endless chain C, and supported by the ledges *e* and strips *f*, arranged substantially as and for the purpose specified. 4th. A rake-head H having a pivot-pin *g* attached to, or formed on its end, and a crank-arm J projecting in front of said pivot-pin, in combination with a groove *h* arranged to receive the pivot-pin *g*, and a travelling endless chain K connected to the crank-arm J, substantially as and for the purpose specified. 5th. A rake-head H, having a pivot-pin *g* attached to, or formed on its end, a crank-arm J projecting in front of the said pivot-pin, and a heel *k* projecting behind the said pivot-pin or roller, in combination with a groove *h* arranged to receive the pivot-pin *g*, and a travelling endless chain K connected to the crank-arm J, substantially as and for the purpose specified. 6th. A rake-head H having a pivot-pin *g* attached to, or formed on its end, a crank-arm J projecting in front of the said pivot-pin, and a heel *k* projecting behind the said pivot-pin or roller, in combination with a groove *h* arranged to receive the pivot-pin *g*, and having a ledge *m* formed on its edge, and a travelling endless chain K connected to the crank-arm J, substantially as and for the purpose specified. 7th. The rake-head F having cross-pieces or riders P attached to it near its end, in combination with the ledge *e*, substantially as and for the purpose specified. 8th. A series of deck-strips A having their edges bent upwardly, said strips being arranged, as described, with slots or partings *e* between each pair of strips, substantially as and for the purpose specified. 9th, The combination, with the travelling rake-heads, of the strips *f* secured to the bottom of the grain-table, substantially as and for the purpose specified.

No. 32,538. Corset. (*Corset.*)

Alva H. Traver, Jackson, Mich., U.S., 18th October, 1889; 5 years.

Claim.—1st. In a corset waist, back pieces provided with vertical bones p^1,p^{11}, extending the full length of the back pieces, short bones p^3, diagonal bones p^4 and the adjustable shoulder strap A^1, substantially as described. 2nd. A corset waist composed of the back pieces A, having the bones p^1, p^{11}, p^3, p^4, the shoulder strap A^1, the arm pieces B, the intermediate front pieces C, C^1, C^{11}, of the front pieces D, the breast pieces E, and the neck pieces F having the extensions G, substantially as described. 3rd. In a corset waist, the full breast pieces E independently formed and secured to the back and front pieces of the corset and having the pockets or openings, substantially as described.

No. 32,539. Machinery for Manufacturing Clips on Horse Shoes. (*Machinerie pour fabriquer les pinces des fers à cheval.*)

Anders Anderson, Copenhagen, Denmark, 18th October, 1889; 5 years.

Claim.—1st. In clip making machines, the pressing roller *a* which rests a movable slide *b*, and the adujstable jaws *d* and *f*. 2nd. In clip making machines, the placing of the roller *a* in a fork A^2, rotate on the bolt A^3, as shown Fig. 2 and 3. 3rd. In clip making machines, two or more rollers b^2, b^4, or firm plates, either together or separately, as shown in Fig. 2-7. 4th. In clip making machines, the stationary friction plates c^1, as shown in Fig. 4 and 5. 5th. In clip making machines, the placing of the friction rollers b^2, b^4, on excentric axis b^5, for the purposes specified. 6th. In clip making machines, the combination of the rotary disc *d*, with cuts *q* in the circumference, and the pressing roller *a* in an adjustable but fixed part *b* of the machine, as shown in Fig. 7. 7th. In clip making machines with rotary disc *d*, the arms *h*, as shown in Fig. 7, and for the purposes specified.

No. 32,540. Railway Car or Coach.

(*Char ou voiture de chemin de fer.*)

The Harris Palatial Car Company. Portland, Me., (assignee of Louie J. Harris, Boston, Mass.), U.S., 18th October, 1889; 5 years.

Claim.—1st. A railway passenger car or coach provided on each side with a series of berth-storage apartments beneath the floor, removable coverings to each of said apartments forming the floor of the car, a berth in each of said apartments independent of the cover thereof, and means for lowering the berth into, and raising it out of the storage apartment, substantially as set forth. 2nd. A railway passenger car or coach having that portion of its body between the tracks extended or carried down therebetween, and provided on each side with a series of berth-storage apartments or wells in said downwardly-extended portion and beneath the floor, removable coverings to each of said apartments forming the floor of the car, a berth in each of said apartments independent of the cover thereof, and means for lowering the berth into, and raising it out from the storage-apartment, substantially as set forth. 3rd. A railway passenger car or coach provided with berth-storage apartments beneath the floor, removable sections of the floor covering said apartments, constructed and arranged to be placed in vertical position between the berth-sections to form partitions therebetween, and berths in said apartments adapted to be raised out of, and lowered into said apartments, substantially as set forth. 4th. A railway passenger car or coach having that portion of its body between the trucks extended or carried down therebetween, berth-storage apartments formed in said downwardly-extended portion, removable sections of the floor covering said apartments, constructed and arranged to be placed in vertical position between the berth-sections to form partitions therebetween, and berths in said apartments adapted to be raised out of, and lowered into said apartments, substantially as set forth. 5th. A railway passenger car or coach provided with berth-storage apartments beneath the floor, berths in said apartments adapted to be lowered therein and raised out therefrom, and removable sections of the floor hinged at one end to the frame of the car, and adapted to be raised into vertical position, and secured to the stationary frame of the car to form partitions between the berth-sections, substantially as set forth. 6th. A railway passenger car or coach provided with berth-storage apartments beneath the floor, a berth stored in each of said apartments and adapted to be lowered into and raised out of said apartments and supported in position for occupancy, and gearing connected with the berth and engaging corresponding devices connected with the berth support for raising and lowering the same, substantially as set forth. 7th. A railway passenger car or coach provided along the side with a series of storage-apartments beneath the floor, and two removable sections of the floor covering each of said apartments, each hinged at one of its ends to the frame of the car and adapted to be raised into vertical position, and secured to the stationary frame to form partitions at intervals in the car, substantially as set forth. 8th. A railway passenger car or coach provided at the side with berth-storage apartments beneath the floor, partitions between said apartments, berths in said apartments, gearing connected with said apartments, a rack and guideway connected with said partitions, and means for operating said gearing to raise said berths out of, and lower them into said apartments, substantially as set forth. 9th. A railway passenger car or coach provided with berth-storage apartments beneath the floor, partitions between said apartments, two berths in each of said apartments, gearing connected with each of said berths, devices substantially as set forth, to connect said gearing to operate the same in unison, a rack and guideway connected with said partitions and means for operating said gearing to raise said berths out of, and lower them into said apartments, substantially as set forth. 10th. A railway passenger car or coach provided with berth-storage apartments beneath the floor, two removable sections of the floor covering each of said apartments, each hinged at one of its ends to the frame of the car, and adapted to be raised into vertical position and secured to the stationary frame, to form partitions at intervals in the car, berths in said apartments adapted to be raised out therefrom and supported in position between said partitions, and foot and head boards hinged to the frames of said berths and adapted to be folded down thereon or raised against said partitions, substantially as set forth. 11th. A railway passenger car or coach provided with sleeping-berths, foot and head boards hinged to the frames of said berths, and a curtain supporting rod removably connected with said foot and head boards, substantially as set forth. 12th. A railway passenger car or coach provided with a series of berth-storage apartments on each side of the car beneath the floor, and chambers M running longitudinally of the car between said berth-storage apartments, substantially as set forth. 13th. In a railway passenger car or coach, the combination, with a sleeping-berth, of a board secured to the forward part of the berth-frame, and a lock or latch for locking or latching said board or door to the frame of the car, whereby baggage, etc. may be locked beneath the berth, substantially as set forth. 14th. A railway passenger car or coach provided with a berth-storage apartment, co-extensive with a berth-section beneath the floor, a complete berth and its equipment substantially co-extensive with said apartment, removably arranged therein, means for lowering the berth into, and raising it out of the storage-apartment, and a section of the floor independent of said berth removably arranged over said apartment, substantially as set forth. 15th. A railway passenger car or coach provided with a berth-storage apartment, co-extensive with a berth-section beneath the floor, a movable berth with means for lowering the berth into, and raising it out from said apartment, and supporting it in position for occupancy, and a removable section of the floor independent of said berth constructed and arranged to cover said apartment when the berth is stored therein, and to be removed to permit the berth to be moved therefrom, substantially as set forth. 16th. A railway passenger car or coach having a body normally unobstructed with a berth or berth-supports above the floor, and provided with a berth-storage apartment co-extensive with a berth-section beneath the floor, movable upper and lower berths with means for lowering the berths into, and raising them out of the storage-apartment and supporting them in position of occupancy, and a removable section of the floor independent of said berths constructed and arranged to cover the apartment when the berths are stored therein and be removed to permit the berths to be raised out therefrom, substantially as set forth. 17th. A railway passenger car or coach provided with a berth-storage apartment or well beneath the floor, and a berth constructed and arranged to be stored in said apartment or well and to be raised out therefrom, as set forth. 18th. A railway passenger car or coach provided with berth-storage apartments or wells beneath the floor, berths adapted to be lowered into, and raised out of said apartments or wells, coverings for said apartments or weils, and chairs or settees adapted to be removably secured to said coverings, as set forth. 19th. The hinge for the coverings to the bath-storage apartments consisting of a fixed part and a removable part pivotally connected, as described, the movable part having the face adjacent to the fixed part concaved, all as set forth. 20th. A railway passenger car or coach having that portion of its body between the trucks extended or carried down therebetween, and provided with a framing, substantially as described, whereby, in case of accident, one truck may bd prevented from riding or coming in contact with the other, as et forth. 21st. A railway passenger car or coach provided with the usual framing on a line horizontlly above the truck, and supplemental sills and framing extending between the trucks below the usual framing, as set forth.

No. 32,541. Railroad Car.

(*Char de chemin de fer.*)

Wesley Klinker, Union Mills, Iowa, U. S., 18th October, 1889; 5 years.

Claim.—1st. The combination of the stationary portions of the roof of a car with the movable sections, springs for displacing the movable sections when they are left free to move, and an automatically operating detaching mechanism, by which the movable portions of

the roof are held in position upon the top of the car, substantially as shown. 2nd. The combination of the movable sections of the roof, fastening devices secured to the ends of the sections, spring-actuated projections for engaging with the fastening devices, and end-wise moving rods, which detach the projections from the fastening devices, substantially as described. 3rd. The combination of the movable sections of the roof of a car, springs for moving the sections, catches upon the ends of the movable sections, spring-actuated projections for engaging with the catches, endwise moving rods and the pivoted levers N connected to the ends of the rods, substantially as set forth. 4th. The combination of the movable sections of the roof of a car, fastening devices attached to their ends, spring-actuated projections to engage with the fastening devices, and endwise moving rods which detach the projections from the catches, substantially as specified. 5th. The combination of a movable section of a car roof, the fastening devices connected thereto, spring actuated projections for engaging with the catches, two endwise moving rods which move in opposite directions, and which have their curved ends to project beyond opposite sides of the car, for the purpose of detaching the spring-actuated projections from the catches, and pivoted levers connected to the ends of the rods, substantially as shown and described.

No. 32,542. Belting. (*Courroie.*)

James E. Emerson and Thomas Midgley, Beaver Falls, Penn., U. S., 19th October, 1889; 5 years.

Claim.—1st. As an improved article of manufacture, a belt, composed of elongated wire links, having the interstices between the links filled with rubber, and forming a compound or metallic and rubber surface, substantially as described. 2nd. As an improved article of manufacture, a belt, composed of elongated wire links, having the interstices between the links filled with rubber, and provided with metallic working edges, substantially as described. 3rd. As an improved article of manufacture, a belt, the surfaces of which are covered with canvas or rubber cloth, and provided with metallic working edges, substantially as described.

No. 32,543. Automatic Draft Regulator for Hot Water Boilers. (*Régulateur automatique du tirage pour chaudières de calorifères à eau.*)

William P. Powers, Lacrosse, Wis., U.S., 19th October, 1889; 5 years.

Claim.—1st. The combination of a main boiler, a pipe communicating therewith and extending above it for containing a column of water, by means of which the water in the boiler is held under greater than atmospheric pressure, a supplemental boiler or steam generator so located as to be heated by the water of the boiler, containing water under a pressure lower than that in the main boiler, a pressure chamber containing a diaphragm and communicating with the supplemental boiler, and a suitable heat controlling device, the body of water in the supplemental boiler being in such quantity that the increase in volume, when raised from the normal to the boiling point, will be less than the displacement of the diaphragm when raised to operate the heat controlling device. 2nd. As an attachment for water circulating systems, a supplemental boiler, a pressure chamber communicating therewith, containing a diaphragm, and a body of water in the supplemental boiler, the quantity of water being such that the increase in volume, when raised from its normal temperature to the boiling point will be less than the displacement of the diaphragm when raised to operate the heat controlling device.

No. 32,544. Curtain Fixture.

(*Ajustage des stores de fenêtres.*)

Fred H. Bassett, Saranac Lake, N. Y., U. S., 19th October, 1889; 5 years.

Claim.—1st. The combination of the guide bar, the carrier sliding thereon and having the shoulder S on its front side, the said carrier supporting the curtain roller, and the operating lever pivoted to the front side of the carrier and bearing on the said shoulder S, as set forth. 2nd. The combination of the guide-bar, the carrier sliding thereon and supporting the curtain roller, and provided on its front side with the perforated lugs N and the shoulder S, the hook J near the lower end of the guide bar, and the operating lever having its upper end pivoted between the lugs N and bearing on the shoulder S, and having its lower end engaging the hook J, as set forth. 3rd. The socket casting, consisting of the base plate C, having the spur D and perforation E, the socket arm G rising from the base plate and having the recess H in its end, and the hook J at the end of said arm, as set forth. 4th. In a curtain fixture, the combination of the guide bar I, the carrier for the curtain roller sliding thereon, the operating lever K connected to the carrier, and the socket casting to receive the lower end of the rod I, and provided with a hook J to engage with the lever K, as set forth.

No. 32,545. Connecting Device for Electric Circuits. (*Appareil de liaison des circuits électriques.*)

John C. Reilly, Brooklyn, N.Y., U.S., 19th October, 1889; 5 years.

Claim.—1st. A connecting device for multiplex circuits, consisting of a plate fitted with two groups of contacts forming the terminals of the respective circuits to be connected, in combination with a second plate removably attached thereto and similarly fitted with two groups of contacts registering with the contacts of the first plate, and having circuit connections between the contacts of one row and those of the other row. 2nd. A connecting device for multiplex circuits, consisting of two plates adapted to be adjustably clamped together, each of their adjacent faces being fitted with corresponding contacts in two groups, one plate having permanent terminals for the circuits to be connected, and the other plate having the required connections. 3rd. In a connecting device for multiplex circuits, a plate having two groups of contacts constituting the terminals of the circuits to be connected, both groups arranged in regular order, in combination with a circuit transposing plate, having two groups of registering contacts, and wires or strips constituting the connections for said circuits and arranged in irregular order in accordance with the scheme of transposition required, and means for bringing the corresponding contacts of the two plates together.

No. 32,546. Electrical Spark Producer.

(*Producteur d'étincelles électriques.*)

Henry K. Shanck, Cleveland, Ohio, U.S., 19th October, 1889; 5 years

Claim.—1st. The combination of an induction coil, having its secondary wires separated for the passage of a spark, with a tank containing a suitable fluid, the terminals of the primary wire extended into said fluid, a plate on the end of one of said primary wires, and mechanism for producing a rubbing contact between the said plate and the other terminal, substantially as and for the purpose specified. 2nd. The combination of an induction coil, having its secondary wires separated for the passage of a spark, with a tank containing a suitable liquid, the terminals of the primary were extended into said fluid, a plate connected with one terminal, a lever for supporting the other terminal, and mechanism, substantially as described, for moving said lever in the direction of its length and vibrating it about its fulcrum, substantially as set forth. 3rd. The combination of an induction coil, having its secondary wires separated for the passage of a spark, with the two reyden condensers, one located in the circuit of the primary wire of the coil, and the other in the circuit of the secondary wire for intensifying the spark, substantially as and for the purpose specified.

No. 32,547. Sulky Plough. (*Charrue à siège.*)

Cyrus Russ, Beamsville, Ont., 19th October, 1889; 5 years.

Claim.—1st. The land side A cut away, and the position of the wheel B journalled on axle C, between land side A and mould board R, that carries the plough without any friction, and the spring D of seat Q, being bolted on land side A, forms a fulcrum that takes all wrought off tongue when plough is up or down. 2nd. The box E attached to plough beam F, by means of bolts or clips E^1, and through which the axle C passes and working loosely on the axle C, allows the plough to adjust itself upon the gauge wheel I under the beam. 3rd. The lifting lever J and link J^1 attached to brace K by pivot J^2, and studded on plough beam F, for raising and lowering plough at will, the lever L with slots for adjustment passing through the spring plate L^1 to bracket L^2, on beam to which it is studded for swinging gauge wheel L^3 up or down to required position, bracket L^2, swings on pivot L^4, on plough beam F, P is the spring for keeping lever L in position. 3rd. The two braces K, firmly secured to axle G, and bolted on tongue M for proper working of plough, all substantially as shown and described and for the purpose set forth.

No. 32,548. Tubular Lantern.

(*Lanterne tubulaire.*)

Joseph B. Stetson, Lincoln, Me., U.S., 19th October, 1889; 5 years.

Claim.—1st. The combination, with the tubular lantern frame, provided with a depending tube and a movable globe frame, which can be raised and lowered on said tube, of a fixed stop formed on said tube, and a laterally movable ston attached to the globe frame, substantially as set forth. 2nd. The combination, with the tubular lantern frame, provided with a depending tube, and a movable globe frame, which can be raised and lowered on said tube, of a fixed stop formed on said tube, and a movable annular stop attached to the globe frame and provided with a space, which enables the movable stop to clear the fixed stop, substantially as set forth. 3rd. The combination, with the tubular lantern frame, provided with a depending tube, and a movable globe frame provided with a bell, which can be raised and lowered on said tube, of a fixed stop formed on said tube, a movable annular stop provided with a space to clear the fixed stop, and an eyelet secured in the opening of the bell and holding the annular stop, substantially as set forth. 4th. The combination, with the tubular lantern frame, provided with a depending tube, and the movable globe frame provided with a bell, which can be raised and lowered on said tube, of a fixed stop formed on said tube, a movable annular stop provided with a space to clear the fixed stop and with a projecting thumb piece, and a thumb piece which is secured to the bell and limits the turning movement of the annular stop, substantially as set forth.

No. 32,549. Remedy for Gastralgia, Enteritis, Flatulency, Cramps, etc.

(*Remède pour la gastralgie, l'entérite, les flatuosités, les crampes, etc.*)

Zéphirin Brabant, Montreal, Que., 19th October, 1889: 5 years.

Claim.—A medical compound, composed of water, catechu powder, tincture of capsici and spirits of camphor, in the proportions above specified.

No. 32,550. Looping and Tufting Attachment for Sewing Machines.

(*Appareil à brides de boutonnières et à touffes pour les machines à coudre.*)

Alice M. Perkins, LaCrosse, Wis. U.S., 19th October, 1889; 5 years.

Claim.—1st. In a looping attachment for a sewing machine, the combination, with the loop-holding arm arranged substantially in line with the sewing machine needle, of the loop-feeding arm arranged parallel with the said loop-holding arm, the looping-hook

arranged at a right angle to the said holding and feeding arms, and lever mechanism actuated by the needle-bar for reciprocating the said arms and hook, substantially as and for the purpose set forth. 2nd. In a looping attachment for a sewing machine, the combination, with the bifurcated loop-holding arm arranged in line with the sewing machine needle, of the loop-feeding arm arranged parallel with the said loop-holding arm, the looping-hook arranged at a right angle to the holding and feeding arms, a vibrating lever operated by the needle-bar for reciprocating the looping-hook, and the said holding and feeding arms, and intermediate lever mechanism interposed between the said lever and the loop-holding and feeding arms, whereby the said arms are reciprocated intermittently, substantially as and for the purpose set forth. 3rd. The combination, with the foundation-plate for attachment to the presser-bar of a sewing machine, and provided with the brackets B and I, of the vibrating lever provided with the vertical slot *c* and horizontal slots *d* and d^1, the looping-hook having a pin secured thereto engaging with the slot *c*, the loop-feeding arm arranged at a right angle to the said hook, and intermediate lever mechanism for intermittently reciprocating the loop-feeding arm and engaging with the said slot d^1, substantially as and for the purpose set forth. 4th. The combination, with the foundation-plate provided with brackets B and I, of the looping-hook, the vibrating lever pivoted to bracket B for reciprocating the hook, the sliding plate K, the loop-feeding and loop-holding arms, and the lugs secured to the said plate, the lever pivoted to bracket I and provided with a horizontal arm engaging with a slot in the aforesaid lever, and with a vertical arm engaging the said lugs, whereby an intermittent motion may be imparted to the loop-feeding and holding arms, substantially as and for the purpose set forth. 5th. In a looping attachment for a sewing machine, the combination, with the continuously-reciprocating looping-hook, of the intermittently-reciprocating loop-holding and feeding arms arranged parallel with each other and at a right angle to the hook, and the adjustable spring provided with a projection upon its under side and bearing upon the yarn in front of the loop-holding arm, substantially as and for the purpose set forth. 6th. The combination, with the foundation-plate provided with brackets B and I, of the lever pivoted to bracket B and provided with slots *c*, *d* and d_1, the sliding plate provided with a projection and the pin *f* engaging with slot *c*, the lips for retaining the plate, the looping-hook secured to the plate and guided in a groove in the foundation-plate, the loop-feeding arm arranged at a right angle to the looping-hook, and intermediate lever mechanism for intermittently reciprocating the loop-feeding arm and engaging with the said slot d^1, substantially as and for the purpose set forth. 7th. The combination, with the foundation-plate provided with brackets B and I, of the lever pivoted to bracket I and provided with the horizontal arm J, the plate K provided with lugs *k*, with which the said lever may engage intermittently, the loop-feeding and holding arms M and N secured to plate K, the plate *l* for keeping the feed-arm M in its guide groove, the looping-hook at right angles to the feed-arms, and the lever pivoted to bracket B and operatively connected to the looping-hook and to the said horizontal arm *j*, substantially as and for the purpose set forth.

No. 32,551. Grain Steamer. *(Etuve à grain.)*

Leoy Atkins, Trenton, Mo., U.S., 19th October, 1889; 5 years.

Claim.—In a grain steamer, a grain chamber open at both ends, a steam chamber under the grain chamber, and a horizontal foraminous partition between said chambers, in combination with a steam supply pipe and a pipe for conducting water of condensation from the steam chamber, both of said pipes being at one end of the steamer, and a baffle-plate in the plane of the foraminous partition and constructed to direct steam along the underside of said partition, substantially as described.

No. 32,552. Water Motor. *(Moteur hydraulique.)*

Hezekiah Brown, Brownsville, Kan., U.S., 19th October, 1889; 5 years.

Claim.—The wheel B consisting of a double casing H, H^1, the latter forming an inner air-tight cylinder with chambers I at the ends of the wheel, formed between the heads of the inner and outer casing, and the floats, said outer casing provided with slots *o*, the freely-moving rods P extending into said chambers and to which floats are secured, in combination with a frame to support the same, substantially as described.

No. 32,553. Mechanical Toy. *(Jouet mécanique.)*

John A. Goodwin, New York, N. Y., U. S., 19th October, 1889; 5 years.

Claim.—1st. In a mechanical toy, the combination of a plane surface with a representation of a partly fixed and partly movable animal or figure, the movable part being pivoted to the fixed part and controlled by a spring, a ball or missile and an upright partition or fence, an opening or openings, or recesses, provided in said partition or fence, or in the plane surface or board, the whole so arranged that, on pulling back the movable portion of the figure or animal and releasing the same, the spring will swing it forward and strike the ball or missile, if in the correct position into or through the said opening or openings or recesses. 2nd. In a mechanical toy, the combination of a plane surface having the representation of the fore part of an animal and pivoted thereto, the hind part of said animal, said hind part forming a striker, a spring for retaining the hind part in its elevated or projected position, and a fence attached to the plane surface and provided with an opening, all the parts being so arranged that, when the hind portion of the animal is withdrawn and then discharged, it will swing around and strike a ball or other missile that may be in its path.

No. 32,554. Brace or Bracket for Supporting Eave Troughs. *(Gâche de larmier.)*

Lewis J. Sawyer, Columbus, Wis., U. S., 19th October, 1889; 5 years.

Claim.—1st, An eave trough brace for spouting of the character described, consisting of an upright standard having a hook at one end and a base plate at the other, substantially as set forth. 2nd. An eave trough brace for spouting of the character described, consisting of a two-part upright standard having a bolt for adjustably securing them, substantially as described.

No. 32,555. Artificial Leg. *(Jambe artificielle.)*

William L. Snyder, Denver, Col., U.S., 19th October, 1889; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the upper leg-portion formed with a curved recess and face-plate, a shank secured thereto and carrying at its lower end a socket-ball, and the lower leg-portion formed with a curved socket-piece at the top, and fitting in the curved recess in the upper leg-portion, and also having a socket for the ball secured to the shank, and a recess in which the shank is free to move. 2nd. The combination, substantially as hereinbefore set forth, of the lower leg-portion formed with an opening in its lower end, the ankle-piece divided longitudinally and secured together and adjustably secured in the lower leg-portion, and the foot-piece having a ball-joint resting in a recess or socket in the lower end of the ankle-piece, said foot-piece being also provided with a curved recess into which the curved lower end of the ankle-piece extends. 3rd. The combination, substantially as hereinbefore set forth, of the lower leg-portion, the ankle-piece having a shank projecting into the lower leg-portion, the foot-piece having a curved recess into which the curved or rounded lower end of the ankle-portion projects, the shank I secured to the foot-piece, and the ball I_2 secured to the end of the shank and resting in a recess or socket in the ankle-piece, which is also provided with a recess I^4, for the purpose specified. 4th. The combination, substantially as hereinbefore set forth, of the lower leg-portion, the ankle-piece formed with a cylindrical hollow shank extending into the lower leg-portion, the metallic cylinder E arranged centrally within the shank and provided with perforations *e*, the metallic bands or straps secured around the lower leg-portion, and the screws extending through the lower leg-portion into the perforations in the shank and in the metallic cylinder carried thereby.

No. 32,556. Hot Water Boiler. *(Calorifère à eau.)*

James Keith, London, Eng., 19th October, 1889; 5 years.

Claim.—1st The combination of parts constituting the improved hot water boiler hereinbefore described, under two several modifications with reference to the annexed drawings. 2nd. A hot water boiler composed of two approximately semi-cylindrical hollow sections, and a central tubular section or heater constructed and connected substantially as described. 3rd. A hot water boiler composed of two approximately semi-cylindrical hollow sections, communicating with each other at top and bottom, and secured together substantially as described. 4th. In a hot water boiler, a bifurcated tubular water circulator and heater A_1 fitted in the combustion chamber and communicating at top and bottom with the main water space of the boiler, substantially as described. 5th. In a hot water boiler, the improved means hereinbefore described for securing in place a fire brick passed through the boiler shell. 6th. In a chimney flue or smoke pipe for water boiler and other fires or flues, a combined draught regulator, ventilator and cleaning door, constructed and arranged to operate substantially as described.

No. 32,557. Machine for Cutting Boards from Logs. *(Machine à débiter les billots au couteau.)*

Thomas S. Crane, East Orange, N. J., U. S., 19th October, 1889; 5 years.

Claim.—1st. In a wood slicing machine, the combination, with a knife carriage reciprocated to cut intermittingly, of a reciprocating steam piston rod attached directly to such carriage, a knife beam movable upon the carriage transverse to the piston rod, and mechanism movable with the carriage for reciprocating the knife beam, as and for the purpose set forth. 2nd. In a wood slicing machine, the combination, with a knife carriage reciprocated to cut intermittingly, of a reciprocating steam piston rod attached directly to such carriage, an adjustable presser rod sustained upon the carriage parallel with the edge of the knife, and mechanism movable with the carriage for reciprocating the knife beam, as and for the purpose set forth. 3rd. In a wood slicing machine, the combination, with a knife carriage reciprocated to cut intermittingly, of a reciprocating steam piston rod attached directly to such carriage, an adjustable presser roll sustained upon the carriage transversely to the path of the carriage, a knife and knife beam movable upon the carriage parallel with the presser roll, and mechanism movable with the carriage for reciprocating the knife beam, as and for the purpose set forth. 4th. In a wood slicing machine having a reciprocating knife carriage with the edge of the knife in a vertical position, the combination, with a presser roll upon the carriage sustained transversely to the path of the carriage, of a knife and knife beam movable vertically parallel with the presser roll, and a spring to counterbalance the weight of the knife beam, substantially as set forth. 5th. In a machine having a reciprocating knife carriage, the combination, with the carriage, of a knife and knife beam movable thereon, and a rotating shaft journaled in bearings upon the knife carriage, and provided with a crank and connections to the knife beam to reciprocate the latter, as and for the purpose set forth. 6th.

In a machine having a reciprocating knife carriage movable upon a frame having parallel ways, the combination, with the carriage, of a knife and knife beam movable thereon, a rotating shaft journaled in bearings upon the carriage, a crank upon the shaft and connections to the knife beam to reciprocate the same, and a wheel upon the shaft making a rolling contact with a stationary fixture upon the frame to rotate the crank, substantially as herein set forth. 7th. In a wood slicing machine, the combination, with the knife and an adjustable presser sustained adjacent to the same, of delivery rolls *a* and *b*, rotated upon the carriage for drawing the board from the grip of the knife and presser, and propelling it through the straightening devices, substantially as herein set forth. 8th. In a wood slicing machine having a reciprocating knife carriage, the combination, with the knife, of delivery rolls mounted upon the knife carriage for drawing the board from the knife, a discharge channel to direct the board from the carriage in a given path, and a movable plate upon the knife carriage adapted to throw the board from the carriage or into such discharge channel, as and for the purpose set forth. 9th. In a wood slicing machine having a reciprocating knife carriage, the combination, with the knife, of delivery rolls mounted upon the knife carriage for drawing the board from the knife, a discharge channel to direct the board from the carriage in a given path, and rolls upon the frame adjacent to the carriage at the end of its stroke to draw the board from such discharge channel by their rotation, substantially as herein set forth. 10th. In a wood slicing machine having a reciprocating knife carriage, the combination, with the knife, of delievry rolls mounted upon the knife carriage for drawing the board from the knife discharge mechanism, as the trough Q, to discharge the board from the carriage in a given path, and rolls upon the frame to take the board from such discharge mechanism, one or more of such rolls being segmental in form to clear the board in a given position, and rotated an even number of times for each stroke of the knife, substantially as herein set forth. 11th. In a wood slicing machine, the combination, with the knife and the stay log, of a feed screw, a locking cam rotated with the same and held in a fixed position during the cut of the knife, a bolt or latch for holding the same from rotating, and a dog operated to retract the bolt at each movement of the knife, substantially as herein set forth. 12th. In a wood slicing machine, the combination, with the knife and the stay log, of a feed screw, a feed spindle adjacent to the same, change wheels for connecting the screw and spindle, and a locking cam rotated with the same and held in a fixed position during the cut of the knife, and a spring bolt applied to the cam and actuated substantially as herein set forth. 13th. In a wood slicing machine, the combination, with the knife and stay log, of a feed screw, a locking cam rotated with the same, a bolt or latch for holding the same from rotating, a friction clutch having one part rotated continuously, another part connected by suitable gearing with the locking cam and operating to rotate the same when engaged, a clutch lever for engaging the friction clutch to drive the locking cam, and means, as the cam *k*1, for actuating the clutch lever once for each stroke of the knife, as and for the purpose set forth. 14th. In a wood slicing machine, the combination, with a reciprocating knife carriage, of a knife, an adjustable presser sustained adjacent to the same, delivery rolls mounted upon the carriage for drawing the board from the grip of the knife and presser, and a wheel upon the carriage connected with such rolls and making a rolling contact with a stationary fixture upon the frame to rotate such rolls, substantially as herein set forth. 15th. In a wood slicing machine, the combination, with a reciprocating knife carriage, of a knife, an adjustable presser sustained adjacent to the same delivery rolls upon the carriage, for drawing the board from the grip of the knife and presser, a wheel upon the carriage making a rolling contact with a stationary fixture upon the frame, and a pawl and ratchet connection from such wheel to the delivery rolls to actuate the same in one direction only, substantially as herein set forth. 16th. In a wood slicing machine, the combination, with a reciprocating knife carriage, of a knife, an adjustable presser sustained adjacent to the same, delivery rolls upon the carriage, for drawing the board from the grip of the knife and presser, a toothed wheel upon the carriage meshing with a stationary rack upon the frame, and a pawl and ratchet connection from such wheel to the delivery rolls to actuate the same in one direction only, substantially as herein set forth.

No. 32,558. Family Billiard Table.

(Table de billard domestique.)

William P. Flint, Marysville, Cal., U.S., 19th October, 1889; 5 years.

Claim.—The described article having an undivided billiard table face on one side, an undivided detachable furniture face on the opposite side, and an intermediate hollow body to contain the appurtenances of a billiard table, as set forth and for the purpose specified.

No. 32,559. Water Heater. (*Calorifère à eau.*)

Newell P. Andrus, Brooklyn, N.Y., U.S., 19th October, 1889; 5 years.

Claim.—1st. In a water-heater, the combination of a series of superposed chambers, each provided with a series of irregular water-passages formed by their internal walls, said passages having separate inlets and outlets arranged equidistant around the chambers and having their respective consecutive water connections arranged spirally, and heat flues R and S formed between the external walls of said chambers and passing vertically through them, substantially as and for the purpose set forth. 2nd. In a water-heater, the combination of a series of superposed chambers provided with irregular water passages formed by their internal walls and having their consecutive water connections arranged spirally, said chambers being separated by horizontal spaces *m*, and provided with grooves *i* in their under sides, and the heat passages R and S formed between the external walls of said chambers and passing vertically through them, substantially as and for the purpose set forth.

No. 32,560. Sunshade for Vehicles.

(Couverture de voiture.)

Letitia V. Luce, New Orleans, La., U.S., 21st October, 1889; 5 years.

Claim.—1st. A sunshade for vehicles comprising a bracket, a horizontally-swinging arm pivoted at one end to said bracket, a shade pivoted to the outer end of said arm capable of vertical movement, and a spring secured to the arm controlling the movement of the shade, substantially as shown and described. 2nd. A sunshade for vehicles comprising a bracket, a horizontally-swinging arm pivoted at one end to said bracket, a shade pivoted to the outer end of said arm capable of vertical movement, a spring secured to the arm controlling the movement of the shade, a hook or button attached to the under side of the arm, and a chain or its equivalent secured to the shade and adapted for contact with said hook or button, substantially as and for the purpose specified. 3rd. A sunshade for vehicles comprising the vertical angled bracket 10, the horizontal swinging telescoping bars 13 and 17, the set screw 24 binding the said bars together, the vertically and longitudinally swinging shade frame 21 having the angular lug pivoted to the front end of the bar 17, and a spring 23 located upon the top of the arm bearing upon the edges of said lug to hold the frame in its extended position, or folded against the lower side of the bar 17, substantially as set forth. 4th. A sunshade for vehicles consisting of the vertical angular bracket 10, having transverse clips 11 on its horizontal arm, horizontally-swinging telescopic bars 13 and 17, the latter being forked at its front end, a plate spring 23 extending over the said forked end, and a shade frame having a lug 19 on its rear bar, provided with angular edges and pivoted within the forked end of the bar 17, to swing vertically in the direction of the length thereof, the said spring bearing upon the edges of the said lug and holding the shade extended or folded against the bar 17, substantially as set forth.

No. 32,561. Apparatus for Loading Lumber on Carts and Waggons. (*Appareil pour charger le bois scié sur les charrettes et wagons.*)

Jean B. Nadeau, Etchemin, Qué., 21st October, 1889; 5 years.

Claim.—1st. A lumber loading device having the piers A, cross girt B, weighted levers C, and loose girt D, substantially as shown and for the purposes set forth. 2nd. A lumber loading device having the piers A, weighted levers C, loose girt D, and a jointed support composed of the weighted bell-crank F and link G, substantially as shown and described. 3rd. In a lumber loading devices, the shaft I journalled in the piers A, carrying the levers J, and arms K, the rods L pivoted to the arms K, and turning outward in front of the joint of the bell-crank F with the link G, substantially as herein shown and described.

No. 32,562. Straw Burning Stove.

(Poêle à paille.)

Thomas J. McBride, Winnipeg, Man., (assignee of Godfried Laube, Huron, D.T., U.S., 21st October, 1889; 5 years.

Claim.—1st. The combination, with a base heating stove body, as A, B, C, D, consisting of top and bottom sections, as A, D, connected by driving flues, as B, C, with a clear central space, of a removable fuel magazine, as F, occupying said central space and having an open top registering with an opening in said top section, substantially as described. 2nd. The combination, with a stove body, as A, B, C, D, of a removable top burning hay and straw magazine, as F, having an interior draught tube, as L, on its bottom, extending to the exterior of the magazine, substantially as described. 3rd. The combination, with a stove body, as A, B, C, D, having an opening, as *d*, in the under plate of its top section, of a removable fuel magazine, as F, having an open top, a fixed spiral guide, as K, adjacent to said opening in the stove body, and a collar or pipe section, as G, mounted on said spiral guide detachably connecting said magazine and stove body, substantially as described.

No. 32,563. Straw Burning Stove.

(Poêle à paille.)

Thomas J. McBride, Winnipeg, Man., (assignee of Godfried Laube, Huron, D.T., U.S.), 21st October, 1889; 5 years.

Claim.—1st. The combination, with a skeleton stove frame A B C, having a clear space between its top and bottom sections, of a removable horizontal straw and hay burning magazine, as E, resting upon said bottom section as a base of support and registering with said top section, substantially as described. 2nd. The combination, with a skeleton stove frame A B C, having an opening, as *b*, in the under plate of its top section, and a clear space between its top and bottom sections, of a removable fuel magazine for burning hay and straw, as E, resting on said bottom section, as *a*, seat having an opening, as *e*, in its top registering with said opening *b* in the under plate of said top section, and a guide, as *a*1, for directing said magazine truly to its registering position, substantially as described. 3rd. The combination, with a skeleton stove frame, as A B C, of a removable horizontal fuel magazine, as E, for burning hay and straw, and a telescoping pipe section, as K, detachably connecting the fuel magazine and the stove body, substantially as described.

No. 32,564. Straw Burning Cook Stove.

(Poêle de cuisine à paille.)

Thomas J. McBride, Winnipeg, Man., (assignee of Godfried Laube, Huron, D.T., U.S.), 21st October, 1889; 5 years.

Claim.—1st. The combination, with a cooking stove body, as A, provided with an opening, as K, leading to the pot flues, of a removable top burning hay and straw magazine, as L, having an opening,

as *l*, in its top, registering with said opening in the stove body, substantially as described. 2nd. The combination, with a cooking stove body provided with a forwardly extended top, as A K, of a removable fuel magazine, as L, having an open top registering with an opening in the said extension of the stove top, substantially as described. 3rd. The combination, with a cooking stove body provided with a forwardly extended top, as A K, and having an ordinary wood and coal fire pot, as C, and an interior or low oven, as B, of a removable hay and straw magazine, as L, having an opening, as *l*, registering with the opening in said extended top, substantially as described. 4th. The combination, with a cooking stove body provided with an opening leading to its pot flues, as A K, of a removable fuel magazine, as L, having an opening in its top, as *l*, registering with said opening in the stove body, and a vertically movable platform of false bottom, as N, mounted on the stove frame for supporting and detachably connecting said magazine to the stove body, substantially as described. 5th. The combination, with the cooking stove body A K, the removable fuel magazine L, *l*, the vertically movable supporting platform N, and the operating lever P, substantially as described. 6th. In a cooking stove, as A, having an oven, as B, the combination, with direct and indirect draft dampers, as T, T1, of an oven door, as B1, having cams, as *b*, *b*1, for operating said dampers, substantially as described.

No. 32,565. Grain Separator.

(*Séparateur des grains.*)

John A. Krake and Joseph Bork, Buffalo, N.Y., U.S., 21st October 1889; 5 years.

Claim.—1st. The combination, with the fan shaft d^1, and fan blades E, of the hub E^1 mounted on said shaft and provided with sockets e^1, and the outwardly diverging arms *e* secured with their inner ends in said sockets, and with their outer ends to the fan blades, substantially as set forth. 2nd. The combination, with the upper shaking shoe provided in its sides with notches h^1, of the feed board H secured to said shaking shoe, and a removable extension H^1, having pins *h* engaging in the notches h^1, and provided with a supporting bar h^2, overlapping the end of the feed board H, substantially as set forth. 3rd. The combination, with the shaking shoe B^1, provided in its sides with inclined notches h^1, and the feed board H provided with a deflector h^3, of the removable extension H^1, having pins *h* engaging in the notches h^1 and provided with a supporting bar h^2, overlapping the outer end of the feed board and forming a continuation of the deflector h^3, substantially as set forth. 4th. The combination, with the lower shoe C, provided at its upper end with a plate having a series of undercut notches n^1, and at its lower end with a series of notches m^2, of the lower screen m^1 provided at its lower end with supporting pins engaging in the notches m^2, and having an upper cross bar engaging with a cross piece m^4 secured to the frame of the shoe, and an upper screen *m* abutting with its lower end against the lower screen m^1, and provided at its upper end with supporting pins engaging in the undercut notches n^1, substantially as set forth. 5th. The combination, with the stationary frame and shaking shoe, of adjustable hangers J pivoted at one end to the shoe, and provided at their opposite ends with pins *j*, plates K having an opening or slot in which the upper portions of the hangers are arranged, and with a series of notches *k*, k^1, k^2, for receiving said pins, and plates L hinged to the plates K and bearing with their lower edges upon said pins, substantially as set forth. 6th. The combination, with the stationary frame, and a longitudinally vibrating shoe, of longitudinal toggle links connecting the shoe with the stationary frame, a transverse driving shaft having a crank disk, an upright rock shaft having two actuating arms arranged about at right angles to each other, a rod connecting one of said arms with said crank disk, and a rod connecting the other arm of the upright shaft with said toggle links at or near the joint thereof, substantially as set forth. 7th. In a grain separator, the combination, with the feed hopper having a discharge opening, of an oscillating agitating device arranged within the hopper above its discharge opening, and consisting of a horizontal bar, and two oscillating disks journalled in the walls of the machine, and and provided with grooves in which the horizontal agitator bar is removably seated, substantially as set forth. 8th. In a grain separator, the combination, with the shaking shoe having a notch or recess, of the feed hopper having a discharge opening, grooved disks *b* journalled in the hopper, the removable agitator bar B^2 seated in the grooves of said disks, and the actuating arm b^3 secured to one of said disks, and provided with a pivoted link or finger b^4 engaging with the recess of the shaking shoe, substantially as set forth.

No. 32,566. Hot Water Heating Apparatus.

(*Calorifère à eau.*)

The Boynton Furnace Company, (assignee of Nathaniel A. Boynton), New York, N.Y., U.S., 21st October, 1889; 5 years.

Claim.—1st. In a hot-water heating apparatus, a series of transversely-extending water-sections, each of which has vertical water-passages, and horizontal water-passages which connect with the vertical water-passages, and the walls of which are at one extremity indrawn or recessed at either side to form a portion of a vertical smoke passage, substantially as described. 2nd. In a hot-water heating apparatus, a series of transversely extending water-sections each of which has a water-passage, which is provided with a horizontal longitudinal bottom protuberance, which extends from side to side of the section and transversely-extending water-passages which have a plain flat top and bottom surface, each of such transverse passages having lateral walls, which at one extremity are recessed or indrawn to form on either side a half flue for the upward-passage of smoke, substantially as set forth. 3rd. In a hot-water heating apparatus, a series of transversely-extending water-sections, each of which has vertical water-passages at the sides of the apparatus, a top horizontal transverse water-passage which has a flat top surface, and a tapered or V-shaped bottom surface, a series of horizontal transversely-extending V-shaped water-passages which are flat at top and bottom, and which are curved at their sides, and a horizontal transversely-extending passage which is flattened at its top, and which has a longitudinal downwardly-extending protuberance or corrugation, which extends from end to end of such passage, substantially as shown and described.

No. 32,567. Street Railway. (*Chemin à ornière.*)

The Judson Pneumatic Street Railway Company (assignee of Whitcomb L. Judson), Minneapolis, Minn., U. S., 21st October, 1889; 5 years.

Claim.—1st. The combination, with a slotted under-ground conduit, of a car body above the street surface, a car-supporting truck within the conduit, movable lengthwise thereof, and a swiveled supporting connection from the truck to the car through the conduit slot, substantially as described. 2nd. The combination, with a slotted under-ground conduit, of one or more longitudinal truck guides within said conduit, a car body above the street surface, a car-supporting truck within the conduit movable lengthwise of said guides, and a swiveled supporting connection from the truck to the car, substantially as described. 3rd. The combination, with a slotted underground conduit, of a car body above the street surface, a truck within the conduit movable lengthwise thereof, a car-supporting bolster having a rigid connection with the truck through the conduit slot and ball bearings uniting the bolster and car body, substantially as described for the better traversing of curves. 4th. The combination, with a slotted under-ground conduit, of one or more longitudinal truck guides within the conduit, a car body above the street surface, a car supporting truck within the conduit movable lengthwise of said guides, a car-supporting bolster having a rigid connection with said truck through the conduit slot, and ball bearings uniting the bolster and car body, substantially as described. 5th. The combination, with a slotted underground conduit, of a car body above the street surface, two or more independent trucks within the conduit movable lengthwise thereof, corresponding independent supporting bolsters, each having a rigid connection through the conduit slot with its respective truck, and ball-bearings uniting the bolsters and the car body, substantially as described. 6th. The combination, with a slotted underground conduit, of a car body above the street surface, two or more independent car trucks within the conduit movable lengthwise thereof, two or more independent car-supporting bolsters corresponding in number to the number of trucks, each having a rigid connection through the conduit slot with its respective truck, ball-bearings uniting the bolsters and the car body, and pivoted couplings connecting the trucks, substantially as described. 7th. The combination, with a movable car, of a combined supporting and propelling drum, extending the entire line of the car's travel, adapted of itself to sustain the car and propel the same, substantially as described. 8th. The combination, with a movable car, of a combined car-supporting and propelling drum, and one or more lateral pressure rails or guides for limiting the oscillation of the car, substantially as described. 9th. The combination, with a revoluble car-supporting and driving drum, of a movable car, provided with friction wheels mounted on said drum and engageable therewith at an angle to its axis, and one or more lateral pressure rails or guides for limiting the oscillation of the car, substantially as described. 10th. The combination, with a revoluble car-supporting and driving drum, of a movable car having friction wheels adjustable to different angles mounted on said drum and engageable therewith by frictional contact, substantially as described. 11th. The combination, with a revoluble car, supporting and driving drum, of a movable car, provided with friction wheels adjustable to different angles mounted on said drum engageable therewith by frictional contact at variable angles, and one or more lateral pressure guides or rails for limiting the oscillation of the car, substantially as described. 12th. The combination, with a revoluble car-supporting and car-driving drum, of a movable car provided with friction wheels mounted on said drum, engageable therewith at an angle to its axis, one or more lateral pressure rails or guides for limiting the oscillation, and one or more lateral pressure rollers adapted to engage said guides, substantially as described. 13th. The combination, with a revoluble car-driving drum, made up of sections coupled together, of a movable car provided with friction wheels engageable with said drum at an angle to its axis, and coupling space bridges for carrying the friction wheels over the coupling spaces, substantially as described. 14th. The combination, with a revoluble car-driving drum, made up of sections coupled together, of a movable car, provided with a friction wheel truck, having friction wheels engageable with said drums at an angle to its axis, coupling space bridges and carrying or bridging rollers on the friction wheel truck for engaging said bridges and carrying the friction wheel truck over the coupling spaces, substantially as described. 15th. The combination, with a slotted underground conduit, of a revoluble car, supporting and propelling drum within said conduit, a car body above the street surface, a friction wheel truck provided with friction wheels mounted on said drum and engageable therewith at an angle to its axis, and a supporting connection from the truck to the car through the conduit slot, substantially as described. 16th. The combination, with a slotted underground conduit, of a revoluble car, supporting and propelling drum within the conduit, a car body above the street surface, a friction wheel truck having friction wheels mounted on said drum, engageable therewith at an angle to its axis, a supporting connection from the truck to the car through the conduit slot, one or more lateral pressure rails or guides within the conduit, and one or more lateral pressure rollers on the trucks or supporting connection for engaging with said rails or guides, substantially as described. 17th. The combination, with a slotted underground conduit, of a revoluble car, supporting and driving drum within the conduit, a car body above the street surface, a friction wheel truck having friction wheels mounted on said drum, engageable therewith at an angle to its axis, a car-supporting bolster having a rigid connection through the conduit slot with the truck and ball-bearings uniting the bolster and car body, substantially as described. 18th. The combination, with a slotted conduit, of a car-supporting and driving drum therein, a car body, independent trucks having angularly adjustable friction wheels mounted on said drum, independent bolsters rigidly connected to the trucks extending

through the slot in the conduit, and provided with laterally extending arms, spanning bars, coupling and bolsters into sets of two or more, and ball-bearings between the spanning bars and bolster arm, substantially as described. 19th. The combination, with a slotted underground conduit, of a revoluble car supporting and driving drum within the conduit, a car body above the street surface, a friction wheel truck having swiveled friction wheels mounted on said drum engageable therewith at variable angles to its axis, a car-supporting bolster having a rigid connection with said truck through the conduit slot, ball-bearings uniting said bolsters and car body, one or more lateral pressure rails within the conduit, and one or more lateral pressure rollers on said truck or rigid car connections, substantially as described. 20th. The combination, with the slotted conduit, of the car supporting and driving drum, the car body, the independent trucks, with angularly-adjustable friction wheels, the rigid bolsters extending from the trucks and having lateral arms, and pivotally connected sectional spanning bars coupling the bolsters into sets of two or more, the ball-bearings between the spanning bars and bolster arms, the equalizers and springs between the spanning bars and the car body, the lateral pressure rails within the conduit and the lateral pressure rollers on the truck frame, substantially as described. 21st. The combination, with a car-driving drum, of a car body, a truck having friction wheels engageable with said drum at an angle to its axis, a bolster provided with laterally-extended arms connecting the truck and the car body, and ball bearings between the car body and the bolster arms, substantially as described. 22nd. The combination, with a car driving drum, of a car body, two or more independent trucks, having friction wheels engageable with said drum at an angle to its axis, corresponding independent bolsters, provided with laterally-extended arms connecting the respective trucks with the car body, and ball-bearings interposed between the bolster arms and the car body, substantially as described. 23rd. The combination, with a car body, of a car-driving drum, two or more independent trucks, having friction wheels engageable with said drum at an angle to its axis, corresponding independent bolsters provided with laterally-extended arms, each bolster connecting its respective truck with the car body, ball-bearings interposed between the bolster arms and the car body, and pivotal connections coupling together said independent trucks, substantially as described. 24th. The combination, with a car body, of a car-driving drum, two or more independent trucks, each having friction wheels engageable with said drum at an angle to its axis, corresponding independent bolsters provided with laterally-extended arms, each bolster adapted to support the car body therefrom, spanning bars interposed between the bolster arms and the car body, and connecting the same together in sets of two or more, and ball-bearings interposed between the bolster arms and spanning bars, substantially as described. 25th. The combination, with a car body, of a car-driving drum, two or more independent trucks, each having friction wheels engageable with said car at an angle to its axis, corresponding independent bolsters, provided with laterally extending arms, each bolster being connected with its respective truck and adapted to support the car body therefrom, spanning bars composed of sections, pivotally connected, interposed between the bolster arms and the car-body, and ball bearings between the bolster arms and the spanning bars, substantially as described. 26th. The combination, with a car body, of a car-driving drum, two or more independent trucks having friction wheels engageable with said drum at an angle to its axis, corresponding independent bolsters provided with laterally extended arms, each bolster being connected to its respective truck and adapted to support the car body therefrom, spanning bars connecting the bolster arms into sets of two or more, ball-bearings between the spanning bars and bolster arms, and equalizers between the spanning bars and the car body, substantially as described. 27th. The combination, with a car body, of a car-driving drum, two or more independent trucks having friction wheels engageable with said drum at an angle to its axis, corresponding independent bolsters, having laterally extended arms, each bolster connected to its respective truck and adapted to support the car-body therefrom, spanning bars connecting the bolster arms into sets of two or more, ball bearings between the bolster arms, and spanning bar equalizers pivotally connected to the car body, and springs between the spanning bars and the equalizers, substantially as described.

No. 32,568. Lock Case Attachment.

(Disposition aux palastres des serrures.)

Oscar Stoddart, Anson D. Besimer and James A. Dewey, Detroit, Mich., U.S., 21st October, 1889; 5 years.

Claim.—1st. In combination with the lock case and its key-hole, the horizontal supports crossing said case, the curved metal plates mounted loosely on said horizontal supports, said metal plates having on their outer faces a support for the key, said plates adapted to be moved from side to side of the lock-case by the action of the key, substantially as and for the purposes specified. 2nd. The combination with the lock case and its key hole, the supports a, a^1 crossing the case of the lock, the spring metal plates concavo-convex in form, and having on their outer faces the studs Z, said plates loosely mounted on the supports and adapted to be moved by the action of the key, substantially as specified. 3rd. In combination with the lock-case and its key-hole, the horizontal supports a, a^1, the set of curved spring metal plates, said plates being loosely mounted on the supports, and having on their outer faces the studs Z, and lugs v being formed integral with said plates, substantially as and for the purposes specified.

No. 32,569. Sled Propeller.

(Propulseur de traîneau.)

Frederick Robbin, Rochester, N.Y., U.S., 21st October, 1889; 5 years.

Claim.—1st. In a propelling device for vehicles, the combination with the push-bar arranged at an angle to the surface of the ground and movable in the direction of its length to propel the vehicle, of a support for the bar with which it co-operates at the commencement of its stroke, substantially as described. 2nd. In a propelling device for vehicles, the combination, with the hand lever, of the push-bar pivoted thereto, arranged at an angle to the surface of the ground and movable in the direction of its length to propel the vehicle, and a support with which said bar co-operates at the commencement of its stroke, substantially as described. 3rd. In a propelling device for vehicles, the combination, with the hand levers arranged on the opposite sides of the vehicle, of the push bars pivoted thereto arranged at an angle to the surface of the ground and movable in the direction of their length, and supports with which said bars co-operate at the commencement of the stroke, substantially as described. 4th. In a vehicle propeller, the combination, with the push-bar arranged at an angle to the ground and movable in the direction of its length, of the laterally-projecting pin thereon, and the rail or surface arranged above said pin for preventing vertical movement, substantially as described. 5th. In a vehicle propeller, the combination, with the hand levers, of the push bars pivoted thereto, and the guard rails, between which and the vehicle body the push bars operate, substantially as described. 6th. In a vehicle propeller, the combination, with the hand levers of the push bars pivoted thereto, and the projections arranged between said levers and bars, with which they both co-operate, substantially as described. 7th. In a vehicle propeller, the combination, with the hand levers, of the push-bar pivoted thereto, the stops arranged forward of the levers, and the projections between the levers and bars, substantially as described. 8th. In a vehicle propeller, the combination, with an operating lever and a push-bar, of the loop secured to the bar, the hinge-pin passing through the loop having eyes at the end, and the bolt passing through said eyes, substantially as described. 9th. In a vehicle propeller, the combination, with an operating lever having the recess in its side, of the push-bar having the hinge-pin passing through said loop and secured to the lever, substantially as described.

No. 32,570. Improvements in Locking and Unlocking Points and Signals and Detecting the Position and Movement on Railways, which Improvements are also applicable to the Locking and Unlocking of Turntables, Gates and other Structures and things appertaining to Railways. (*Perfectionnements dans la fermeture et l'ouverture des aiguilles et signaux et la manière de déterminer la position et le mouvement sur les chemins de fer, tels perfectionnements étant aussi applicables à la fermeture et à l'ouverture des plateformes tournantes, des barrières et autres constructions et choses se rattachant aux chemins de fer.*)

Samuel T. Dutton, Worcester, Eng., 21st October, 1889; 5 years.

Claim.—1st. The system of interlocking railway points with each other on the ground by the aid of a series of keys or tappets, each key or tappet (except the last of the series) being common to two locks, the said keys or tappets and locks being so constructed that in their normal position the withdrawal of any of the keys or tappets is prevented until the master key or tappet has been inserted in the first lock of the series, the released key or tappet of the said first lock in the series being the master key or tappet for the second lock in the series, the released key or tappet of the second lock being the master key or tappet for the third lock in the series, the system of successional interlocking being substantially as herein set forth. 2nd. The combination of a single key or master tappet common to two locks, one lock being the first of the series claimed in the first claim, and the second a lock in the locking apparatus in the signal cabin or locks on correlated signals (the said key and locks being so constructed as to prevent the withdrawal of the key, whilst the lock remained unlocked, and permits of its withdrawal only after the signal or signals has or have been set to danger and locked in that position, or after the points have been restored to, and locked in, their normal position), with the system of ground interlocking, claimed in claim 1, substantially in the manner and for the purposes herein set forth. 3rd. The system of ground interlocking, by means of detachable keys or tappets, substantially as claimed in claim 1, with the addition that the master key or tappet has attached to it other keys or tappets, the latter keys or tappets unlocking any desired pair of points in the series. 4th. In railway signalling apparatus for switch points that are signalled for both facing and trailing directions, and when the said switch points are worked by ground levers, the combination of two notched rods R^1, R^2, one from each tongue, of the switch points crossing at right angles, a plunger bolt carried by a pivoted carrier S and a signal pull rod J, the whole operating that the facing signal cannot be deflected until the switch points are properly home in the desired position, the action of deflecting the said signal becoming the medium of interlocking and detecting actions, while the passage of a train in the trailing direction automatically places the facing signal to danger and unlocks the switch points, should the facing signal have been left in the safety attitude, all substantially as herein set forth. 5th. In railway signalling apparatus where opposite signals are required through the same pair of switch points, the application of my improved apparatus, as claimed in claim 4, for allowing switch points to be worked on the ground, that is to say, not actuated from a signal box, while still retaining through my apparatus all necessary safety, substantially as herein set forth. 6th. In railway signalling apparatus, employing a laterally movable blade as a point plunger and detector for the facing direction of a pair of switch points, the said plunger in its locked position becoming inoperative by the action of a traffic movement in the trailing direction, all substantially as herein set forth.

No. 32,571. Baking Oven. (*Four de boulangerie.*)

Charles F. Hubbard, Toronto, Ont., 21st October, 1889; 5 years.

Claim.—1st. A double-walled chamber combined with a furnace located entirely within the same and surrounded by said double walls, and having its combustion-chamber distinct from said double-walled chamber,and provided with two independent smoke-pipes, one leading directly to the chimney or main flue, and the other running in the opposite direction and leading to the air-space between the double-walls, substantially as described. 2nd. A double-walled chamber having located within it a stove or independent furnace provided with an independent flue or flues, said chamber having an air-inlet in proximity to the stove or independent furnace, and an air-outlet connecting with the interior of the chamber and entering the hollow space formed in the vertical walls of said chamber, and leading to, and connecting with, the smoke flue of the stove or independent furnace, substantially as and for the purpose specified. 3rd. A double-walled chamber having a casing lined with asbestos, and arranged to contain a stove or independent furnace provided with a direct flue running in one direction and leading to the chimney or main flue, and an independent indirect flue running in another direction, and leading to an air-space formed within the walls of the chamber and communicating with the chimney or main flue substantially as and for the purpose specified. 4th. A chamber having a casing lined with asbestos, and arranged to contain a stove or independent furnace provided with a direct flue leading to the chimney or main flue, and an indirect flue leading to an air-space formed within the walls of the chamber and communicating with the chimney or main flue, in combination with an air-inlet entering the chamber at a point in proximity to the stove or independent furnace, and an air-outlet flue entering the chamber at a point remote from the stove or independent furnace and leading to, and connecting with an air-space formed in the wall of the chamber, and communicating with the main flue or chimney, substantially as and for the purpose specified. 5th. A chamber having a casing lined with asbestos, and arranged to contain a stove or independent furnace provided with a direct flue leading to the chimney or main flue, in combination with air-spaces formed in the vertical walls of the chamber, and connected with a horizontal air-space formed in the top of the chamber, the said air-spaces being connected to a smoke flue of the stove or independent furnace, substantially as and for the purpose specified. 6th. A chamber having located within it a stove or independent furnace,a shelf located above the said stove or furnace, and an asbestos shield K_2 placed below the said shelf, substantially as and for the purpose specified. 7th. A chamber having a casing lined with asbestos, and arranged to contain a stove or independent furnace provided with a direct flue leading to the chimney or main flue, air-spaces formed in the vertical walls of the chamber and connected to a horizontal air-space formed in the top of the chamber, the said air-spaces being connected to a smoke flue of the stove or independent furnace, substantially as and for the purpose specified.

No. 32,572. Car Coupler for Heating Purposes. (*Attelage de chars pour des fins de chauffage.*)

The Automatic Car Coupler Heating Company, (assignee of Charles F. Murdock), Detroit, Mich., U.S., 21st October, 1889; 5 years.

Claim.—1st. The trunnions M and M, arranged in such manner that, when on duty, they shall stand at an angle of about 45 degrees with each other, in combination with levers R and S and stop pin X, the latter being so arranged with reference to the trunnions that the three shall form a triangle, having its base in either two of the said bearings, substantially as specified. 2nd. The combination, with the coupling heads carrying a lug or stud, of the locking levers hinged or pivoted to said heads, the levers each carrying a yielding branch adapted to engage a stud or trunnion on the opposite head, and each head also having a stop or lug arranged so as to limit the locking movement of said levers and hold them in a position, whereby they may be disconnected by longitudinal draft on the hose, substantially as specified.

No. 32,573. Potato Planter. (*Semoir à patates.*)

Hugo R. Freyer, (assignee of Carl W. Freyer), Ouray, Col., U.S., 21st October, 1889; 5 years.

Claim.—1st. The combination, with a hopper having a slot J and a discharge opening I at its rear end, of a rotary shaft mounted in the hopper at the rear end of the same, a picker secured on said shaft and moving through the slot J and discharge opening I, and mechanism for rotating said shaft, as set forth. 2nd. The combination of the hopper, the rotary shaft mounted in the hopper, mechanism for rotating said shaft, a picket carried by said shaft and adapted to remove the potatoes from the hopper, a discharging rod secured on the hopper and adapted to remove the potatoes from the picker, and a crank arm on the said shaft adapted to actuate the discharging rod, as set forth. 3rd. The combination, with a hopper, of the rotary shaft mounted in the hopper, mechanism for rotating said shaft, a picker carried by said shaft and adapted to remove the potatoes from the hopper, a spring discharging rod secured on the side of the hopper and having its lower end bent toward the picker, and adapted to remove the potatoes from the same, the said rod being provided with an offset Z, and the crank arm on the rotary shaft adapted to act on the said offset, as set forth. 4th. The combination of the hopper having the longitudinal groove K, and the transverse slot M at the front end of the said groove, the roller arranged in said transverse slot and having an irregular surface, the rotary shaft mounted in the hopper, the picker carried by said shaft and adapted to enter the groove K, and remove the potatoes from the hopper, and mechanism for rotating the said roller and the shaft, as set forth. 5th. The combination of the hopper having the slot J, the discharge opening I, the groove K registering with said slot and discharge opening, and the transverse slot M at the front end of said groove, the plate L covering the groove K, the roller arranged in the slot M and having an irregular surface, the rotary shaft mounted on the hopper and carrying a picker adapted to move through the slot J, groove K, and opening I, and mechanism for rotating the roller and the said shaft, as set forth. 6th. The combination, with the hopper having the longitudinal groove K, and the transverse slot M at the front end of the said groove, of the roller arranged in said transverse slot, and having an irregular suface composed of an alternate series of depressions and bulbous-shaped elevations, as set forth.

No. 32,574. Sleigh Knee. (*Courbe de traîneau.*)

Sherwood Hall and Martin L. Sweet, Grand Rapids, (assignees of Nelson G. Reynolds, Bangor), Mich., U.S., 21st October, 1889; 5 years.

Claim.—1st. The combination, with the knee or riser C having a socket *a* and transverse depression *f*, of a plate having hanger-arms L, and transverse pintle or shaft M provided with the lug N, and a confining plate P, substantially as and for the purpose described. 2nd. The combination, with the knee or riser C having a socket *a*, and transverse semi-circular depression *f*, of a plate having hanger-arms L carrying transverse pintle, or shaft M provided with the lug N, and a confining plate P having a transverse semi-circular recess *h*, substantially as and for the purpose described. 3rd. The combination, with the knee or riser C having the socket *a*, the rabbeted outer face *d*, and the transverse semicircular recess *f*, of a plate having hanger-arms L carrying transverse pintle or shaft M, provided with the lug N, and a confining-plate P having the extended face portion *l*, and a transverse semicircular recess *h*, all substantially as and for the purpose described. 4th. In a sleigh, the combination, with the runner having a knee or riser C secured thereto, provided with a socket *a* and transverse depression *f*, of the cross-beam provided with the hanger-arms L carrying the pintle, or shaft M provided with the lug N, and the securing plate P, substantially as and for the purpose described. 5th. In a sleigh, the combination, with the runner having a knee or riser C provided with a socket *a*, the rabbeted outer face *d*, and the transverse semicircular depression *f* of the cross-beam provided with the plate H, having hanger-arms L carrying the transverse pintle or shaft provided with the lug N, and the semicircularly-recessed confining-plate P, arranged for operation substantially as and for the purpose described. 6th. In a sleigh, the combination, with the runner having a knee or riser C provided with the socket *a*, transverse depression *f*, and bolt holes *c*, *c*, of the cross-beam provided with the hanger-arms L carrying the transverse pintle or shaft M provided with the lug N, the confining-plate P having bolt-holes *m*, *m*, and the bolts *p*, *p* passing upwardly through the sleigh shoe and runner, the standard F, and the confining-plate P provided with nuts *n*, *n*, substantially as and for the purpose described.

No. 32,575. Smoke Consumer. (*Foyer fumivore.*)

George F. Tinkham, Burlington, and Robert O. Simmons, Cedar Rapids, Iowa, U.S., 21st October, 1889; 5 years.

Claim.—1st. In a smoke consumer, the herein described nozzle consisting of the hollow plug *e* having a central hole therein, radial holes e_{II} extending through the shell of said plug, and grooves on the exterior of said plug leading from said holes e_{II} to the forward end of the plug in diverging angles, and a chambered coupling *c* adapted to connect with a suitable steam-pipe *b*, substantially as and for the purpose set forth. 2nd. In a smoke consumer, the combination of the steam-pipe *b*, coupling *c* and hollow plug *e* having central hole e_I with successive enlargements therein, radial holes e_{II}, and outer grooves e_{III}, e_{III} leading from radial holes in diverging angles, substantially as and for the purpose set forth. 3rd. In a smoke consumer, the combination of a steam-pipe having a nozzle, substantially as described,an enclosing tube with a flaring mouth surrounding said pipe and adapted to admit air around it and its nozzle, and a spider through the centre of which the said steam-pipe passes, its legs bearing in the flaring mouth of said tube, whereby said steam-pipe and nozzle are centralized with respect to said tube by the longitudinal adjustment thereof. 4th. In a smoke consumer, the combination, with a steam-pipe and its nozzle, substantially as specified, of the casting F having the air chamber *a*, with its inlet *j* contiguous to the furnace front when in normal position,the elbow a^1 forming a part of the steam-pipe connection, and the air-tube *g* communicating with said air chamber,substantially as and for the purpose set forth. 5th. In a smoke consumer, the combination, with a steam-pipe and its nozzle, substantially as specified, of the casting F having the air-chamber *a*, with its inlet *j*, the bridge a_{II}, set-screw *f*, and tube *g*, all substantially as and for the purpose set forth.

No. 32,576. Automatic Race Course.

(*Hippodrome-jouet automatique.*)

The National Automatic Device Company, (assignee of Fred N. Lang), Minneapolis, Minn., U.S., 21st October, 1889; 5 years.

Claim.—1st. In a toy race-track, the combination, with a rotary shaft, of arms or rods journalled thereon, and carrying miniature figures, and means for securing the arms to said shaft during its period of rotation, and for releasing them therefrom when the motion of the shaft is arrested, so that they can revolve thereon by acquired momentum, substantially as and for the purpose set forth. 2nd. The combination, with a revoluble shaft and actuating mechanism therefor, of one or more collars loosely mounted on said shaft, each having a figure connected therewith, and escapement and clamping devices for temporarily releasing the actuating mechanism and locking said collars to the shaft, substantially as described. 3rd. The combination, with a revoluble shaft under tension, of one or more collars loosely mounted on said shaft, each having a figure connected therewith, and escaping and clamping devices for temporarily releasing said shaft and locking said collars to the shaft, substantially as described. 4th. The combination, with a revoluble shaft under tension, of one or more collars loosely mounted on said shaft, each having a figure connected therewith, escapement and

clamping devices for temporarily releasing said shaft and locking said collars to the shaft, and a coin-controlled device for operating said escapement and clamping devices, substantially as described. 5th. The combination, with a graduated or shouldered shaft under tension, of a series of collars loosely mounted on said shaft, each having a figure connected therewith, and escapement and clamping devices for temporarily releasing said shaft and clamping said collars to the shaft, substantially as described. 6th. The combination, with a shaft under tension, of a series of collars loosely mounted on said shaft, each having a figure connected therewith, an escapement wheel for said shaft, and a lever for controlling said escapement and for clamping said collars to said shaft, substantially as described. 7th. The combination, with a graduated or shouldered shaft under tension, of a series of collars loosely mounted thereon, each having a figure connected therewith, an escapement wheel for said shaft, a lever for controlling said escapement and for clamping said collars together and to the shaft, and a coin-controlled device for operating said lever, substantially as described. 8th. The combination, with a graduated or shouldered shaft under tension, of collars loosely mounted thereon having figures connected therewith, the escapement wheel for said shaft, the combined escapement and clamping lever, and the controlling and tripping cylinder having a coin-slot adapted to hold a coin in position to operate said lever, as the cylinder is revolved, to drop the coin, substantially as described.

No. 32,577. Wine Machine. (*Machine à vin.*)

Andrew Wehrle and Herman Wehrle, Middle Bass Island, Ohio U.S , 21st October, 1889; 5 years.

Claim.—In a wine machine, the combination, with the supply tank of a heater B, separator P, pipe Q, condenser H, reheater J, separator L, pipe Q, pipe M, condenser N and pumps O and R, the parts being arranged to operate substantially as and for the purpose described.

No. 32,578. Sectional Steam Boiler.

(*Chaudière à vapeur en sections.*)

Frank C. Sturges, as trustee (assignee of Albert M. Dimmick and Elmer Z. Smith), Wilkes Barre, Penn., U.S., 21st October, 1889; 5 years.

Claim—1st. In a sectional steam boiler, the combination of the mud-drum, the steam-drum O, the pipes H communicating with said mud-drums and steam-drums, and the branch pipes L arranged at suitable angles supported over the fire-box and communicating at their upper and lower extremities with pipes H, substantially as described. 2nd. In a sectional steam boiler, the combination of the mud-drums, the steam drums and the sections connecting the same, the said sections comprising each a pipe H, and the oppositely-inclined branch pipes L communicating with each other and communicating with the section pipes near the upper and lower ends thereof, substantially as described. 3rd. The combination in a sectional steam boiler of the pipe H and the branch pipe L having their opposite ends connected to and communicating with each other, and their extreme upper and lower ends communicating with the pipes H near the upper and lower ends thereof, substantially as described. 4th. The combination of the mud-drums, the steam-drum, the inclined pipes H having their lower ends detachably secured to the mud-drums, the three-way union I detachably secured to the pipes H, the pipes N connecting the upper branches of said unions I to the steam-drum, the couplings K connected to pipes H near the lower ends thereof, and the communicating branch pipe L connected to couplings K and the lower branches of unions I, substantially as described. 5th. In a sectional steam boiler, the shell P, the steam-drum therein, the mud-drums, the section pipes connecting the steam and mud-drums, and the magazine-chute extending through the shell passing down between the pipes and having its lower end arranged over the fire-box, substantially as described. 6th. In a sectional steam boiler, the combination of the mud-drums, the steam-drum, the section pipes H extending up from the mud-drums, and having the coupling K near their lower end and the unions I at their upper ends, the pipes N attached to the steam-drum and to the unions I, and the opposite inclined branch pipes L connected together by couplings M and connected to the section pipes by couplings K and unions I, substantially as described. 7th. In a sectional steam boiler, the mud-drums E, the steam-drum O and the sections connecting the same, said sections each comprising a pipe H and the oppositely-inclined branch pipes L communicating with each other and with the pipes H, said branch pipes being connected together by couplings M and connected to the pipes H by coupling K and union I, as set forth. 8th. In a sectional steam boiler, the mud-drums E, the steam-drum O and the boiler proper made in sections, each comprising a pipe H and inclined branch pipes L, the lower end of the pipe H being detachably secured to the drums E, and the upper ends being detachably connected to the steam-drums by means, substantially as described and set forth.

No. 32,579. Self-Contained Gas Fired Steam Generator. (*Générateur de vapeur à combustible gazeux.*)

George H. Taylor, Liverpool, Eng., 24th October, 1889; 5 years.

Claim.—1st. In self-contained gas fired steam generators consisting of a central gas producer A1 surrounded by and communicating with a combustion chamber P supporting the steam generator, the air passage or chamber *c* formed beneath or in the surrounding wall of the combustion chamber and communicating therewith, and the radial fire bricks *a1* arranged within the combustion chamber, substantially as described and for the purposes set forth. 2nd. In self-contained gas fired steam generators consisting of a central gas producer A1 surrounded by and communicating with a combustion chamber P supporting the steam generator, the combination of a water jacket T formed around the gas producer together with the admission and delivery pipes V and V1, and of the central uptake R conducting the gases from the gas producer into branch pipes S1, S11 communicating with said combustion chamber, substantially as described and for the purposes set forth. 3rd. In combination, with the self-contained gas fired steam generators, as above claimed, the steam generator consisting of a hood *g* provided with relief tubes *h* and fire tubes *i* and surmounted by a waste heat box *k* furnished with water tubes *j* extending within the hood *g*, substantially as described and for the purpose set forth.

No. 32,580. Car Coupler for Heating Purposes. (*Attelage de chars pour des fins de chauffage.*)

The Automatic Car Coupler Heating Company (assignee of Charles F. Murdock), Detroit, Mich., U.S., 24th October, 1889; 5 years.

Claim.—1st. The combination, with the tubular coupling bodies, of the hook-shaped lugs D, the interlocking arms E provided with extensions, I beveled surfaces and recesses, the trunnions on the sides of the coupling bodies, the flexible bifurcated lever handles provided with eyes, curved engaging arms and eye-pieces adapted to receive a pull uncoupling rope, substantially as specified. 2nd. The combination of two coupling sections having on their under sides interlocking rigid lugs or arms, and each having a laterally disposed trunnion and levers journaled to said sections, and having a yielding arm or branch adapted to engage the trunnion on the opposite coupling section, substantially as specified. 3rd. The combination, with two coupling sections, each having a rigid arm on its under side adapted to interlock when the adjacent ends of the section have been brought together, of two locking and unlocking levers having a forked branch, one branch of each lever being respectively journaled on the sides of the coupling section, and the opposite branch of each lever being adapted to engage a trunnion on the side of the opposite coupling section, substantially as specified. 4th. The combination, with two coupling sections, each having a laterally disposed trunnion, of a hinged coupling and uncoupling lever having a yielding branch adapted to engage the trunnion of the opposite section, the said levers having their outer ends adapted to receive a pull cord, substantially as specified.

No. 32,581. Carriage Wrench. (*Clé de voiture.*)

Frederick A. Wegner, Three Rivers, Mich., U.S., 24th October, 1889; 5 years.

Claim.—1st. A carriage wrench consisting of a spring shank provided with an adjustable socket adapted to fit different sized nuts, and means on the end of the shank for engaging the spokes, substantially as described. 2nd. A carriage wrench consisting of a shank made of spring metal provided with a socket for engaging the nut, and means on the ends of the shank for engaging the spokes, substantially as described. 3rd. In a carriage wrench consisting of a spring shank having a nut socket for engaging the nut, and means on its ends for engaging the spokes, a portion of said spring shank turned at right angles to itself to provide a lateral springiness, substantially as described. 4th. In a carriage wrench, the combination, with a spring shank provided with means at its ends for engaging the spokes, of an adjustable socket located on said spring shank, said socket consisting of a stationary and an adjustable jaw, and means for locking the adjustable jaw in the position described, substantially as described. 5th A carriage wrench consisting of a metallic spring shank provided with a nut socket for engaging the nut, and hooks on the ends of said shank adapted to engage the spokes, substantially as described. 6th. In a carriage wrench as shown and described, the hooks *d* provided with a covering of rubber or similar material, substantially as described.

No. 32,582. Metallic Glazing.

(*Polissage métallique.*)

John T. Pennycook, New York, N.Y., U.S., 25th October, 1889; 5 years.

Claim.—1st. The combination of a metallic sash-bar of substantially the form shown, having a central web and longitudinal flanges, a glazing strip or strips of soft sheet metal covering the inner faces of the flanges, and more or less of the central web of the bar in position to overlap the edges of the glass-plate fitted upon said flanges, and a reinforcing strip of relatively stiff or rigid sheet metal covering the under side of the flange bar, and bent over the edges of the flanges to extend in over and upon the glazing strip lining said flanges, substantially in the manner and for the purpose herein set forth. 2nd. The combination of the metallic sash-bar of substantially the form shown, having a central web and lateral longitudinal flanges, a single sheathing and glazing strip covering wholly the web and the inner face of its lateral flanges, and which is doubled back upon itself upon said flanges and up each face of the web to overlap with its free edges the edges of glass plates fitted upon the flanges and a reinforcing strip of relatively stiff or rigid sheet metal covering the under side of the flange bar and folded in over the edges of the flanges to extend over and upon the face of the glazing strip lining the inside of said flanges, substantially in the manner and for the purpose herein set forth.

No. 32,583. Culinary Utensil.

(*Ustensile de cuisine.*)

Christopher F. Whitney, Newton, Mass., U.S., 24th October, 1889; 5 years.

Claim.—1st. In combination, with the kettle *a* having within it the upright projecting flange c, the adjustable disk *h* having a plural number of peripheral projections with sockets of different depths adapted to rest against the inner edge of the flange *c*, all substantially as described. 2nd. In combination, with the kettle *a* having the odor tube *d*, one wall of which projects within the kettle and a water seal around the upper edge of the kettle, the adjustable disk *h* having a plural number of projecting parts with sockets adapted to

rest against the inner wall of the odor tube, while the outer ends, of the projections abut against the opposite walls of the kettle and the kettle cover all substantially as described. 3rd. In combination with a kettle *a* or like cooking utensil having the inward projecting flange, an adjustable disk having a plural number of peripheral bearing points, and a peripheral socket adapted to receive the said flange that projects within it and forms one point of rest or support for the disk in one of its positions of vertical adjustment in the kettle, all substantially as described.

No. 32,584. Feed Water Regulator.

(Régulateur de l'eau d'alimentation.)

Frederick Cook and Burchard Thoens, New Orleans, La., U. S., 24th October, 1889; 5 years.

Claim.—1st. In a feed water regulator, the combination, with a chamber A connected to the steam boiler by a pipe B, of a steam pipe D connected with a boiler feed pump, a weight F connected by a head H_1 with a lever H having a counter-balancing weight G, and a valve J located in the steam pipe D and connected with the head H_1, substantially as described. 2nd. In a feed water regulator, the combination, with a chamber A connected to the boiler by a pipe B, of a steam pipe D connected with a boiler feed pump, a valve J located in said steam pipe, a weight F connected to the stem of said valve by a head H_1 and partly immersed in the water in chamber A, a lever H connected to the head H_1, a counter-balancing weight G adjustable on the lever and a water supply pipe C, substantially as described. 3rd. In a feed water regulator, the combination, with a closed chamber A, of a pipe B connecting said chamber with the boiler, a steam pipe D connecting said chamber with a feed pump, a weight F partly immersed in the water in said chamber, a valve J in the steam pipe having a stem J^4, a head or rod H_1 connecting said stem to the weight F, a lever H, a counter-balance weight G and an adjusting screw N, substantially as described. 4th. In a feed water regulator, the combination, with the chamber A, of the pipe B, steam pipe D entering the valve chamber J^3, the valve J, stem J^4, weight F and head H_1, substantially as described. 5th. In a feed water regulator, the combination, with a closed chamber A, of the pipes B and C, steam pipe D, valve J having a stem J^4, weight F adjustable on the threaded rod K, the lever H and adjustable weight G, substantially as described. 6th. In a feed water regulator, the combination, with a closed chamber A, of pipes B and C, steam pipe D, valve J balanced in the valve chamber J^3, weight F connected by rod K and head H_1 to the stem J^4 of said valve lever H connected to head H_1, weight G adjustable on the threaded end of said lever and adjustable stop N, substantially as described.

No. 32,585. Manufacture of Butter and Apparatus therefor. *(Fabrication du beurre et appareil pour cet objet.)*

Frederick R. Norlow, Copenhagen, Denmark, 24th October, 1889; 5 years.

Claim.—1st. The manufacture of butter in centrifugal apparatus which substantially consists in forcing the cream or the fresh milk by the action of centrifugal force through a perforated or porous material, such as wire gauze, woven fabric, clay leather, or the like, for the purpose of freeing the same from the bubbles adhering to the particles of butter and from the mucus. 2nd. The method of manufacturing butter from milk or cream, which consists in forcing the same from the stratum of cream in centrifugal apparatus by the rotation thereof, or from the stratum of butter fat before the cream, and then conducting it towards the rotary axis of the centrifugal apparatus in order to be conveyed back to the rotating liquid. 3rd. In centrifugal apparatus for the manufacture of butter, the inner receptacle H, which is adapted to take part in the rotation, and the periphery of which, forming a partition between the butter and the butter fat, is provided with openings *b* which are covered with porous or perforated material, substantially as and for the purpose described with reference to the accompanying drawing. 4th. In apparatus for the manufacture of butter, the adjustable return-pipe channel or passage Q through which the butter formed together with the butter fat and cream is conducted from the drum back to the inner receptacle H, substantially as and for the purpose described with reference to the accompanying drawing. 5th. A centrifugal apparatus for manufacturing butter from butter-milk, which is characterized by the arrangement of the receptacle H, in combination with the return-pipe channel or passage Q, substantially as above described and shown in the accompanying drawings.

No. 32,586. Feed Water Heater.

(Réchauffeur de l'eau d'alimentation.)

Edward F. Luthy and Charles E. Harris, Vernon, Mich., U.S,, 24th October, 1889; 5 years.

Claim.—1st. In a feed water heater, the combination, with a shell A, of a water-inlet conduit C, a perforated pan F into which said conduit discharges, a filter G below said pan, a series of transverse tubes *e* through which the water, having passed the filter, circulates, an exhaust steam-pipe B passing up through, and having orifices below the perforated pan, and a conduit D^2 leading from the series of transverse tubes to the boiler, substantially as described. 2nd. A feed water heater comprising a shell A, a water inlet C, a perforated pan F into which said inlet discharges, a filter G below said pan, an exhaust steam pipe B, manifolds or heads E, E_1, transverse tubes *e* uniting said manifold and heads, said manifolds or heads and tubes constituting a part of the feed-water conduits, and a connection from the tubes to the boiler, substantially as described. 3rd. A feed water heater comprising a shell A, a water inlet C, a perforated pan F into which the inlet discharges, a filter G below said pan, an exhaust steam-pipe B, manifolds or heads E, E_1, transverse tubes *e* uniting said manifolds or heads and forming a part of the feed water conduit, removable plates for gaining access to the interior of said manifolds or heads and tubes, and a connection between the same and the boiler, substantially as described. 4th. In a feed water heater, the combination, of a shell A, a water inlet C, a corrugated pan F having slots or perforations at the top of the ridges, a filter G, an exhaust steam inlet pipe D rising through and having orifices immediately below said perforated pan, and transverse tubes *e* forming part of the feed water conduit, substantially as described.

No. 32,587. Bench Clamp. *(Etau d'établi.)*

Phillip J. Larrabee, (assignee of George A. Loring), Portland, Me., U.S, 24th October, 1889; 5 years.

Claim.—1st. In a bench-clamp, the combination, with a bench having a stationary jaw at or near one end, and projecting above the plane of the top of the bench, and a central longitudinal slot therein with ratcheted sides, of a carriage adapted to move in said slot, pawls pivoted to the carriage and adapted to engage the ratchet sides of the slot, a spring constantly tending to hold the pawls in engagement with the ratchet, and a screw-threaded rod adapted to travel in a female screw in the cross-bars of the carriage, and having on the end a swiveled jaw adapted to slide upon and over the top of the bench, as set forth. 2nd. In a bench-clamp, the combination, with a bench having a stationary jaw at or near one end projecting above the plane of the top of the table, and central longitudinal slot with ratchet sides, a carriage adapted to move in said slot and carrying a screw-threaded bolt having on the end a swiveled jaw adapted to slide upon and over the top of the table, of pawls pivoted to the carriage, a link connecting the ends of said pawls and having a slot therein through which passes a spur set in the cross-bar of the carriage, and a spring, substantially as set forth. 3rd. In a bench-clamp, the combination, with a bench having a stationary jaw at one end, central longitudinal slot with ratcheted sides, a carriage adapted to slide in said slot and carrying a screw-threaded rod having on the end a swiveled jaw adapted to slide upon and over the top of the bench, and pawls adapted to engage with the said ratchets, of a brace-block having a spur adapted to enter any one of a series of holes in the clamping-face of the jaws, substantially as set forth.

No. 32,588. Rivetting Machine.

(Machine à rivetage.)

John F. Allen, New York, N.Y., U.S., (assignee of Allen G. Ingalls, Ottawa, Ont.,) 24th October, 1889: 5 years.

Claim—1st. In combination, with the frame of a rivetting machine, of the oscillating cylinder pivoted upon the rearward upper portion of the frame, whereby the line of the thrust of the piston of the former may be accommodated to the sweep of the curve of the attachments of the latter with an operating mechanism, as set forth. 2nd. In a rivetting machine, the combination, substantially as herein shown and described, of a link-operated supply and exhaust valve, whereby through the piston rod, the pressure medium working the piston, shall be caused to operate, as set forth. 3rd. In a rivetting machine, the combination, substantially as hereinbefore shown and described, with the frame oscillating cylinder and accessories, of a toggle joint, whereby through the plunger the power may be transmitted, as set forth. 4th. In a rivetting machine, the combination, with the oscillating cylinder having a supply and exhaust valve, a piston, and piston rod, of arms or rods moving upon fixed centres and carried through the arc of the circle of which the distance between their attachment centres is the radius, with an arm so pivoted as to be carried through the arc of the same circle at the one attachment centre, having the other attachment centre arranged to move in a direct line with a ram or plunger carrying a means for rivetting, as set forth. 5th. In a rivetting machine, the combination, with an arm having its inner end pivoted to the outer end of the piston rod of the oscillating cylinder which traverses the arc of the circle, of means, such as described, for directing its downward pressure upon the plunger, so that the latter may not bind in its bearings when operated, as set forth. 6th. In a rivetting machine, the combination, of a frame having a fork or rods whereby it may be suspended, a cylinder with accessories whereby power is received and transmitted with a toggle or elbow joint actuating a plunger through means to prevent its binding in its bearings while transmitting the power to the actual means for rivetting, as set forth. 7th. In a rivetting machine, the combination, of an oscillating cylinder, with a toggle joint, dies, punches, and shears, as shown and described, and as and for the purposes set forth.

No. 32,589. Pneumatic Hammer.

(Marteau pneumatique.)

Frederick C. Brooksbank, West Cleveland, and Jacob B. Perkins, Cleveland, Ohio, U. S., (assignees of Gilbert Glossop, Sheffield, Eng.,) 24th October, 1889; 5 years.

Claim—1st. In a pneumatic hammer, a reciprocating cylinder having suitable valved air inlets, and an air outlet provided with an outlet valve, in combination with a pressure device for increasing the resistance of said outlet valve, substantially as specified. 2nd. In a pneumatic hammer, a reciprocating cylinder having suitable valved air inlets, an air outlet, and a spring-pressed valve to said outlet, in combination with a pressure device for increasing the resistance of said spring, substantially as specified. 3rd. In a pneumatic hammer, a cylinder having a spring-pressed outlet valve, in combination with a movable tapered slide arranged to compress said spring, substantially as specified. 4th. In a pneumatic hammer, an air cylinder connected with the operating axle, and a tup connected with a piston in the cylinder, in combination with a friction brake located at the side of the tup, substantially as set forth. 5th. In a pneumatic hammer, a tup, an air cylinder, and a piston working in said cylinder, and connected by a rod with the tup, in combination with a brake arranged at the side of the tup, substantially as set forth. 6th. In a pneumatic hammer, a crank axle, and an air cylinder attached to the crank and reciprocated thereby, in combination with a tup, a rod and a piston connecting the tup with the cylinder, and a frictional

brake for the tup, substantially as set forth. 7th. In a pneumatic hammer, a reciprocating air cylinder having a spring-pressed outlet valve, a piston rod and tup in combination with a brake arranged at the side of said tup, and a pressure device for increasing the resistance of said outlet valve, substantially as set forth. 8th. In a pneumatic hammer, a reciprocating air cylinder, having a spring-pressed outlet valve, a piston rod and tup combined with a pressure device for said valve, a brake for said tup, a treadle, and devices connecting said pressure device with said treadle, substantially as set forth. 9th. In a pneumatic hammer, a reciprocating cylinder, piston, piston rod and tup, combined with a brake arranged at one side of the tup, and an adjustable plate arranged at the other side of said tup, substantially as and for the purpose specified. 10th. In a pneumatic hammer, a reciprocating air cylinder, an outlet valve in the upper end thereof, a hollow valve plug, and a spring contained therein combined with a headed stem Q, and a sliding wedge, substantially as and for the purpose specified. 11th. The combination of the upright standards A, B having the guides a, b on their proximate surfaces, a crank shaft journalled in and extending from one to the other of said standards with a cylinder, a link connecting the said cylinder and crank shaft, piston rod and tup, said cylinder and tup being guided in their movements by said grooves a, b, substantially as and for the purpose specified. 12th. In pneumatic hammers, the combination, with the tup, of a brake so constructed and arranged as to bring a pressure to bear against the tup, whereby the force of the stroke may be regulated and the tup stopped, substantially as set forth. 13th. A supporting frame and a tup, in combination with a brake block set into the frame opposite the tup, and a pressure piece to bear against the said block and regulate the stroke of the tup, substantially as set forth.

No. 32,590. Cleaning Apparatus for Steam Boilers. (*Appareil pour nettoyer les chaudières à vapeur.*)

John S. Roake, Brooklyn, N.Y., U.S., 24th October, 1889; 5 years.

Claim.—1st. In a cleaning apparatus for steam boilers, the dome D D_1 held concentrically within the cleaning chamber B, in combination with each other, and with a pipe C arranged to bring water from near the water line of the boiler, and a pipe E arranged to return water from a point within the dome to a point at or near the bottom of the boiler, arranged to circulate the water and deposit the solid matter in the base of the cleaning chamber, substantially as herein specified. 2nd. In a cleaning apparatus for boilers, the cleaning chamber B, and water connections C and E, in combination with each other and with the weighted lever K, K_1, cylinder I, piston J, connections J_1, J^2, pipe L, branch L^1, and cock l, blow-off pipe G, and cock g, and connections, as P and Q, to a tilting frame M actuated by the lever K, arranged to automatically discharge the sediment from the bottom of chamber B at intervals, substantially as herein specified. 3rd. In an apparatus for cleaning boilers, the tilting cradle M, and shifting roller N connected to the operating cocks, as shown, in combination with the separate actuating lever O, and connections for operating it from the loaded lever K, and means as the cylinder I, piston J, and cocks l and g, and the pipes L, L^1 and G for operating such levers, all arranged for joint operation substantially as herein specified. 4th. In a cleaning apparatus for boilers having provisions, as the c... f, and its connections, for automatically discharging the sediment from the bottom of the cleaning chamber at intervals, the cock h, and its operating lever h_1, and link R connected to a working portion, as l_1, arranged to provide a discharge from the top of the cleaning chamber, and thereby to periodically eject the light solid matter collecting at the top, substantially as herein specified. 5th. A cleaning apparatus for steam boilers having a cleaning chamber B, with its top at or below the proper water line of the boiler, a connection C, C_1 from the water line of the boiler to the top of said chamber, a connection E from a point in the interior of the cleaning chamber near the top to a low point in the boiler, provisions, as the dome D, for compelling the water received through the connection C to descend and again rise in a gentle current in the cleaning chamber, allowing the solid matter to descend as a sediment, in combination with each other and with provisions, as the cock g, for blowing out from the bottom of the cleaning chamber arranged to retain the water in the cleaning chamber, substantially as herein specified.

No. 32,591. Road Cart. (*Désobligeante.*)

Nelson H. Hill, Armanda, Mich., U.S., 24th October, 1889; 5 years.

Claim.—1st. In a road-cart, the combination, with the shafts, and a crate or body, of a spring supporting said body upon the shafts, said spring terminating in depending ends, said ends engaged with said body, substantially as specified. 2nd. In a road-cart, the combination, with the shafts, and a crate or body provided with crate-bars, of a spring supporting said body upon the shafts, the extremities of the spring shaped to enter an orifice in the crate-bars and secured therein, substantially as specified. 3rd. In a road-cart, the combination, of the axle, the seat, the spring, and a seat support engaged with the spring astride the axle, and with the seat, substantially as set forth. 4th. In a road-cart, the combination, of the axle, the seat, the spring, and a seat support provided with a loop, said support uniting the spring and the seat, and the axle passing through said loop, substantially as and for the purposes specified. 5th. In a road-cart, the combination, of the axle, the shafts, the seat, the spring, a seat support connecting the seat and spring, said spring having an adjustable support at its extremities, substantially as specified. 6th. In a road-cart, the combination, of the axle, the shafts, the seat, and a spring supporting the seat, said spring provided with stirrups at its extremities, said stirrups having an adjustable connection upon an adjacent portion of the cart, substantially as set forth. 7th. In a road-cart, the combination, of the axle, the shafts, the seat, a spring supporting the seat, a plate H provided with one or more hooks located upon each shaft, the extremities of the spring having an adjustable engagement with said plates, substantially as set forth.

No. 32,592. Ice Creeper. (*Crampon à glace.*)

Frederick W. Coe, Vergennes, Vt., U.S., 24th October, 1889; 5 years.

Claim.—The ice-creeper consisting of the heel-plate having the rear clamp-lugs and the corrugated middle channel, the slotted adjustable serrated bar, its fastening-screw, and the cam-lever catch connected to the front end of said bar, substantially as specified.

No. 32,593. Method of Manufacturing a Substance Consisting of a Combination of Wadding and Gauze or Similar Suitable Material. (*Mode de fabrication d'une substance consistant dans une combinaison de ouate et de gaze ou de matières similaires convenables.*)

Martin Chotzen and Oscar Silbermann, Breslau, Germany, 24th October, 1889; 5 years.

Claim.—The improved manufacture of fabric consisting of compressed wadding, a similar material protected on both sides with a covering of gauze, or its equivalent, and adapted for impregnation with antiseptic or other medicinal substances, substantially as described.

No. 32,594. Vehicle Pole Tip. (*Embout de timon de voiture.*)

George T. Wilson, Lowville, N.Y., U.S., 24th October, 1889; 5 years.

Claim.—1st. A device for the purpose described, comprising a main portion, a flat spring arranged within the same, and a hook pivoted to said portion with one end bearing on said spring, and the other end having a flattened portion concaved upon its under side, substantially as shown and described. 2nd. As an improved article of manufacture, a combined pole-tip and clip formed integral with said tip, being provided with a pivoted hook, the forward end of which extends below its pivot and is flattened and concaved upon its under side, substantially as and for the purpose specified. 3rd. As an improved article of manufacture, the pole-tip described, consisting of the tip B formed with ring h, and chambered portion, and the hook pivoted within said portion, and having a flat portion bearing on said spring, and its outer end concaved on its under face to correspond with the curvature of the tip B and with its free end when in engagement with the tip on a plane between the tip and the pivot of said hook, substantially as shown and described.

No. 32,595. Safety Water Gauge Cock. (*Robinet-jauge à eau de sûreté.*)

Nels A. Svensson, Lübeck, Germany, 24th October, 1889; 5 years.

Claim.—1st, The employment of cocks A, A_1, with passages b, b_1, c, d, f and g, and of a valve D to prevent the escape of water and steam from the boiler when the gauge glass breaks, substantially as described. 2nd. The employment of waste cocks E, in combination, with passages f and g, of the cocks A, A_1 to facilitate clearing the valve D, substantially as described.

No. 32,596. Storage Battery. (*Accumulateur.*)

Thomas J. Haslam, Jr., Dublin, Ireland, 24th October, 1889; 5 years.

Claim.—1st. The frame A with distance pieces B on the side frames, with grooves in top and bottom rails E, D for holding rods, pencil, spheres or beads F therein, as described and shown. 2nd. The strip I for the attachment of all the rods, pencils, spheres, or beads F of one frame A outside of the frame, as and for the purpose described. 3rd. The construction of cells K of storage or secondary batteries, with channels L for enabling the strength of the electrolyte to be ascertained, as described.

No. 32,597. Tool for Breaking Ice. (*Outil pour casser la glace.*)

Alexander W. M. Moore, London, Eng., 24th October, 1889; 5 years.

Claim.—The construction of a tool for breaking ice, consisting of a tube within which is a spring-controlled needle, actuated by depressing a buffer or push on the top of the needle, the said tube being provided with top and bottom covers with central apertures therein, and with downwardly projecting prongs or spikes, all combined and operating substantially in the manner described and illustrated in the accompanying drawings.

No. 32,598. High and Low Water Alarm for Steam Boilers. (*Indicateur à sifflet du niveau d'eau pour les chaudières à vapeur.*)

Adam W. Gilfillan, Mendocino, Cal., U.S., 24th October, 1889; 5 years.

Claim.—1st. The combination of the vertical pipes, connected respectively with the water and steam spaces of a boiler, a bracket attached securely to one of said pipes, and having a sleeve for the passage of the other pipe, an arm extending upwardly from said bracket, and having at its upper end a horizontal bracket provided with guide sleeves for said pipes, and upwardly-extending arms, levers pivoted to the said arms and connected loosely with said pipes, an arm extending upwardly from one of said levers, and carrying a disk adapted to bear against and operate the plug, of a spring valve connected with the steam space of a boiler, and a steam whistle connected with the said valve, substantially as and for the purpose set forth. 2nd. In a high and low water alarm for steam boilers, the combination, with the expansion and contraction pipes connected respectively to the low and high water lines of the boiler, of the

levers pivoted to stationary supports and connected loosely with the upper ends of said pipes, a steam whistle arranged to be actuated by means of an arm extending from one of said levers, and cams at the ends of said levers adapted to operate the escape-valves at the upper ends of the said pipes, substantially as set forth. 3rd. The combination of the vertical expansion-pipe connected with the low-water line of a boiler, a T-coupling at the upper end of said pipe, the horizontal branch of which is connected with the steam-space of the boiler, and the upper end of which is provided with a steam-whistle, and a spring-valve for admitting steam to the latter, a branch extending laterally from said T-coupling, and having an escape valve provided with a laterally-extending plug, a partition arranged in the T-coupling between its laterally-extending branches, a lever pivoted to a stationary support and having its inner end connected loosely with the inner end of the expansion-pipe, and provided at its outer end with a cam adapted to engage the plug of the escape-valve, a spring connecting the inner end of the lever with its stationary support, and an arm extending upwardly from the lever, and carrying a disk adapted to engage a valve-plug of the steam-whistle, substantially as and for the purpose set forth. 4th. The combination of the lever having one end connected loosely with an expansion-pipe, the lower end of which is connected with the low-water line, of the boiler, a steam whistle having a spring-valve connected with the steam-space of the boiler, an arm extending upwardly from the said lever, a lever mounted pivotally at the upper end of said arm, a screw-threaded rod mounted adjustably in one end of said lever, and a concave disk at the inner end of said screw-threaded rod adapted to engage the valve-plug of the steam-whistle, substantially as and for the purpose set forth. 5th. The combination of the expansion-pipe connected with the low-water line of a boiler, a steam-whistle connected with the steam-space of the boiler, a lever pivoted to a stationary support, and carrying a disk adapted to engage the valve-plug of the steam-whistle, said lever having one end connected loosely with the upper end of the expansion-pipe, a contraction-pipe connected to the high-water line of the boiler, and a lever pivoted to a stationary support and having one end connected loosely with the upper end of said contraction-pipe, the other end of said lever being extended under and adapted to bear against the adjacent end of the signal-operating lever, substantially as and for the purpose herein set forth.

No. 32,599. Device for Holding the Connecting Bar of Window Blind Slats.

(Appareil assujétir la barre reliant les lames des persiennes.)

Marquis L. Hall, Omaha, Neb., U.S., 24th October, 1889; 5 years.

Claim.—As an improved article of manufacture, a device for holding the connecting bar or rod of blind-slats, consisting of a single piece of wire bent midway of its length to form an eye, and having upwardly directed branches B, and a horizontally disposed clamping portion formed from the branches A covering at the ends, the whole being adapted to be secured to a window-blind by a screw, substantially as specified.

No. 32,600. Flute. (*Flute.*)

Eberhardt Wunnenberg, Cologne, Germany, 24th October, 1889; 5 years.

Claim.—A flute in which the head *a* is in connection with an intermediate part *b* by a curved neck, in such manner that the axis of the head is at right angles to that of the intermediate part, substantially as described.

No. 32,601. Harrow. (*Herse.*)

Columbus L. Powell, Centre Town, Mo., U.S., 24th October, 1889; 5 years.

Claim.—The combination, with a harrow frame composed of a series of flexibly connected toothed bars, of a bolt secured centrally to and extending upwardly from one of the bars, a flanged plate mounted upon the said bolt, and a longitudinal stiffening bar adapted to be secured detachably thereto, substantially as set forth.

No. 32,602. Combined Currycomb and Brush. (*Etrille-brosse.*)

John Topping, Elgin, Ont., 24th October, 1889; 5 years.

Claim.—The combination of the back frame or body A having the strap or handle C, with the corn-cobs B, B, B, substantially as hereinbefore shown and described and as and for the purposes set forth.

No. 32,603. Saw Set. (*Tourne à gauche.*)

Joseph E. Whiting, Montrose, Penn., U.S., 24th October, 1889; 5 years.

Claim. - A saw set composed of the body A having the tapered faces A^1, A^2 and A^3, and the shoulders *a*, and the block B chambered to fit on the tapered faces of the body A, provided with the recesses *m*, and having the shoulder *b* shaped to fit to the shoulder *a* on the body A, as shown and specified.

No. 32,604. Door Check and Holder.

(*Arrête-porte.*)

Joseph M. Brohard, Clarksburg, W. V., U. S., 24th October, 1889; 5 years.

Claim.—1st. A door check, consisting of the plate 4, having at one end a laterally-projecting pin 5, the lever 2 turning on a pivot located between its ends, and when in a horizontal position adapted to bear at one end upon the lateral pin, and having at its opposite end an elastic bearing 10, and the lengthwise contracting spring 3, having one end secured to the lateral pin and the other end secured to the lever between its pivot pin and the elastic bearing, substantially as shown and described. 2nd. A door check, consisting of the plate 1, having at one end the lateral pin 5, the lever 2, having the lug 6 and turning on a pivot located between its ends, and provided at one end with the elastic cushion 10, and the spring 3, having one end secured to a bar 13 on the lever adjacent to the elastic cushion and between said cushion and the pivot of the lever, substantially as shown and described.

No. 32,605. Wheel for Velocipedes and other Vehicles. (*Roue pour les vélocipèdes et autres véhicules.*)

Charles J. Reynolds, Glan-Y-Ffordd, Maidenhead, Eng., 24th October, 1889; 5 years.

Claim.—In all kinds of "Tangent" or "Laced" wheels, the fastenings of the spokes at all or any of the points of crossing, by twisting or half twisting them together, the joint thus made being afterwards of desired solder or otherwise bound.

No. 32,606. Metallic Buckle and Clasp.

(*Boucle et agrafe métalliques.*)

James L. O'Connor, New York, N. Y., U. S., 24th October, 1889; 5 years.

Claim.—1st. In a buckle, the body *c k* having sides *c* constructed with notches c^1, and bottom *k* constructed with slots *l* and l^1, of the lever *f* pivoted to the said sides *c*, working between the said sides, the finger f^1 upon said lever engaging the slot *l* of said bottom *k*, the latch g^1 working in said lever and engaging the notches c^1, and the catch f^{III} and the spring *g* by which the said latch is actuated, all substantially as specified. 2nd. In a buckle, the combination, with the body *c k* and the lever *f* pivoted thereto, of the arm *d*, the fingers d^1, d^{II}, d^{III} upon said arm, and the strap *h* adapted to slide into the body *c*, *k*, and having slots *i* adapted to be engaged by the fingers d^1, d^{II}, d^{III}, all substantially as and for the purpose set forth. 3rd. The combination, with the body of a buckle, substantially as herein described, a lever having a confining latch pivoted to said body, and an arm pivoted to said lever and provided with fingers, as specified, of a strap sliding into the said buckle body, constructed with slots adapted to be engaged by said fingers, and means for fastening the ends of said buckle, and all the parts so constructed and arranged that facility if afforded for fastening securely together various things at different distances apart, all substantially as and for the purpose set forth.

No. 32,607. Car Seat. (*Siège de charrette.*)

John M. Lee, Douglas, Ark., U.S., 24th October, 1889; 5 years.

Claim.—1st. The combination, with the seat-supporting frame, provided with a central vertical aperture E, and a circular metallic track G secured on the upper face thereof, of the seat B provided with a depending pivot bolt operating in said aperture E, and a series of metallic wear plates secured to the under-side of said seat and adapted to travel on said track G, substantially as and for the purpose described. 2nd. The combination, with the seat-supporting frame, provided with a central vertical aperture, of the seat B provided with a depending bolt held in said aperture, provided with a flanged head secured to the underside of the seat, said head provided with a convexed under surface, and a washer disposed upon the bolt between the seat and seat frame, and provided with a convexed upper surface engaging the flanged head of the bolt, substantially as and for the purpose described. 3rd. The combination, with the seat frame provided with a central vertical aperture, of the seat B provided with a depending pivot, both operating in said aperture E, said bolt formed with lateral wings or flanges *c*, *c* adapted to be bolted to the underside of seat B, the central portion of said flanges formed convexed on their undersides, and a nut or washer disposed on said bolt between the seat and supporting frame, provided with an upper convex surface, substantially as and for the purpose described. 4th. The hereinbefore described improvement in car seats, consisting of a supporting frame A, provided with a central aperture E, and a spring catch I at one side, the seat B, provided with a depending pivot bolt operating in said aperture E, said bolt provided with a flanged head having a convex bearing surface on its lower face, depending lugs or stops secured to said seat adapted to engage the spring catch L, and a washer disposed between the seat and seat frame provided with an upper convexed bearing surface adapted to engage the flanged bolt head, all arranged substantially as and for the purpose described. 5th. The combination, with the supporting frame A, provided with a central aperture E, a circular metallic track G secured thereto, as shown, and a spring catch I secured to one side of said frame of the revolving seat, provided with a depending pivot bolt operating in the aperture E and provided with a flanged head, having a convexed bearing surface, metallic bearing plates secured to the underside of said seat, adapted to ride upon the track G, depending stops secured to the seat adapted to engage the spring catch I, and a washer disposed on the bolt between the seat and supporting frame having a convexed bearing surface engaging the flanged head of the bolt, all arranged substantially as and for the purpose set forth.

No. 32,608. Cap for Oil Cups, Cans, etc.

(*Couvercle pour les godets à huile, bidons, etc.*)

William J. Jones, Hamilton, Ont., 24th October, 1889; 5 years.

Claim.—1st. The lower section of the cap, threaded at B and D, the flange *c*, the plane *f* and the hole H, substantially as and for the purpose hereinbefore set forth. 2nd. The upper section of the cap, threaded at D, having a recess J, the plane F, the hole I and the flange E, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the two sections, threaded at D, the planes F and G, the holes I and H, the recess J and the flange E, substantially as and for the purpose hereinbefore set forth.

No. 32,609. Snow Plough. (*Charrue à neige.*)

William H. Deadman, Alpena, Mich., U. S., 24th October, 1889; 5 years.

Claim.—1st. In a snow plough, the combination of the truck, the beam support mounted thereon, the two plough sections having the forward ends of their beams adjustable, and having such beams connected with said supports, and the draft connections between said plough sections and the truck, substantially as and for the purposes specified. 2nd. In a snow plough, the combination, with the two ploughs proper, having their beams of frames adjustable close together or apart, of an adjustable separating connection or connections, by which said beams or frames may be held apart, substantially as set forth. 3rd. The combination, with the two ploughs arranged side by side, of an eye or eyes on the inner side of one of such ploughs, and a rod or rods having at one end a hook to enter the said eye, substantially as set forth. 4th. A snow plough, having its bottom or sole piece provided with a strip or strips secured to it and projecting below its under side, substantially as set forth. 5th. In a snow plough, the combination of the beam, the landside, the bottom or sole piece secured to the landside, the point and mould board, the wing hinged at its inner forward end, and the brace rod extended between said wing and the plough frame, and adapted to secure the wing in different positions, substantially as set forth. 6th. In a snow plough, the combination of the truck having the beam support, the two plough sections having the forward ends of the beams connected with such supports, and the draft connections consisting of chains *a* extended between said truck and plough sections and crossed, substantially as set forth. 7th. In a snow plough, the combination, with the two plough sections arranged side by side of the chains G, G, connecting said sections and extended diagonally therebetween, substantially as set forth. 8th. In a snow plough, the combination of the truck, the plough sections connected with and arranged in rear thereof, a rod or bar, as M, connected with such plough sections and forming a bearing for the push bar, and a push bar connected with the truck and having near its rear end a rearwardly facing shoulder arranged to engage the bearing M, substantially as and for the purposes set forth. 9th. In a snow plough, the combination, with the plough beams, of the truck having a bolster D, standards C mounted on said bolster, and a cross-bar connecting such standards and the levers supported on said cross-bar and connected with the beams, substantially as set forth.

No. 32,610. Machine for Carding Cotton. (*Machine à carder le coton.*)

Patrick J. Connelly, New Bedford, Mass., U.S., 26th October, 1889; 5 years.

Claim.—The improved method of feeding a card from a sheet of material wound into a lap, which consists in unwinding from the roll the sheet of material composing it, at a point removed from the point of contact of the lap and the lap feed roll on which it rests, whereby the lap is afforded an opportunity to loosen itself after being acted on by the lap feed-roll, and caused to unwind with regularity and without fleecing, splitting or bunching, as described.

No. 32,611. Machine for Watering Lands. (*Machine à arroser la terre.*)

David A. Keizer and Alexander McQueen, Winnipeg, Man., 26th October, 1889; 5 years.

Claim.—The process or system of radiating liquid from a single point by means of pipes suspended on a motor, which motor is propelled by liquid falling thereon and revolves on a horizontal circular track, which liquid afterwards supplies sprinkling pipes for radiation purposes.

No. 32,612. Anti-Rattler for Thill Couplings. (*Compensateur pour les armons des limonières.*)

The Selle Gear Company, Akron (assignee of Charles Lee and Charley L. Lee, Burbank), Ohio, U.S., 26th October, 1889; 5 years.

Claim.—1st. The combination, in a thill-coupling, having opposite lateral arms, of a semi-elliptic spring, having a curved thill-iron embracing portion, and a Y-shaped bolt having a screw-threaded end and divergent arms adapted to rest upon the upper edge of the lateral arms, substantially as specified. 2nd. The axle 1, in combination with the clip 2, tie-plate 4 and nuts 5 having the lateral arms 6, bolts 7, thill-iron 10 and shank 11, the spring 13 curved as at 14, and bent as at 15, and the Y-shaped bolt 16 having the screw-threaded end 17, arms 18, shoulders 19 and the nut 21, substantially as specified.

No. 32,613. Die for Swaging Drive Screws. (*Filière à vis.*)

The American Screw Company (assignee of Charles D. Rogers), Providence, R.I., U.S., 26th October, 1889; 15 years.

Claim.—A die for rolling screws, provided with diagonal ribs and grooves for impressing a spiral groove into the metal of a screw-blank, and raising the metal at the edges of the groove above the normal surface of the blank to form the threads of a screw, and with plane surfaces between the ribs, corresponding to the normal surface of the blank, to preserve such surface from distortion by the action of the ribs in forming the groove and threads.

No. 32,614. Mode of Forming Screw Threads upon Screws. (*Manière de fileter les vis.*)

The American Screw Company (assignee of Charles D. Rogers), Providence, R.I., U.S., 26th October, 1889; 15 years.

Claim.—1st. The hereinbefore described process of swaging screw-threads upon screw-blanks, which consists, first, in forming the thread on the point portion by forcing reciprocating swaging dies into engagement therewith, next, continuing the forming of the thread upon the shank portion by one or more sections of swaging dies moving to and fro, and finally finishing the thread by the joint action of all the said dies. 2nd. The hereinbefore described process of swaging screw-threads upon screw-blanks, which consists in forming the thread in connected sections, first producing the thread upon the point portion, next continuing the thread therefrom upon the shank in one or more successive sections by swaging, and, finally, subjecting the entire threaded portion to the simultaneous action of the swaging mechanism, to reduce and finish the threads. 3rd. The hereinbefore described process of swaging screw-threads upon screw-blanks, the same consisting in, first, swaging a thread upon the point portion of the mechanically-revolving blank, next, continuing the said thread therefrom upon the cylindrical portion of the shank of the revolving blank by swaging the thread thereon in one or more connected sections, and, finally, subjecting the entire threaded portion to a simultaneous action of the swaging mechanism to finish the threads.

No. 32,615. Process of Manufacturing Ultramarine and Furnace or Oven and Apparatus to be used in this Manufacture. (*Procédé de fabrication de l'ultramarine et fourneau et appareil pour cet objet.*)

Léon J. B. A. J. Bouillet, London, Eng., 26th October, 1889; 5 years.

Claim.—1st. In the manufacture of ultramarine, the method of preparing and roasting the colour producing materials in muffles or retorts, provided with a pipe for carrying all gases generated in said muffles or retorts and supplying oxygen, substantially as set forth. 2nd. For the manufacture of ultramarine, a furnace or oven for reception of muffles, said furnace or oven having a floor of fire tiles, flues thereunder passing transversely beneath the muffles, hollow sides, and an arched roof abutting on said hollow sides, and passages for the circulation of the heated gases, substantially illustrated and described.

No. 32,616. Nail, Bolt, etc. (*Clou, boulon, etc.*)

The American Screw Company, (assignee of Charles D. Rogers) Providence, R.I., U.S., 26th October, 1889; 15 years.

Claim—1st. As an improved article of manufacture, the nail bolt or other headed blank hereinbefore described, having two or more narrow grooves formed in the surface of the under side of the headed portion, said grooves commencing at or near the junction of the shank and head, and extending longitudinally therefrom, substantially in line with the shank and terminating at the edge or periphery of the head, substantially as set forth. 2nd. The headed nail or blank hereinbefore described, having the surface of the under side of the head provided with a series of longitudinally arranged grooves, the bottoms of which form a continuation of the shank's surface and terminate in well-rounded curves, substantially as set forth. 3rd. The improved nail or blank *a* hereinbefore described, having a series of grooves *c* rectangular in cross-section formed in the surface of the under side of the head *h*, and terminating at the edge or periphery of the head, substantially as shown and set forth.

No. 32,617. Wood Screw. (*Vis à bois.*)

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 26th October, 1889; 15 years.

Claim.—A screw having a solid thread raised from the body of the blank by rolling it between dies, which compress laterally the metal to form the thread and force it to expand radially from the blank into grooves in the die, having a form transversely the counterpart of that to be given to the thread.

No. 32,618. Straw Burning Cook Stove. (*Poêle de cuisine à paille.*)

Thomas J. McBride, Winnipeg, Man., (assignee of Godfried Laube, Huron, D.T., U.S.), 26th October, 1889; 5 years.

Claim.—1st. The combination, with a cooking-stove frame having a clear space between its top and bottom, and an opening in the under side of the former leading to the cooking flues, of a removable top burning hay or straw, magazine having an open top adapted to occupy said space, and having its open top register with said opening in the stove top, substantially as described. 2nd. The combination, with the rearwardly extended top and bottom of a cooking stove, having a clear space between the two, of an exit flue opening in the rear end of the stove top, separate pot flues in the top thereof, one of which is provided with an opening on its under side, a damper in said pot flues for determining direct and indirect draft, and a removable top burning hay or straw magazine having an open top adapted to occupy said clear space, and having its open top register with the opening in said pot flue, substantially as described. 3rd. The combination, with the rearwardly extended top and bottom of a cooking stove, having a clear space between the two, of a removable top burning hay or straw magazine, having an open top adapted to occupy said clear space, and have its top register with an opening in the under plate of the stove top, and an exit flue drum provided with a baking oven attachable to the exit opening in the top of the stove, substantially as described.

No. 32,619. Drilling Tool. (*Outil pour forer.*)

Harry S. Gail, Highland Park, Ill., U.S., 26th October, 1889; 5 years.

Claim.—1st. The combination, in a drilling-tool, of a case B, operating-jaws, one or both of which jaws are pivoted in the case B, and provided with an inclined slot, a shank A to which the drill-rod is

attached provided with a notch I, and movable up and down in the case B, and terminating at its lower end in ears or lugs which embrace the jaws over the inclined slot, a bolt passing through the lugs on the drilling-shank, and the slot in the jaw or jaws, and a locking-piece F fitting into the notch in the shank, and preventing it from moving up and down in the case B, whereby the jaws are locked expanded, substantially as described. 2nd. The combination, in a drilling-tool, of a case B, operating-jaws, one or both of which jaws are pivoted in the case B, and provided with an inclined slot, a shank A to which the drill-rod is attached provided with a notch I, and movable up and down in the case B, and terminating at its lower end in ears or lugs which embrace the jaws over the inclined slot, a bolt passing through the lugs on the drilling-shank, and the slot in the jaw or jaws, a locking-piece F fitting into the notch in the shank and preventing it from moving up and down in the case B, and a spring E holding the looking-piece in the notch until positively pressed out of engagement, substantially as described.

No. 32,620. Cash Register and Indicator.

(Régistre et indicateur de monnaie.)

John H. Patterson, Dayton, Ohio, U.S., 26th October, 1889; 5 years.

Claim.—1st. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten cent registering wheel, and a five cent registering wheel, a bar extending transversely across said keys, and arranged to be actuated to different degrees by the operation of different keys, connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across, and arranged to be actuated to the same degree by all of said keys, and connecting mechanism between said five-cent bar and the five-cent registering wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 2nd. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across said keys and arranged to be actuated to different degrees by the operation of different keys, a dog actuated by said bar and engaging with the ratchet of the ten-cent wheel, a five-cent bar extending transversely across and arranged to be actuated to the same degree by all of said keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel and the five on the five-cent wheel, substantially as described, 3rd. In a cash register and indicator, the combination of a series of operating keys indicating the multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a vertically-vibrating bar extending transversely across said keys, and arranged to be actuated to different degrees by the operation of different keys, connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated to the same degree by all of said keys, and connecting mechanism between said five-cent bar and the five-cent registering wheel, whereby, upon operating any one of of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 4th. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, each provided with a ratchet, a vertically-vibrating bar extending transversely across said keys, and arranged to be actuated to different degrees by the operation of different keys, a dog actuated by said bar and engaging with the ratchet of the ten-cent wheel, a five-cent bar extending transversely across and arranged to be actuated to the same degree by all of said keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 5th. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a bar extending transversely across said keys and actuated thereby, the portions of said bar with which the different keys engage being arranged at different distances from said keys, connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by all of said keys, and connecting mechanism between said five-cent bar and the five cent registering wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 6th. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across said keys and actuated thereby, the portions of said bar with which the different keys engage being arranged at different distances from said keys, a dog actuated by said bar and engaged with the ratchet of the ten-cent wheel, a five-cent bar extending transversely across and arranged to be actuated by all of said keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 7th. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a bar extending transversely across and inclined relatively to the plane of said keys, connecting mechanism between said bar and ten-cent registering wheel, a five-cent bar extending transversely across and actuated by all of said keys, and connecting mechanism between said five-cent bar and five-cent registering wheel, whereby, upon registering any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described, 8th. In a cash register and indicator, the combination of a series of operating keys indicating odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across and inclined relatively to the plane of said keys, a dog actuated by said bar and engaging with the ratchet of the ten-cent registering wheel, a five-cent bar extending transversely across and actuated by all of said keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent registering wheel, whereby, upon operating any one of said keys, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 9th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a bar extending transversely across said keys and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key and the next lower even-numbered key, connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each odd-numbered key, and connecting mechanism between said five-cent bar and the five-cent registering wheel, whereby, upon operating an even-numbered key, its value is registered on the ten-cent wheel, and whereby, upon operating an odd-numbered key, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 10th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across said keys and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key, and the next lower even-numbered key, a dog actuated by said bar and engaging with the ratchet of ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each of the odd-numbered keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent registering wheels, whereby, upon operating an even-numbered key, its value is registered on the ten-cent wheel, and whereby, upon operating an odd-numbered key, the tens of its value are registered on the ten-cent wheel, and ths five on the five-cent wheel, substantially as described. 11th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a vertically-vibrating bar extending transversely across said keys, and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key, and the lower even-numbered key connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each of the odd-numbered keys, and connecting mechanism between said five-cent bar and five-cent registering wheel, whereby, upon operating an even-numbered key, its value is registered on the ten-cent wheel, and whereby, upon operating an odd-numbered key, the tens of its value are registered on the ten-cent wheel, and the five on the five-cent wheel, substantially as described. 12th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a ten-cent registering wheel, and a five-cent registering wheel, a bar extending transversely across said keys and actuated thereby, the portions of said bar with which the different odd-numbered keys engage, being arranged at different distances from said odd-numbered keys, and the portions with which the different even-numbered keys engage being arranged at different distances from said even-numbered keys, but the portions with which each odd-numbered key and the next lower even-numbered key engage being arranged at the same distance from said keys, connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each of the odd-numbered keys, and connecting mechanism between said five-cent bar and the five-cent registering wheel, whereby, upon operating an even-numbered key, its value is registered on the ten-cent wheel, and whereby, upon operating an odd-numbered key, the tens of its value are registered on the ten-cent wheel and the five on the five-cent wheel, substantially as described. 13th. In a cash register and indicator, the combination of a series of operating keys, indicating even and odd multiples of five above the first power, a ten-cent registering wheel and a five-cent registering wheel, a bar extending transversely across and inclined relatively to the plane of said keys, and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key, and the next lower even-numbered key connecting mechanism between said bar and the ten-cent registering wheel, a five-cent bar extending transversely across and inclined relatively to the plane of said keys, and actuated by each of the odd-numbered keys, and connecting mechanism between said five-cent bar and the five-cent registering wheel, whereby, upon operating an even-numbered key, its value is registered on the ten-cent wheel, and whereby, upon operating an odd-numbered key, the tens of its value are registered on the ten-cent wheel and the five on the five-cent wheel, substantially as described. 14th. In a cash register and indicator, the combination of a series of operating keys of different values, a registering wheel, a bar extending transversely across said keys and arranged to be actuated to different degrees by keys of different values, and connecting mechanism between said bar and registering wheel, whereby, upon operating any key, said bar actuates the registering wheel to register the value of such key, substantially as and for the purpose described. 15th. In a cash register and indicator, the combination of a series of operating keys of different values, a registering wheel, a bar extending transversely across the keys and actuated thereby, the portions of said bar with which the different keys engage being arranged at different distances from said keys, and connecting mechanism between said bar and registering wheel, whereby, upon operating any key, said bar actuates the registering wheel to register the value of such key, substantially as and for the purpose described. 16th. In a cash register and indicator, the combination of a series of operating keys of different values, a

registering wheel, a bar extending transversely across and inclined relatively to the plane of said keys, and connecting mechanism between said bar and registering wheels, whereby, upon operating any key, said bar actuates the registering wheel to register the value of such key, substantially as and for the purpose described. 17th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a series of tablet-rods and indicating tablets actuated by said keys, a ten-cent registering wheel and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across said keys and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key and the next lower even-numbered key, a dog actuated by said bar and engaging with the ratchet of the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each of the odd-numbered keys, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent registering wheel, substantially as and for the purpose described. 18th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a series of tablet-rods and indicating-tablets actuated by said keys, a ten-cent registering wheel and a five-cent registering wheel, each provided with a ratchet, a vertically-vibrating bar extending transversely across said key and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key and the next lower even-numbered key, a dog actuated by said bar and engaging with the ratchet of the ten-cent wheel, a five cent bar extending transversely across and arranged to be actuated by each odd-numbered key, and a dog actuated by said bar and engaging with the ratchet of the ten-cent wheel, a five-cent bar extending transversely across and arranged to be actuated by each of the odd-numbered keys, and a dog actuated by said five-cent bar, and engaging with the ratchet of the five-cent registering wheel, substantially as and for the purpose described. 19th. In a cash register and indicator, the combination of a series of operating keys indicating even and odd multiples of five above the first power, a series of tablet-rods and indicating-tablets actuated by said keys, a ten-cent registering wheel and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across said keys and actuated thereby, the portions of said bar with which the different odd-numbered keys engage, being arranged at different distances from said odd-numbered keys, and the portions with which the different even-numbered keys engage being arranged at different distances from said even-numbered keys, but the portions with which each odd-numbered key and the next lower even-numbered key engage being arranged at the same distance from said keys, a dog actuated by said bar and engaging with the ratchet of the ten-cent registering wheel, a five-cent bar extending transversely across and arranged to be actuated by each odd-numbered key, and a dog actuated by said five-cent bar and engaging with the ratchet of the five-cent registering wheel, substantially as and for the purpose described. 20th. In a cash register and indicator, the combination of a series of operating keys, indicating even and odd multiples of five above the first power, a series of tablet-rods and indicating-tablets actuated by said keys, a ten-cent registering wheel and a five-cent registering wheel, each provided with a ratchet, a bar extending transversely across and inclined relatively to the plane of said keys and arranged to be actuated to different degrees by the different odd-numbered keys, and to different degrees by the different even-numbered keys, but to the same degree by each odd-numbered key and the next lower even-numbered key, a dog actuated by said bar and engaging with the ratchet of the ten-cent registering wheel, a five-cent bar extending transversely across and actuated by each of the odd-numbered keys, and a dog actuated by said five-cent bar, and engaging with the ratchet of the five-cent registering wheel, substantially as and for the purpose described. 21st. In a cash register and indicator, the combination of a series of operating keys of different values, a registering wheel provided with a ratchet, a bar extending transversely across and inclined relatively to the plane of said keys, and a dog actuated by said bar and engaging the ratchet of the registering wheel, whereby, upon operating any key, said bar actuates said dog to turn the registering wheel sufficiently to register the value of such key, substantially as described.

No. 32,621. Cash Register and Indicator.

(*Régistre et indicateur de monnaie.*)

John H. Patterson, Dayton, Ohio, U.S., 26th October, 1889; 5 years.

Claim.—1st. In a cash register and indicator, the combination of a series of operating keys of fixed value, pivoted on a horizontal shaft at the front of the machine, a horizontal supporting bar extending transversely across the machine in rear of the rear ends of the keys, and provided with a series of vertical slots, each having an inclined wall and supporting shoulder, and a series of vertical tablet rods arranged in guides and actuated by said operating keys, and carrying at their upper ends indicating tablets, and provided at their lower ends with projections which extend through the slots in said supporting bar, substantially as and for the purpose described. 2nd. In a cash register and indicator, the combination of a series of operation keys of fixed values, pivoted on a horizontal shaft at the front of the machine, and a registering mechanism operated by said keys to register the value thereof, a horizontal supporting bar extending transversely across the machine in rear of the rear ends of the keys, and provided with a series of vertical slots, each having an inclined wall and supporting shoulder, and a series of vertical tablet rods arranged in guides and actuated by said operating keys, and carrying at their upper ends indicating tablets, and provided at their lower ends with projections which extend through the slots in said supporting bar, substantially as and for the purpose described. 3rd. In a cash register and indicator, the combination of a series of operating keys of fixed values, pivoted on a horizontal shaft at the front of the machine, a horizontal supporting bar extending transversely across the machine in rear of the rear ends of the keys, and provided with a series of vertical slots, each having an inclined wall and supporting shoulder, and a series of vertical tablet rods arranged in guides, carrying at their upper ends indicating tablets, and provided at their lower ends with projections, which extend through the slots in said supporting bar, and are engaged by the rear ends of the pivoted operating keys, substantially as and for the purpose described. 4th. In a cash register and indicator, the combination of a series of operating keys of fixed values, pivoted on a horizontal shaft at the front of the machine, a series of registering wheels operated by said keys to register the value thereof, a horizontal supporting bar extending transversely across the machine in rear of the rear ends of the keys and provided with a series of vertical slots, each having an inclined wall and supporting shoulder, and a series of vertical tablet rods arranged in guides, carrying at their upper ends indicating tablets, and provided at their lower ends with projections which extend through the slots in said supporting bar, and are engaged by the rear ends of the pivoted operating keys, substantially as and for the purpose described. 5th. In a cash register and indicator, the combination of the operating keys E, pivoted on the shaft F, slotted supporting bar J extending transversely across the machine in rear of the rear ends of said keys, and the vertical tablets Q carrying at their upper ends the indicating tablets S, and provided at their lower ends with the projections *h* extending through the slots in the bar T, substantially as and for the purpose described. 6th. In a cash register and indicator, the combination of the operating keys E pivoted on the shaft F, and provided with the actuated dogs J, registering wheels H, slotted supporting bar T extending transversely across the machine in rear of the rear ends of the keys, and the vertical tablet rods Q carrying at their upper ends the indicating tablets S, and provided at their lower ends with the projections *h* extending through the slots in the bar T, substantially as and for the purpose described. 7th. In a cash register and indicator, having a series of operating keys of fixed values actuating a series of indicating tablets, and a registering mechanism to indicate and register the cash sales corresponding to the values of said keys, the combination of a supplemental operating key, having on its front end a button bearing the sign "Paid in," and indicating tablet actuated thereby, and bearing a corresponding sign, and a registering wheel operated by said supplemental key and bearing on its periphery a series of numbers in multiples of one, said supplemental key, tablet and registering wheel being designed and arranged to indicate each receipt of money on account and to register the total number of such receipts, substantially as described. 8th. In a cash register and indicator, having a series of operating keys of fixed values actuating a series of indicating tablets, and a registering mechanism to indicate and register the cash sales corresponding to the value of said keys, the combination of a supplemental operating key, having on its front end a button bearing the sign "Paid out," an indicating tablet actuated thereby, and bearing a corresponding sign, and a registering wheel operated by said supplemental key and bearing on its periphery a series of numbers in multiples of one, said supplemental key, tablet and registering wheel being designed and arranged to indicate each payment of money out on account and to register the total number of such payments, substantially as described. 9th. In a cash register and indicator, having a series of operating keys of fixed values actuating a series of indicating tablets, and a registering mechanism to indicate and register the cash sales corresponding to the values of said keys, the combination of a supplemental operating key, having on its front end a button bearing the sign "Charge," an indicating tablet actuated thereby, and bearing a corresponding sign, and a registering wheel operated by said supplemental key, and bearing on its periphery a series of numbers in multiples of one, said supplemental key, tablet and registering wheel being designed and arranged to indicate each credit sale, and to register the total number of such sales, substantially as described. 10th. In a cash register and indicator, having a series of operating keys of fixed values actuating a series of indicating tablets, and a registering mechanism to indicate and register the cash sales corresponding to the values of said keys, the combination of a supplemental operating key, having on its front end a button bearing the sign "Change," an indicating tablet actuated thereby, and bearing a corresponding sign, and a registering wheel operated by said supplemental key and bearing on its periphery a series of numbers in multiples of one, said supplemental key, tablet and registering wheel being designed and arranged to indicate each operation of the machine, for the purpose of making change and to register the total number of such operations, substantially as described. 11th. In a cash register and indicator, having a series of operating keys of fixed values actuating a series of indicating tablets, and registering mechanism to indicate and register the cash sales corresponding to the values of the keys, the combination of a supplemental operating key, having on its front end a button-bearing the sign "Check," an indicating tablet actuated thereby, and bearing a corresponding sign, and a registering wheel operated by said supplemental key and bearing on its periphery a series of numbers in multiples of one, said supplemental key, tablet and registering wheel being designed and arranged to indicate each operation of the machine, for the purpose for which such "Check" key may be used, and to register the total number of such operations, substantially as and for the purpose described.

No. 32,622. Means for Securing Corks and Stoppers in Bottles. (*Ligature de bouchon de bouteille.*)

Auguste E. H. Lozé, Liverpool, Eng., 26th October, 1889; 5 years.

Claim.—1st. Wire clamps consisting of two loops free at one end and united at the other, for the purpose set forth. 2nd. The combination of a wire clamp with a key for securing the said clamp, substantially as set forth.

No. 32,623. Penholder with a Movable Device (tub) for Preventing the Fingers from being Spotted with Ink. (*Porte-plume avec appareil mobile (cuvette) pour empêcher les doigts de se tacher.*)

Ferdinand Knade, Breslau, Germany, 26th October, 1889; 5 years.

Claim.—In a penholder, the combination of a tubular end containing a spiral spring, with a cylinder or sleeve situated on said tubular part, and having a pin passing through a slot therein, to act and be acted upon by said spring, substantially as described.

No. 32,624. Carriage Tongue Support.

(*Support de timon de voiture.*)

William W. Mayne, Huron, D.T., U.S., 26th October, 1889; 5 years.

Claim.—1st. The combination, in carriage-tongue supports, of the shank 9 provided with the hook 10, and the forward arm 11 having half a hinge-joint 12 formed on it, the brace 13 provided with half a hinge 12 and with a longitudinal bore, and a binding screw 17, a forked extension brace 16 fittted to the bore of the brace 13, and a binding screw 15 adapted to secure the brace 13 rigidly to the arm 11, substantially as shown and described. 2nd. The combination of the shank 9 provided with the hook 10, and the arm 11, the brace 13 hinged to the arm 11 and longitudinally bored and provided with a stud 20, the forked extension brace 16 fitted to the said bore in the brace 13, the binding screw 17 fitted in the brace 13, and the stay-bar 19 hung at one end to the shank 9 and notched to engage the said stud, substantially as shown and described. 3rd. The combination of the shank 9 provided with the hook 10 and arm 11, the brace 13 hinged to said arm and provided with a forked adjustable extension 16, and the stay 21 permanently connecting the arm 11, and shank 9, substantially as shown and described. 4th. The combination of the shank 9 provided with the hook 10 and arm 11 the brace 13 hinged to the said arm, and a curved or flexible support adapted to connect the brace 13 with the vertical portion of the shank, substantially as shown and described.

No. 32,625. Crupper for harness.

(*Croupière de harnais.*)

Lewis S. Ellis, Eminence, Ky., U.S., 26th October, 1889; 5 years.

Claim.—1st. In a crupper, the combination, with a bridge-piece and means of attachment to a harness, of a pair of curved brace-plates pivoted to the bridge-piece, ribs secured to the brace-plates, and straps or similar devices for confining the tail of an animal in place in the ribs, substantially as set forth. 2nd. In a crupper, the combination, with a bridge-piece hollowed out, padded and covered, substantially as described, and a branched strap by which the bridge-piece is fastened to a harness, of a pair of split bolts, brace-plates pivoted thereto, slotted U-shaped ribs pivoted to said brace-plates, and straps extending around the ribs and through the slots, substantially as set forth.

No. 32,626. Creamer. (*Crêmeuse.*)

Henry A. Booker and Charles Booker, Stouffville, Ont., 26th October, 1889; 5 years.

Claim.—1st. In a creamer, the combination of a box A having a lining B, the reservoirs C with their flanged covers D, ventilated at J, the circular plates F with glass G, and the taps H and I, substantially as and for the purpose hereinbefore set forth. 2nd In a creamer, the box A having an interior box or lining B, one or more reservoirs C, the flanged covers D, ventilators J, the brace C^1, the circular plates F, the taps H and I, the overflow pipe O, the hinged lid K, with the ventilations L, the legs N, the handles M, and the glasses G in position, as described, all formed, arranged, and combined substantially as set forth.

No. 32,627. Car Spring. (*Ressort de char.*)

William Bellingham, Montreal, Que., 28th October, 1889; 5 years.

Claim. A car spring consisting of a nest of concentric coils graduated in diameter, weight of bar and length of coil, so that the outer coil shall be the longest and weakest, and the inner coil the shortest and strongest, substantially as and for the purposes described.

No. 32,628. Water Heater. (*Calorifère à eau.*)

George C. Blackmore, Newark, N.J., U.S., 28th October, 1889; 5 years.

Claim.—1st. A hot-water heater provided with a fire-space at the top, two return flues leading downwardly therefrom, a main flue interposed between, and connected at the bottom with such return-flues and leading to the chimney, the said flues being inclosed within the water-space of the heater, and an opening between the said fire-space and the main flue having a damper operated from without the heater to open and close the same, as and for the purpose set forth. 2nd. A hot-water heater comprising a series of parallel sections having inlet and outlet apertures and arranged vertically, each section being provided on one side with apertures at both ends, and on the other side with apertures at one end only, the alternate sections having the apertures at opposite ends on the side containing apertures at one end only, and the sections intermediate thereto having apertures on their upper and lower sides corresponding in position and number with those in the sides adjacent thereto of the sections directly above and below the same, the top and bottom sections having apertures only on the sides in contact with the adjacent sections, and provided respectively with supply and distributing pipes, as and for the purpose set forth.

No. 32,629. Steam or Hot Water Heater.

(*Calorifère à vapeur ou à eau.*)

Robert W. King, Georgetown, Ont., 28th October, 1889; 5 years.

Claim.—1st. A sectional steam or hot water radiator in which the sections are connected by means of a nipple rolled or expanded, substantially as described and for the purpose specified. 2nd. A sectional steam or hot water radiator in which the sections are connected in two or more places, one or more of the said connections being made by means of a nipple rolled or expanded, substantially as described and for the purpose specified. 3rd. In joining the sections of sectional radiators, sectional boilers or other similar articles, the use in the forming said connection of a rolled or expanded nipple, though other means for securing additional solidity may be employed in connection with said rolled or expanded nipple, substantially as described and for the purpose specified. 4th. In connection with a rolled or expanded dipple used for joining together the sections of sectional radiators, sectional steam boilers or other similar articles, the use of a number of ribs formed on the interior surface of said nipple, substantially as described and for the purpose specified. 5th. A sectional steam or hot water radiator or boiler having one or more ribs or grooves formed on or in the surface of the section, where in contact with the connecting nipple, said sections being connected by means of a nipple rolled or expanded around or into the said ribs or grooves, substantially as described and for the purpose specified. 6th. A sectional steam or hot water radiator or boiler having one or more ribs or grooves formed on or in the surface of the sections, where in contact with the connecting nipple, said sections being connected by means of a nipple rolled or expanded around or into the said ribs or grooves, corresponding ribs or grooves being formed on or in the opposite surface of the nipple, substantially as described and for the purpose specified.

No. 32,630. Key Board. (*Clavier.*)

Augustus Newell, Chicago, Ill., U.S., 28th October, 1889; 5 years.

Claim.—1st. The method of making key-boards, which method consists in dressing a wooden blank to the size required for forming a set of keys, then forming into said blank the back and front mortises, the latter extending through the upper surface of said blank, then applying a sheet of wood or similar material over the front portion of the upper surface of said blank, whereby said front mortises are covered and a continuous surface is formed for the application of the top sheet of celluloid, then applying the front and top strips of celluloid to said blank, then sawing the blank into keys, substantially as shown and described. 2nd. A key-board blank having the front mortises extending upward through its surface, and a sheet of wood or similar material applied over said mortises and that portion of the upper surface of the blank which is to be covered by the celluloid, substantially as shown and described. 3rd. A key for a key-board having back and front mortises opening upward through the body of the key, a sheet of wood or similar material applied over said front mortise and that portion of the upper surface of the key which is to be covered by celluloid, and a strip of celluloid applied over the upper surface of said sheet, substantially as shown and described. 4th. A key for a key-board having back and front mortises, the front mortise opening upward through the body of the key, a sheet of wood or similar material applied over said front mortise and that portion of the upper surface of the key which is to be covered by celluloid, and a strip of celluloid applied over the upper surface of said sheet, and a front strip of celluloid applied over the outer ends of said key, substantially as shown and described.

No. 32,631. Draw Bar. (*Barre d'attelage.*)

John Turner, West Detroit, Mich., U.S., 28th October, 1889; 5 years.

Claim.—In combination with a draw-bar of usual construction and provided with a rearwardly projecting shank, of a hollow cast metal bearing substantially rectangular in shape and provided with a central longitudinal bearing for the shank of the draw-bar, and with vertical ribs upon its sides, of draft timbers recessed upon the inner sides corresponding to the sides of the bearing block, of transverse bolts securing said bearing block between said draft timbers, and of draft and buffer springs secured upon opposite ends of the bearing block on the shank of the draw-bar, substantially as described.

No. 32,632. Car Coupling. (*Attelage de chars*)

Henry H. Everett, Passaic, N.J., U.S., 28th October, 1889; 5 years.

Claim.—1st. The combination, with the draw-head having a tumbler pivoted therein and abutting against the inside of the head, at the front of a cam disposed in a slot in the head beneath the tumbler, and adapted to lift the tumbler and hold the same poised on the end of such toe while the coupling and uncoupling take place. 2nd. In combination with the draw-head having the tumbler pivoted therein, and the slot in the head beneath, the tumbler, the double-action cam-toe affixed to a rock-shaft and carrying an arm G placed outside the draw-head, and operated to the right or left according to circumstances, whereby the tumbler may be disengaged by swinging up the cam-toe either from the front or rear as the case may be, as set forth. 3rd. In combination with the double acting cam-toe, the guide I on the draw-head, the arm G made fast to the rock-shaft carrying the cam-toe, and the chain H attached to the arm G and passing through said guide.

No. 32,633. Horizontal Drum and Radiator.

(*Poêle sourd horizontal et calorifère.*)

Robert O. Dobbin, Breslau, Ont., 28th October, 1889; 5 years.

Claim.—The damper C in combination with the heads B and G, the pipes E, E, E, E, etc., and the pipes I and D causing the circulation and escape of the smoke, hot air and gases, substantially as above set forth.

No. 32,634. Type Writing Machine.

(*Graphotype*)

Mortimer G. Merritt and Charles E. Merritt, Springfield, Mass., U.S., 28th October, 1889; 5 years.

Claim.—1st. In a type-writing machine, the combination, with a guide-way, of a frame or holder containing a row of independent

type and adapted to be moved back and forth in said guide-way. 2nd. In a type-writing machine, the combination, with a guide-way, of a type carrier having a row of independent type and a type-ejector. 3rd. In a type-writing machine, the combination of a type-carrier, having a row of independent type, a type-ejector and a type-guide overhanging the type at the impression point. 4th. In a type-writing machine, the combination, with a guide-way and a flange, of a type-carrier having a row of type, each of which is provided with a groove or shoulder. 5th. In a type-writing machine, the combination, with a guide-way, cut away, as at 43, of a type-carrier, having a row of independent type, each provided with a groove or shoulder, and a type-ejector, provided with a finger or lug engaging the groove or shoulder of the type. 6th. In a type-writing machine, the combination, with a guide-way, a type-carrier having the independent type, a sliding type-ejector and a lever for operating the type-ejector. 7th. In a type-writing machine, the combination of a type-carrier, having a row of independent type, a universal bar connected with a carriage feed mechanism, a type-ejector and a lever for operating the same, extending out and beneath the universal bar. 8th. In a type-writing machine, the combination of a type-carrier, having a row of independent type and provided with a handle, a universal bar connected with the carriage feed mechanism and arranged beneath said handle, a type-ejector and a lever for operating the same extending out and beneath the universal bar. 9th. In a type-writing machine, the combination of a type-carrier, having a row of independent type, and provided with a handle, of a type-ejector and an index or holding means for maintaining the type-carrier in position during the ejection of the type. 10th. In a type-writing machine, the combination of a guide-way, a type-carrier having independent type, an overhanging type-guide and inking-rollers, supported at each side of said type-guide. 11th. In a type-writing machine, the combination, with the paper carriage and its feed mechanism, of the independent space-key 105, having a pin and connecting with the universal bar lever 102. 12th. In a type-writing machine, the combination, with a rail, having a groove 4, of a paper carriage provided with yokes 76, having studs 77 engaging with said groove. 13th. In a type-writing machine, the combination, with a platen, of a combined paper table and pressure plate. 14th. In a type-writing machine, the combination, with a platen, of a combined paper table and pressure plate, the rod 82 and the springs 86. 15th. In a type-writing machine, a type-carrier, made box-like and having a row of type, each provided with a groove or shoulder extending above or beyond the wall of the carrier. 16th. In a type-writing machine, a type carrier, containing a row of type, each type of the row having its body grooved at the same locality, so as to present a continuous groove along the entire row. 17th. In a type-writing machine, a box-like type-carrier, containing independent type of the several kinds or classes described and arranged in the manner set forth. 18th. In a type-writing machine, the combination of a movable row of independent type and a shiftable or movable key-board. 19th. In a type-writing machine, the combination of a movable row of independent type and a shiftable or movable index bar or plate. 20th. In a type-writing machine, the combination of a movable row of independent type and a combined shiftable or movable index plate and key-board. 21st. In a type-writing machine, the combination of a reciprocatory type-carrier containing a row of type, and provided with a handle, a movable or shifting index bar or plate, having a less number of slots or depressions than the aggregate number of type, and a key for engaging said slots or depressions. 22nd In a type-writing machine, the combination of a reciprocatory type-carrier containing a row of type, a movable or shiftable index bar or plate, a locking key and a movable or shifting key-board, the latter having twice as many characters as the index bar or plate has, notches or depressions, and the type-carrier having three times as many type as there are notches or depressions in the index bar or plate. 23rd. In a type-writing machine, the combination of a reciprocatory type-carrier, containing a row of type, and a key-board adapted to be shifted to the right and left of its normal position. 24th. In a type-writing machine, the combination of a reciprocatory type-carrier containing a row of type, a locking key and an index plate or bar adapted to be shifted to the right and left of its normal position. 25th. In a type-writing machine, as a shifting means, the combination of a bar or plate having an inclined wall with an operating lever provided with a pin. 26th. In a type-writing machine, the combination of a reciprocatory type-carrier, containing a row of type and provided with a handle, a key-board, and means, substantially as described, for shifting the key-board from and back to its normal position. 27th. In a type-writing machine, the combination of a reciprocatory type-carrier, containing a row of type and provided with a handle, an index bar or plate, a locking key, a key-board, and means for simultaneously shifting the index-bar and the key-board from and back to their normal position.

No. 32,635. Safety Steam Generator.

(Générateur de vapeur de sûreté.)

Samuel W. Ludlow, Madisonville, Ohio, U. S., 28th October, 1889; 5 years.

Claim.—1st. A steam generator within an hermetically sealed vessel exposed to direct heat, and surrounded by a fluid in the hermetically sealed vessel, through which the heat is transmitted, substantially as described. 2nd. A steam generator, consisting of an outer vessel, hermetically sealed and containing a heat transmitting fluid, an inner vessel containing a vaporizable fluid and surrounded by the fluid in the outer vessel, substantially as described. 3rd. A steam generator, consisting of an outer vessel hermetically sealed, having a series of fire tubes extending through the body thereof, an inner vessel provided with flues, and a vaporizable fluid in which the inner vessel is enveloped, substantially as described. 4th. A steam generator, consisting of an outer vessel, hermetically sealed, and containing vaporizable heat transmitting fluid, and an inner vessel for generating steam as a motor or other power epveloped by said fluid, substantially as described.

No. 32,636. Combined Seed Sower and Clod Crusher. (*Semoir-brise-motte.*)

John W. Self, Bowling Green, Ky., U.S., 28th October, 1889; 5 years.

Claim.—1st. The frame mounted on the axle, and having the side bars B and the parallel cross-bars C, E, and the tongue with its rear end under the centres of said cross-bars, in combination with a detachable hopper rectangular in form and adapted to be placed on the rear end of the tongue, and arranged between the bars B and the cross-bars C, E, substantially as described. 2nd. The combination, with the frame A, having the pins or studs T, of the clod cutter, the hook link connecting the front end thereof to the frame, the vertical arms R, having the vertical slots S engaging the pins or studs T, and the lever or rod to raise and lower the rear end of the said frame substantially as described. 3rd. The combination with the frame A, having the keeper B^1, of the harrow frame having the bail at its front end provided with the hook-arm to engage said keeper, the link-arm C^1 pivotally connected to, and depending from the frame A, and having their lower end pivotally connected to the sides of the harrow frame, near the front side of the latter, the hand lever pivoted on the frame, and the rod connecting the same to the rear side of the harrow frame, substantially as described.

No. 32,637. Plant Protector.

(Tuteur de plante.)

Ira E. Sherman and William T. Crouch, Sidney, N. Y., U. S., 28th October, 1889; 5 years.

Claim.—A plant protector, consisting of two rectangular end frames covered with cloth secured thereto, said end frames being connected by cloth secured to their tops and vertical edges by cloth creating the top and sides of the protector, and removable stretches inserted between the upper ends of the uprights of the end frames, substantially as described.

No. 32,638. Heat Expanding Block with Cross Intermediate Blocks of Different Metals. (*Bloc d'expansion de la chaleur avec blocs intermédiaires transversaux de métal différent.*)

Joseph Wach, Hochst a Main, Germany, 28th October, 1889; 5 years

Claim.—In a thermostat or thermal expansion apparatus, the combination and arrangement of one or more elements E with two bent rods or strips e^3, e^3, substantially as described.

No 32,639. Telegraph Receiver.

(Récepteur télégraphique.)

Charles Selden, Baltimore, Md., U.S., 28th October, 1889; 5 years.

Claim.—1st. In a tone or harmonic telegraph, the combination, with a tuning fork operated by the main line currents, of an independent set of adjustable contacts included in a local circuit, whereby the contacts may be adjusted, so as to be separated only when the fork is vibrated to its fullest amplitude, substantially as described. 2nd. In a tone or harmonic telegraph, the combination, with a tuning fork operated by the main current, of an independent set of contacts in a local circuit, a support for the contacts and adjusting devices for said support, substantially as described. 3rd. In a tone or harmonic telegraph, the combination of a tuning fork operated by the main current, of a support carrying a fixed contact piece, a movable contact piece also mounted in the support, a local circuit, including the contacts, and adjusting screws for the contacts, substantially as described. 4th. In a tone or harmonic telegraph, the combination, with a tuning fork operated by the main line current, of an independent set of adjustable contacts included in a local circuit, and a signal-receiving instrument in the circuit, substantially as described. 5th. In a tone or harmonic telegraph, the combination, with a tuning fork and an independent set of contacts operated thereby, of a circuit, including the contacts in one branch, and an automatic receiving instrument in another branch, substantially as described. 6th. In a tone or harmonic telegraph, the combination of a tuning fork operated by the main line currents, a set of contacts in a local circuit operated by the fork, an automatic receiving style or finger in the local circuit, a second style or finger in a secondary circuit to the primary, substantially as described. 7th. In a tone or harmonic telegraph, the combination, with a tuning fork having a certain rate of vibration and controlled by the main line currents, of an independent set of contact devices controlling the local receiving instruments, and adjusting devices whereby the contacts may be arranged, so as to be operated only when the fork vibrates normally, substantially as described.

No. 32,640. Combined Bucket Bail and Lid Fastener. (*Anse de seau et ligature de couvercle combinés.*)

John M. Stukes and Oliver P. Reid, Laredo, Texas, U.S., 28th October, 1889; 5 years.

Claim.—1st. The combination, with the bucket and the ears of the wires D pivotally connected to said ears, the links pivotally connected to said wires, the cross-wire F connecting the said links and the bail loosely connected with the ends of the said wire F, substantially as shown and described. 2nd. The combination, with the bucket and its cover, of the ears on the bucket, the wires D having eyes pivotally connected with the ears, the links pivotally connected with the wires, the cross locking-wire F having eyes at its ends engaging the links, and the bail, having at its ends eyes connected with the eyes of the cross-wire F, substantially as shown and described, and for the purpose specified.

No. 32,641. Shoe Lacing Hook.

(Agrafe de lacet de chaussure.)

William H. Smidt, New York, N. Y., U. S., 28th October, 1889; 5 years.

Claim.—1st. The combination, with the head perforated, as shown, of the external jacket of pyroxyline material applied to said head above and below, and extending through the perforation, substantially as set forth. 2nd. The head, having a perforation *a*, in combination with the jacket B enveloping said head above and below, and united through said perforation, substantially as shown and set forth.

No. 32,642. Shoe Lacing Hook.

(Agrafe de lacet de chaussure.)

William H. Smidt, New York, N. Y., U. S., 28th October, 1889; 5 years.

Claim—1st. The hook, having the stock of its head perforated and thrown up, in combination with the external jacket of plastic material, as pyroxyline, surrounding said stock, substantially as set forth. 2nd. The hook, having the eyelet thrown up from the top, and an exterior jacket of pyroxyline material compressed on said top and clinched thereto by said eyelet, substantially as shown and described.

No. 32,643. Pen. *(Plume.)*

John J. Loud, Weymouth, Mass., U.S., 28th October, 1889; 5 years.

Claim.—1st. A pen, having a spheriodal marking point, substantially as described. 2nd. A pen, having a marking sphere capable of revolving in all directions, substantially as and for the purposes described. 3rd. In a fountain pen, a marking sphere, in combination with a spring and a tube having a contracted mouth, whereby the sphere projects from the tube, substantially as and for the purposes described. 4th. In a fountain pen, a tube having a contracted mouth, in combination with a spring, a marking sphere and one or more anti-friction balls, substantially as described. 5th. A pen, having a marking sphere, in combination with one or more anti-friction balls, substantially as described. 6th. In a fountain pen, a tube having a contracted mouth, in combination with a marking sphere, a screw, a spring and a centrally guided rod provided with suitable end bearings, whereby the marking sphere may be closed tightly into the contracted mouth, substantially as and for the purposes described. 7th. In a fountain pen, a tube having a contracted mouth and a tapped screw-cap, in combination with an inner screw, a marking sphere, a spring and a centrally guided rod, provided with suitable end bearings, substantially as described. 8th. In a fountain pen, a tube having a contracted mouth, in combination with a marking sphere, one or more anti-friction balls, a screw, a spring and a centrally-guided rod, substantially as and for the purposes described. 9th. In a fountain pen, a tube, having a contracted mouth, in combination with a marking sphere, a spring, a centrally guided rod provided with suitable end bearings, and a screw provided with an air-hole, whereby, by turning the screw against the centrally guided rod, both the air-hole is stopped and the marking sphere closed tightly into the contracted mouth, substantially as and for the purposes described. 10th. A pen, consisting of a tube A, having the contracted mouth *f* and the tapped screw-cap B, in combination, with the inner screw C, the marking sphere L, the anti-friction balls K, the spring S and the centrally-guided rod G, provided with the end-bearings *g* and H, all arranged and operated substantially as and for the purposes described. 11th. In a pen, substantially as described, a centrally-guided rod flared at one end and provided with a recess, and having at the other end a conical bearing cut away at intervals along its outer edge, substantially as and for the purposes described. 12th In a pen, substantially as described, a rod provided with guides *a*, a^1, and having at one end the flared recessed portion *g*, and at the other end the conical bearing H cut away at intervals along its outer edge, whereby it touches the inner surface of the cylinder at the portions *h*, substantially as and for the purposes described. 13th. A fountain pen, consisting of a tube, having a contracted mouth and a tapped screw cap, in combination with an inner screw, a marking sphere, anti-friction balls, a spring and a rod provided with guides *a*, a^1, and having at one end a flared recessed bearing *g*, and at the other the conical bearing H cut away at intervals, all arranged and operated substantially as and for the purposes described.

No. 32,644. Type Founding Machine.

(Machine à couler les caractères.)

Francis Keehn, Milwaukee, Wis., U.S., 29th October, 1889; 5 years.

Claim.—1st. In a type founding machine having a mould chamber, two stationary blocks (17 and 18) forming two sides of the chamber, a stationary strip (16) forming the bottom of the mould chamber, a sliding block (20) serving alternately as a side of the mould chamber and as a plunger to force the type from the mould, and a reciprocating plate (27) provided with a jet receiving recess (33), such plate serving alternately as one side of the mould chamber and as a plunger to force the type away from before the mould chamber, substantially as described. 2nd. In a type founding machine, a sliding body (20) fitted and adapted to reciprocate endwise between two blocks (17 and 18) forming sides of the mould chamber, and two lugs (21 and 23) on said body, all located and supported on a movable carriage, in combination with a chamber (22) affixed to the carriage-supporting frame, and an adjustable stop (24) on the standard (22), against which standard and stop said lugs are adapted to impinge, all substantially as described. 3rd. In a type founding machine, a movable plate (27) located and supported and adapted to reciprocate in front of the blocks (17 and 18), forming sides of the mould chamber, and a lever (28) pivoted on the bed of the carriage, which lever centrally is guided by, and travels between diagonal ways, said lever being adapted to reciprocate the slide (22), all supported on the travelling carriage, in combination with a post (31), right on the carriage-supporting frame, and diagonal ways (30) on said post, substantially as described. 4th. In a type founding machine, a movable slide (27) supported and caused to reciprocate in front of and against the blocks (17 and 18) forming the sides of the mould chamber, and in said slide a recess (33) having a downwardly bevelled rear side and a front cutting edge, substantially as described. 5th. In a type founding machine, a lever-finger (42) pivoted on a block affixed to the carriage, one end of which lever-finger oscillates in front of and near to the recess (33), in the plate (27) through which the molten metal is injected into the mould chamber, in combination with a guide plate (44) secured to a cross-bar of the frame of the machine, said guide plate being provided with a diagonal slot (45), in which the outer end of the lever-finger (42) is received and guided, substantially as described. 6th. In a type founding machine, a matrix holding register hinged to a permanent part of the carriage, and comprising a body part (46) thereto affixed, bearing (48), a movable plate (49) adjustably secured to the body part (46), and a therein-formed recess for the reception of the matrix (53), substantially as described. 7th. In a type founding machine, the combination of a therein pivoted register body (46), a thereto affixed bearing (48), an adjustable plate (49), a thereto attached spring (45), and a therein held matrix (53), substantially as described. 8th. In a type founding machine, a register body (46), thereto adjustably secured plate (49), and a stop (26) affixed to the outer corner of the plate (49) in combination with a sliding body (20) and a lug (21) thereon, substantially as described. 9th. In a type founding machine, a standard (22) affixed to the frame (A), and an adjustable stop (24) thereon, in combination with a sliding body (20) supported on the carriage and provided with lugs (21 and 23), substantially as described. 10th. In a type founding machine, swinging register carrying the matrix, of the mould supported on a reciprocating carriage, in combination with a lever (63) pivoted on the carriage and a lug (66) on the frame against which one end of the lever impinges forcing down the matrix, substantially as described. 11th. In a type founding machine, a bar (57) fixed to the upper surface of the frame and provided with an abruptly inclined front end (58), and a thereon travelling wheel (59) supporting and rotating in an end (60), pivoted to the mould supporting carriage, in combination with a post (61) in the arm (60), and a swinging register provided with an arm (62) adapted to impinge against the post (61), substantially as described. 12th. In a type founding machine, a travelling carriage and a thereto pivoted swinging lever (42), in combination with an arm (44) pivoted to the frame and extending through and travelling in a slotted guide on the carriage, which arm (44) is provided with a diagonal slot in which one arm of the lever (42) is received and travels, substantially as described. 13th. In a type founding machine, two upright blocks (17 and 18), a sliding body (20), and a movable plate (27) forming the sides of the mould chamber, in combination with two files (67 and 35) at a distance apart the file (35), including as a part thereof reciprocating head piece (34) and its guards (37) (37), which files so located and constructed with the end of block (18) form a continuous groove from the mould chamber, intermittingly open by the withdrawal rearwardly of plate (27) for the automatic travel of the type, substantially as described. 14th. The block (17 and 18), sliding body (20), and reciprocating plate (27) forming the side of a mould chamber, and the opposing files (35 and 67) and (71 and 72), all located and supported on the reciprocating bed (1) of a type founding machine, in combination with means for actuating plate (27) operated by the reciprocating bed, and with plunger (76), whereby the type are forced out of the mould and through the groove between the files, substantially as described. 15th. In a type founding machine, a movable carriage having two files (71 and 72), and flange (71½), in combination with a plunger (76) supported by guide brake (77), secured to file (72), and actuated by spring (78), and the arm (79) secured to the frame of a machine, substantially as described. 16th. The combination of the block (18), the file (67), and flange (38), with the file (35), secured at a distance from and opposite to the file (67), the thereto attached reciprocating head piece (34) provided with guards (37) (37), and the reciprocating plate (27) substantially as described.

No. 32,645. Machine for Rolling Screws.

(Machine à fileter les vis.)

The American Screw Company, (assignee of C. D. Rogers), Providence, R.I., U.S., 29th October, 1889; 15 years.

Claim.—1st. The combination, with reciprocating swaging-dies, which roll threads upon a screw-blank by rotating it between them and expanding the metal radially, of a revolving blank-carrying spindle and mechanism, substantially as described, which permits the spindle to be independently revolved by the action of said swaging-dies upon the blank, substantially as hereinbefore set forth. 2nd. In a screw-swaging-machine, the combination, with swaging-dies for rolling threads upon a screw-blank, of a revolving blank-carrying spindle provided with a pawl-and-ratchet gearing, which permits the spindle to be revolved by the action of said swaging-dies upon the blank at a greater speed than that which is normally due to the gearing, but which comes into action to compel the spindle to rotate the blank if the engagement of the dies with the blank fails to insure its rotation at the required rate, substantially as hereinbefore set forth.

No. 32,646. Frame for Supporting the Plates or Elements of a Secondary or Storage Battery. *(Bâti pour supporter les couples des accumulateurs.)*

The United Electric Improvement Company, Gloucester, N.J., (assignee of Walter F. Smith, Philadelphia, Penn.,) U.S., 29th October, 1889; 5 years.

Claim.—1st. The herein described supporting frame for a battery plate or element, provided with an auxiliary loop, substantially as and for the purposes set forth. 2nd. The herein described supporting frame with a lug and partition walls between and around plates, composed of the salts of a metal or metals to form an element of a battery, and said frame having a loop secured thereto, substantially as and for the purposes set forth. 3rd. The herein described frame supporting in position a series of plates to form an element of a battery, and provided with a permanent lug and an auxiliary loop or extensions, substantially as and for the purposes set forth.

No. 32,647. Wheel for Wheelbarrows and other Wheeled Vehicles. *(Roue pour les brouettes et autres véhicules à roues.)*

Thomas Heddon and John Kinleyside, Hamilton, Ont., 29th October, 1889; 5 years.

Claim.—In a wheel or wheels for wheelbarrows, or other wheeled vehicles and implements, the combination and arrangement of the several parts, namely: the spokes B and C rivetted or tenoned into the rim A at one end, with the alternate spokes B and C curved out or otherwise extended on their respective sides, and their ends welded together to form the shoulders E, axle arms D, and the collars F shrunk or otherwise fitted on, all substantially as and for the purposes herein set forth.

No. 32,648. System of Fastening Tool Handles. *(Mode d'assujétir les manches des outils.)*

Julius Weiss, Kiel, Germany, 29th October, 1889; 5 years.

Claim.—A fastening for handles of tools consisting of a fish-shaped or double-ended wedge with serrations, which is fixed in the tool by means of a rivet, substantially as described.

No. 32,649. Water Heater. *(Calorifère à eau.)*

Warden King, (assignee of Thomas J. Best), Montreal, Que., 29th October, 1889; 5 years.

Claim.—The combination, in a water heater, of the sections b having projections b^2, and diaphragms b^3 and b^4, with the sections c having projections c^2, and diaphragms c^3 and c^4, the whole substantially as described and shown.

No. 32,650. Rule Holder. *(Porte-règle.)*

Mike Murphy, Birmingham, Ala., U.S., 29th October, 1889; 5 years.

Claim.—1st. The rule-holder herein described, consisting of a bottom part A and a top part B united as shown, and provided with prongs c and movable prongs e and having the spring-clamps arranged substantially as specified. 2nd. In a rule-holder, the combination of the bottom A and open top B united by wires C, C, and strip D, with the spring-clamps G, H, H, and prongs c, c and e, e, all substantially as and for the purpose set forth. 3rd. The combination of the bottom A and the top B united as shown, with the spring-clamps H, H, having ears h, h, and the clamp G, fixed prongs c, c, and movable prongs e, e, on the wire E, arranged as shown and specified. 4th. In the rule-holder described, the bottom A and the open top B united by the wires C, and strip D, with the spring-clamps G, H, H, the wire E provided with lever F, and the prongs e, and the prongs c, all constructed and arranged as and for the purpose herein set forth.

No. 32,651. Wood Screw. *(Vis à bois.)*

The American Screw Company, (assignee of C. D. Rogers), Providence, R.I., U.S., 29th October, 1889; 15 years.

Claim—A screw provided with one or more threads about its body or cylindrical portion, and with one or more auxiliary threads upon its pointed or conical portion between the thread extending from the body.

No. 32,652. Drive Screw. *(Vis.)*

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 29th October, 1889; 15 years.

Claim.—1st. A screw having the bottom of the grooves between the threads formed into low auxiliary ribs or projectieg surfaces, which engage with the wood or nut into which it is inserted and increase its holding capacity. 2nd. A rolled screw having the diameter of the threaded portion exceeding that of the plain or unthreaded portion, and having the bottom of the grooves between the said threads formed into low auxiliary ribs or projecting surfaces, the outer faces of which have substantially the same diameter as the said unthreaded portion.

No. 32,653. Wood Screw and Drive Screw. *(Vis à bois et autre.)*

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 29th October, 1889; 15 years.

Claim.—A screw provided with one or more spiral grooves impressed into the metal of a screw blank, and with spiral threads raised between the grooves and the adjacent normal surface of the blank by the compression and displacement of the metal in forming the grooves.

No. 32,654. Screw Swaging Machine. *(Machine à fileter les vis.)*

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 29th October, 1889; 15 years.

Claim.—1st. A swaging-die for forming threads upon screw blanks made up of parallel sections, which are successively brought into action to compress the metal to form the thread and elongate the blank. 2nd, The combination, substantially as hereinbefore described, of oppositely reciprocating cross-heads, sectional screw-threading dies and simultaneously moving backing-plates, for forcing successively the several sections of the dies into engagement with the screw-blank while the thread is being formed. 3rd. The combination of revolving gripping-jaws which receive the blank from a feeding mechanism and hold it while thus revolving in the proper position to be acted upon by the dies, reciprocating sectional threading-dies arranged to simultaneously engage opposite sides of the blank and alternately revolve it repeatedly in forming the thread, and mechanism for forcing the travelling dies into engagement with the revolving blank, and for withdrawing them therefrom after they have completed their work, substantially as hereinbefore described. 4th. The combination of revolving gripping-jaws arranged to receive, retain and release the blank, two oppositely-arranged reciprocating cross-heads, each having mounted therein a thread-forming die divided horizontally into two or more parallel sections, and a cam-bar or plate mounted at the back of each die and reciprocating in unison therewith, and means for vertically actuating said cam-plate to successively operate the die-sections, substantially as hereinbefore set forth.

No. 32,655. Storage Battery. *(Accumulateur électrique.)*

Harry E. Dey, New York, N Y., U.S., 29th October, 1889; 5 years.

Claim.—1st. A storage battery, consisting of two or more cells formed by similar plates, the plates forming the sides of the cells, the spaces being filled with a suitable electrolyte, whereby one side of each plate becomes positive and one side negative in the process of charging. 2nd. The combination of a box or case, a series of similar battery plates of width less than the interior of the case, insulating strips between the sides and lower ends of said plates, thereby forming cells between the plates, and an insulating and water-proof cement filling between the sides of the case and the edges of the plates. 3rd. The combination of a series of battery plates, arranged with insulating divisions between them, said divisions being made moisture-tight, whereby the spaces between the plates form cells for the electrolyte and insulating plates interspersed, whereby the battery is divided into two or more separate series.

No. 32,656. Horse Shoe. *(Fer à cheval.)*

William Somerville, Sr., Buffalo, N. Y., U. S., 29th October, 1889; 5 years.

Claim.—1st. In a horse shoe, the combination, with an upper plate A, provided at its front with an opening b, a toe lug B and heel lugs C, C, having straight front faces, and transverse grooves j in said faces, of a lower calk plate E provided at its front with a tenon h entering the opening b, and having straight rear ends fitting against the front sides of the lugs C, C, and provided with transverse grooves k, and locking pins inserted in said grooves j, k, substantially as set forth. 2nd. In a horse shoe, the combination, with an upper plate A, provided at its front end with an opening b, a toe lug B, heel lug C, C, having straight front faces, and downwardly-projecting tenons a arranged in front of said heel lugs, of a lower calk plate E, provided at its front end with a tenon h entering the opening b, and having straight rear ends fitting against the front faces of the heel lugs C, C, and sockets i receiving the tenons d and fastenings, whereby the rear ends of the calk plate are attached to the upper plate, substantially as set forth.

No. 32,657. Machine for Bevelling Stereotype and Electrotype Plates. *(Machine à chanfreiner les plaques stéréotypes et électrotypes.)*

John Manning, London, Eng., 29th October, 1889; 5 years.

Claim.—1st. In a machine for bevelling stereo and electro plates, the combination of the pulleys b^1, c^1, b^1, bevel wheels a^1, a^1 a^1, and the screw or worm M giving the backward and forward motion to the sliding table G, and of the disc F^1 driven by power and supplied with cutters j^1, j^{11}, j^{111}, substantially as and for the purposes herein set forth. 2nd. The combination of platen J, capable of moving vertically on studs n, fitted with links l, l and levers k, k, adapted to rocking shaft H, lever q, nut v and screw s actuated by hand wheel t, all of which combination allows the operator to rigidly affix the plate to be worked to sliding table G, substantially as herein set forth. 3rd The combination of three cutters j^1, j^{11}, j^{111}, set at their various angles and fitted to perform their various operations consecutively, the last cutter j^{111} leaving the job in a finished state, substantially as described. 4th. The adaptation of conical trunnion bearings d to conically turned shaft E, so as to enable the required tilt to be given to the disc F, substantially as herein set forth. 5th. The combination of screws a, a, working on lug, and of bearings O^1 respectively allowing to b and to shaft N, of being set sideways out of the centre of the machine, according as circumstances may necessitate, substantially as and for the purposes specified.

No. 32,658. Grate. *(Grille.)*

John P. Thomas, Detroit, Mich., U.S., 29th October, 1889; 5 years.

Claim.—1st. In a grate, a frame having a stationary grate bar on each side thereof, rocking grates connected together by a link, and a shaking lever having connection with a pivot pin journalled in said link, substantially as described. 2nd. In a grate, the combination of the grate bar, consisting of the body portion a, having central apertures b, the connecting lugs c, the teeth d tapering from the top to the bottom, said bars being thicker in the middle than at the ends, whereby they are trussed their entire length, the parts being arranged and constructed substantially as and for the purpose specified.

No. 32,659. Rhythmic Generation of Electric Currents. *(Production rhythmique des courants électriques.)*

Charles L. Davies, London, Eng., 29th October, 1889; 5 years.

Claim—1st. The herein described method of generating rhythmic electric currents by means of vibrating parts, so arranged in connection with a coiled iron core and a contact for the current to the coil that contact is maintained during one-half of each vibration, and that contact is interrupted during the other half of each vibration, the periods of transmission and of cessation of impulses being thus equalised. 2nd. In combination with a free tongue or rate governor vibrating under the influence of a coiled iron core, a subsidiary vibrating tongue of less strength and greater speed, so arranged in connection with the governor and with a contact stop that it is carried by the governor away from the contact during half a vibration of the governor, and that it rests against the contact during half a vibration of the governor, substantially as described.

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

1592. J. B. ARMSTRONG, 2nd 5 years of No. 20,406, from the 22nd day of October, 1889. Improvements in Tilt Hammers, 4th October, 1889.

1593. T. FRIEDRICK, 2nd 5 years of No. 20,570, from the 13th day of November, 1889. Improvements in Combined Lock and Latch, 7th October, 1889.

1594. J. SHEDDON, 2nd and 3rd 5 years of No. 20,375, from the 13th day of October, 1889. Improvements in Machinery for the Manufacture of Metallic Screws and Screw Bolts and other Metallic Articles having Screw Threads upon them, 10th October, 1889.

1595. T GOOD, 2nd 5 years of No. 21,038, from the 31st day of January, 1890. Improvements in the Manufacture of Cordage and in Machinery therefor, 10th October, 1889.

1596. J. A. McMARTIN, 2nd 5 years of No. 20,370, from the 11th day of October, 1889. Improvements in Wind Mills, 11th October, 1889.

1597. W. A. HARDY, 2nd 5 years of No. 20,433, from the 27th day of October, 1889. Improvements in Journal Bearings, 12th October, 1889.

1598. E. E. & J. A. DE BRAAM, 2nd 5 years of No. 20,396, from the 8th day of October, 1889. Improvements in Carbureted Air Engines, 15th October, 1889.

1599. W. ESTY, C. A. BESSIEL, J. T. BESSIEL and F. E. BESSIEL (assignees), 2nd 5 years of No. 20,425 from the 25th day of October, 1889. Improvements in the Art of Knitting Stockings, 16th October, 1889.

1600. W, ESTY, C. A. BESSIEL, J. T. BESSIEL and F. E. BESSIE (assignees), 2nd 5 years of No. 20,427, from the 25th day of October, 1889. Improvements in the Art of Knitting Widened Tubular Fabrics, 16th October, 1889.

1601. E. W. RATHBUN, 2nd 5 years of No 20,580, from the 15th day of November, 1889. Improvements in Friction Gear, 16th October, 1889.

1602. C. JOHNSON, 2nd 5 years of No. 10,591, from the 28th day of October, 1889. Improvements on Horse Power Sod Cutters and Cultivators, 23rd October, 1889.

1603. E. C. JONES, 2nd 5 years of No. 20,442, from the 29th day of October, 1889. Improvements on Fence Posts, 23rd October, 1889.

1604. A. FRAZER (assignee), 2nd 5 years of No 20,417, from the 24th day of October, 1889. Composition of Matter to be used for the Manufacture of Target Balls and Flying Targets, 23rd October, 1889.

1605. W. G. WHITE and R. A. A. WHITE, 2nd and 3rd 5 years of No. 30,943, from the 19th day of March, 1894. Polychromatic Printings, 24th October, 1889.

1606. J. WHITFIELD, 2nd 5 years of No. 11,998, from the 15th day of November, 1890. Improvements on Stump Extracting Machines, 24th October, 1889.

1607. E. W. R. SCHROTEN, 2nd 5 years of No. 20,620, from the 25th day of November, 1889. Medical Compound and the Process for Manufacturing the Same, 24th October, 1889.

1608. P. PLATT (assignee), 2nd 5 years of No. 20,434, from the 27th day of October, 1889. Improvements in Machines for Drying Malt and Hops, 26th October, 1889.

1609. HOLMES ELECTRIC PROTECTION CO. OF CANADA (assignee), 2nd 5 years of No. 20,663, from the 29th day of November, 1889. Improvements in Electric Burglar Alarms, 28th October, 1889.

1610. D. M. MACPHERSON, 2nd 5 years of No. 20,463, from the 3rd day of November, 1889. Improvements in Curd Mills, 13th October, 1889.

1611. A. PEEL, 2nd 5 years of No. 20,594, from the 18th day of November, 1889 Improvements in Brick Making Machines, 30th October, 1889.

1612. INDURATED FIBRE CO., 2nd 5 years of No. 20,737, from the 15th day of December, 1889. Improvements on Machines for Forming Hollow Ware from Paper Pulp, 30th October, 1889.

OCTOBER LIST OF TRADE MARKS.

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

3554. S. DAVIS & SONS, of Montreal, Que. Cigars, Cigarettes and Tobaccos, 2nd October, 1889.

3555. } THE HAZELTON BOILER COMPANY, of New York, U.S.A. Radial Water-Tube
3556. } Steam Boilers, 7th October, 1889.
3557. }

3558. JOHN WILLIAM GORHAM, of Halifax, N.S.. General Trade Mark, 14th October, 1889.

3559. JULIUS MAGGI, of Kempthal, Switzerland, Alimentary Products, 14th October, 1889.

3560. SPEYER, SCHNERDT and COMPANY, of London, England. Buttons and Braid made of wool, silk, and wool and silk combined, 14th October, 1889.

3561. CHARLES R. GROFF, of St. Paul, Minn., U.S.A. Baking Powder, 14th October, 1889.

3562. WILLIAM G. LE MESURIER, of Montreal, Que., and GEORGE G. LE MESURIER, of the District of Darfeeling, India. General Trade Mark, 16th October, 1889.

3563. ELIAS ROGERS, of Toronto, Ont. Coal, 21st October, 1889.

3564. H. HERRMANN, of New York, N.Y., U.S.A. Manufactured timber or lumber, 21st October, 1889.

3565. HILLS THORPE, of Vancouver, B.C. Ærated and Mineral Waters, 21st October, 1889.

3566. WILLIAM MITCHELL, of 13 and 14 Cumberland Street, Birmingham, Warwickshire, and 44 Cannon Street, London, England.
Embossing Presses, and parts of such presses and balances generally, Cases of Mathematical Instruments, Knives, Scissors, and Quill Pen making Machines, Metal Goods generally, including Call Bells, Safes, Cash and Deed Boxes, String Boxes, Pen and Pencil Cases of all descriptions, Pens and Penholders of all descriptions, etc., etc., 21st October, 1889.

3567. CONDY AND MITCHELL, (Limited), of 67 and 68 Turnmill Street, Clerkenwell, London, England. Disinfectants, 21st October, 1889.

3568. } BARLOW AND JONES, (Limited), of 2 Portland Street, Manchester, England.
3569. } Cotton linen and hemp goods of all kinds, articles of Clothing and linen towels, 21st October, 1889.

3570. WILLIAM BRYCE and WILLIAM McCOMBIE HUTCHISON, of Vancouver, B.C., Ærated and Mineral Waters, 22nd October, 1889.

3571. DR. JOSEPH LARIVIERE, of Manville, Rhode Island, U.S.A. Medical Compound, 23rd October, 1889.

3572. DURANT and COMPANY, of Trinidad, British West Indies. Medical Compound, 23rd October, 1889.

3573. MICHAEL McLAUGHLIN and ARTHUR MOORE, of Toronto, Ont. Flour, 28th October, 1889.

3574. JOSEPH TETLEY and COMPANY, of No. 31, Fenchurch St., London, England. Tea, 28th October, 1889.

3575. E. R. DURKEE and COMPANY, of New York, N.Y., U.S.A. Baking Powder, 29th October, 1889.

3576, THE CANADIAN TOBACCO MANUFACTURING COMPANY, of St. Jacques, Co. of Montcalm, Que. Tobacco, 29th October, 1889.

3577. DUFRESNE et MONGENAIS, de Montreal, Que. Liqueur spiritueuse, (Rye), 31 Octobre, 1889.

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5037. Photograph of Mr. ROBERT SELLARS, of Kingston. James William Powell, Kingston. Ont., 2nd October, 1889.

5038. TO-MORROW WILL DO. Humorous Song. Words by M. Foreman. Music by Henry Pontet. I. Suckling & Sons, Toronto, Ont., 2nd October, 1889.

5039. THE VALLEY OF SILENCE. Song. Words by Father Ryan. Music by W. O. Forsyth. A. & S. Nordheimer, Toronto, Ont., 3rd October, 1889.

5040. THE WILLOW COPSE. Song. Words and Music by Michael Watson. The Anglo-Canadian Music Publishers' Association, (L'd.) London, England, 4th October, 1889.

5041. WHEN THE SUN WAS LOW. Song. Words by R. S., Hichens. Music by Joseph L. Roeckel. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 4th October, 1889.

5042. VICTOIRE!! Marche Militaire par N. Herbute. Edmond Hardy, Montreal, Que., 5 Octobre, 1889.

5043. INSURANCE PLANS of Halifax, Vol. II. (sheets 33 to 42) and Dartmouth, Nova Scotia; Dresden, Lancaster, Morrisburg, Petrolia, Ridgetown, Wallaceburg, and West Toronto Junction, Ontario. Chas. E. Goad, Montreal, Que., 7th October, 1889.

5044. HYGIENE DES YEUX: The Health of the Eye. C. Nourrie et J. Petit, Montreal, Que.. 7th October, 1889.

5045. AN IDENTIFICATION CARD. Robert Steel McIndoe, Toronto, Ont., 8th October, 1889.

5046. NORTHERN ECHOES WALTZES. By Josephine Bourret. J. L. Orme & Son, Ottawa, Ont., 8th October, 1889.

5047. THE MILL MYSTERY. By Anna Katharine Green. The Rose Publishing Co., Toronto, Ont., 9th October, 1889.

5048. EVERY DAY VISITING LIST. By Marie H. Holmested. The Rose Publishing Co., Toronto, Ont., 9th October, 1889.

5049. A DIVIDED HOUSE.
5050. SUNDERED HEARTS.
5051. HAZELL & SONS, BREWERS.
5052. TWICE TRIED.
} by Annie S. Swan.
Wm. Briggs, Toronto, Ont., 11th October, 1889.

5053. VALSE CAPRICE, Opus 2. No. 1
5054. PROSODION. Opus 2. No. 2.
} by Clarence Lucas.
I. Suckling & Sons, Toronto, Ont., 11th October, 1889.

5055. URSULA VIVIAN: The Sister Mother.
5056. ROBERT MARTIN'S LESSON.
5057. SHADOWED LIVES
5058. DORIS CHEYNE.
} by Annie S. Swan.
Wm. Briggs, Toronto, Ont., 12th October, 1889.

5059. REGISTRE d'INSCRIPTION et d'APPEL POUR LES ECOLES CATHOLIQUES FRANCAISE DE LA PROVINCE DE QUEBEC. Joseph Napoleon Miller, Quebec, 12 Octobre, 1889.

5060. HAIRBREADTH ESCAPES OF MAJOR MENDAX, by Francis Blake Crofton, Halifax, N.S., 15th October, 1889.

5061. IN'S HERZ GESCHOSSEN. (Shot in the Heart) By Theodore Martens, (Mazurka) A. & S. Nordheimer, Toronto, Ont., 16th October, 1889.

5062. YOU SLEEP. Serenade. Words by B. S. Stephenson. Music by Arthur Sullivan. The Anglo-Canadian Music Publishers' Association, (L'd.), London, England, 17th October, 1889.

5063. PIERRE CHOLET, or THE RECOVERED KIDNAPPED CHILD. The Deaf and Dumb Institution, of Mile End, and Pierre Cholet of Montreal, Que., 19th October, 1889.

5064. L'ENFANT PERDU ET RETROUVÉ ou, PIERRE CHOLET. L'Institution des Sourds Muets, de Mile End, et Pierre Cholet, de Montreal, Que., 17 Octobre, 1889.

5065. KIT WYNDHAM, or FETTERED FOR LIFE. By Frank Barrett.
5066. THE TREE OF KNOWLEDGE. by G. M. Robins.
5067. THE HAUTE NOBLESSE. By George Manville Fenn.
John Lovell & Son, Montreal, Que., 18th October, 1889.

5068. WHY PRIESTS SHOULD WED. By Rev. Justin D. Fulton. D. D. Archer Green Watson, Toronto, Ont., 19th October, 1889.

5069. LOVE AND FRIENDSHIP. Song. Words by John Muir,. Music by Hope Temple. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 19th October, 1889.

5070. OFF TO PHILADELPHIA. Song. Words revised by Stephen Temple. Music adapted from an Old Irish Melody, by Battison Hayes. The Anglo Canadian Music Publishers' Association (L'd.), London, England, 19th October, 1889.

5071. CLEOPATRA VALSE. By Carl Multner. I. Suckling & Sons, Toronto, Ont., 19th October, 1889.

5072. MY HEART'S DELIGHT. Polka. By M. Martin. I. Suckling & Sons, Toronto, Ont., 19th October, 1889.

5073. NOT YET. Sacred Song. Words by F. R. Havergal. Music by J. L. Orme. J. L. Orme & Sons, Ottawa, Ont., 19th October, 1889.

5074. CLARKE'S LETTERED MUSIC. (system of music). George Franklin Clarke, Davenport. Ont., 19th October, 1889.

5075. PHOTOGRAPHS PRODUCED FROM SKETCHES OF SCENERY IN THE EARLY HISTORY OF CANADA. (book). John D. Robertson, St. John, N.B., 21st October, 1889.

5076. GROANS AND GRINS OF ONE WHO SURVIVED. By Bruce Munro, Toronto, Ont., 21st October, 1889.

5077. STATUARY OF SIR CHARLES TUPPER. W. C. Archibald, Wolfville, N.S., 22nd October, 1889.

5078. STATUETTE OF SIR CHARLES TUPPER. By P. Herbert. W. C. Archibald, Wolfville, N.S., 22nd October, 1889.

5079. LIFE FROM THE CRADLE TO THE GRAVE. Words and Music by Wm. Thomas, Toronto, Ont., 24th October, 1888.

5080. THOMAS DRYBURGH'S DREAM.
5081. MISS BAXTER'S BEQUEST.
5082. DOROTHEA KIRKE, or FREE TO SERVE.
} by Annie S. Swan.
Wm. Briggs, Toronto, Ont., 25th October, 1889.

5083. THE PIT-A-PAT SCHOTTISCHE.
5084. LA ZIEKA.
by Prof. John Freeman Davis, Toronto, Ont., 25th October, 1889.

5085. CANADA AND THE UNITED STATES COMPARED with Practical Notes on Commercial Union, Unrestricted Reciprocity, and Annexation, by P. N. Facts. The Presbyterian Printing and Publishing Co. (L'd.), Toronto, Ont., 25th October, 1889.

5086. DARELL BLAKE, by Lady Colin Campbell.
5087. SHEBA by "Rita."
5088. THE DEAN'S DAUGHTER. by Sophie F. F. Veitch.
The National Publishing Co. Toronto, Ont. 26th October, 1889.

5089. A DIGEST OF MASONIC JURISPRUDENCE, by Henry Robertson, L.L.B., Collingwood, Ont., 26th October, 1889.

5090. HISTORY OF SIMCOE COUNTY, which is now being preliminarily published in separate articles in "The Barrie *Examiner*" at Barrie, Ont., (temporary copyright). Andrew F. Hunter, Barrie, Ont., 26th October, 1889.

5091. THE HILLS OF ARCADY. Song. Words by F. E. Weatherly. Music by Henry Pontet.
5092. THE BRAVE OLD GUARD. Song. Words by Lawrence Fane. Music by Edward St. Quintin.
A. & S. Nordheimer, Toronto, Ont., 28th October, 1889.

5093. UPON THIS ROCK. by M. C. O'Byrne, (book). James Spencer Ellis, Toronto, Ont., 29th October, 1889.

5094. THE SECRET PANEL.
5095. CARLOWRIE, or AMONG LOWTHIAN FOLK.
} by Annie S. Swan.
Wm. Briggs, Toronto, Ont., 30th October, 1889.

5096. DOUGLAS GORDON. Song. Words by F. E. Weatherly. Music by Lawrence Kellie. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 30th October, 1889.

5097. THE PRACTICAL SPELLER. By J. J. Rooney, Peterborough, Ont., 30th October, 1889.

5098. VILLAGE SCENES. A Canadian Poem. By Dennis Coughlin, Ottawa, Ont., 30th October, 1889.

5099. BUTTONS. By John Strange Winter. (book). John Lovell & Son, Montreal, Que., 31st October, 1889.

5100. A DAUGHTER OF ST. PETER'S. A Novel. By Janet C. Conger, Montreal, Que., 31st October, 1889.

5101. CALENDRIER DU DIOCESE DE QUEBEC POUR 1890. J. A. Langlais, Quebec, Que., 31 Octobre, 1889.

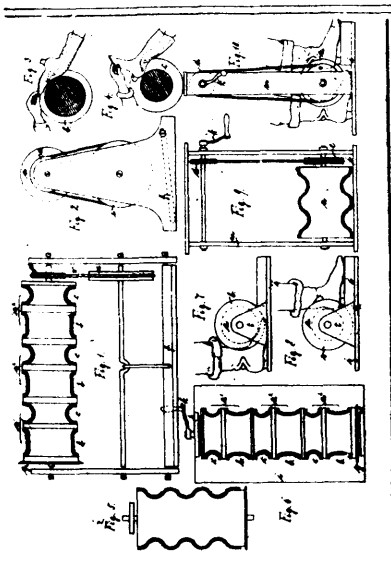
5102. WERE I THE RIVER. Song. Words by Clifton Bingham. Music by Tito Mattei. Chappell & Co., London, England, 31st October, 1889.

THE

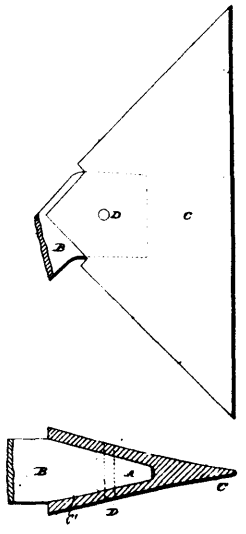
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

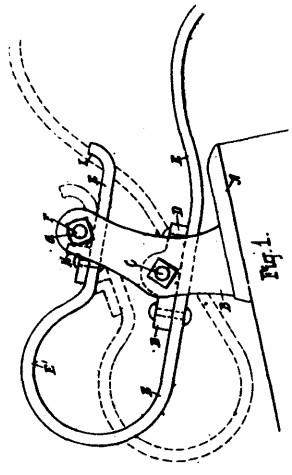
Vol. XVII. OCTOBER, 1889. No. 10.



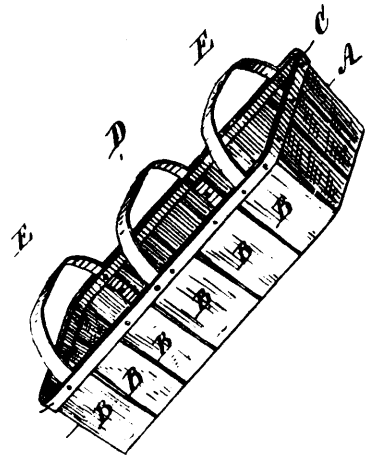
32398 Handel's Boot Cleaning Machine.



32399 Heithersay's Share for Ploughs, etc.



32401 Drader & McKay's Cultivator Tooth.



32402 Clark's Fruit Basket.

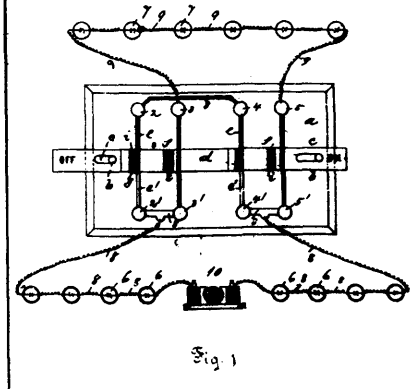
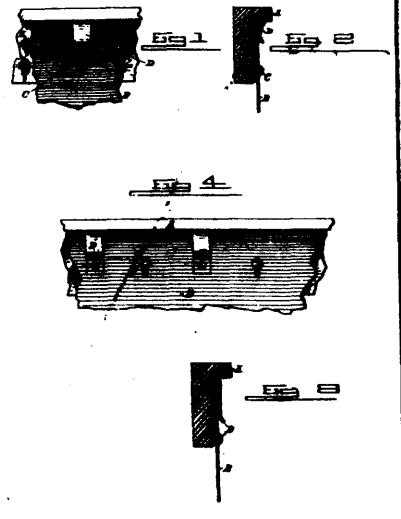
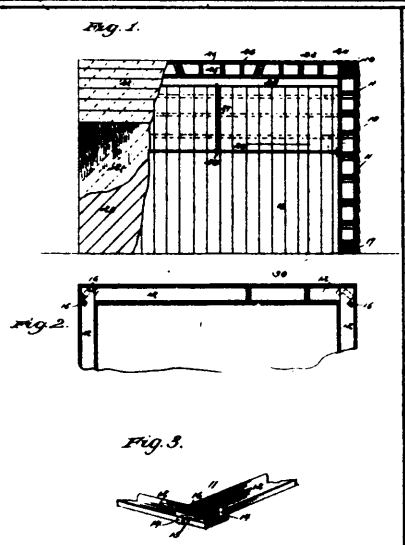


Fig. 1

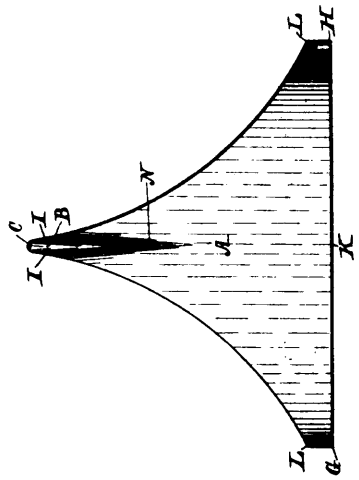
32403 Thompson's Electrical Switch.



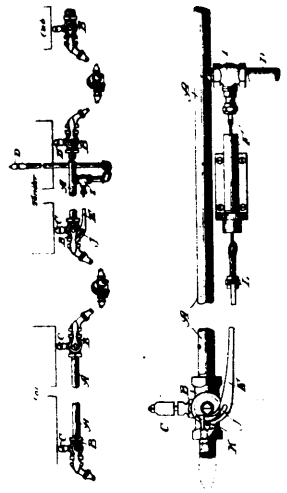
32404 Buchnan's Carriage Curtain Fastening



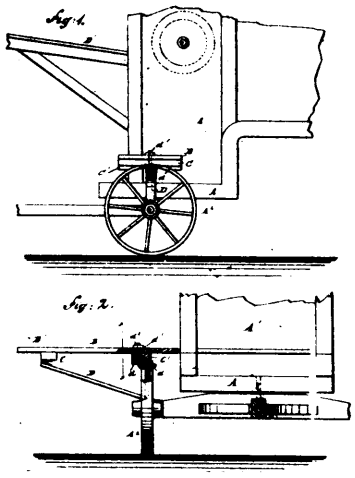
32405 Rankin's Construction of Buildings.



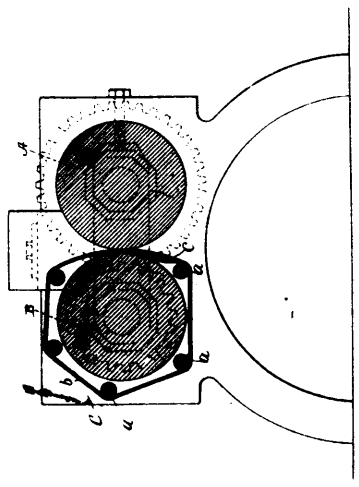
32406 Gates' Hoe.



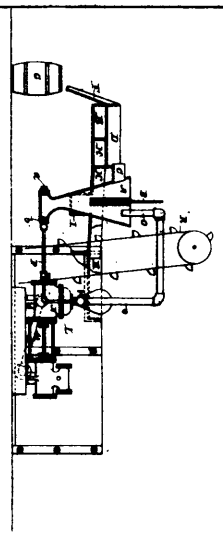
32407 Collins' Air Brake Signal.



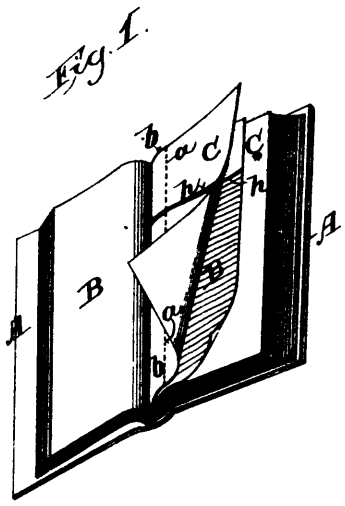
32408 Leeper's Band Cutter Platform.



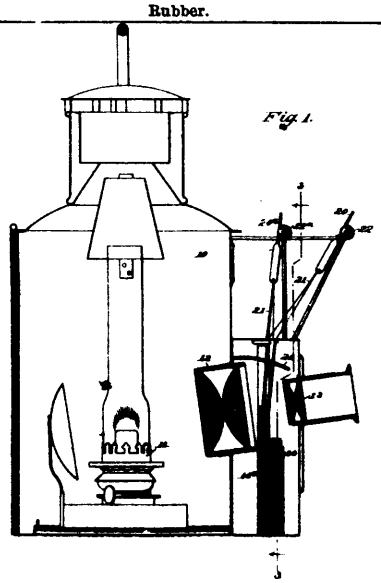
32409 Mitchell's Mill for Grinding and Sheeting Rubber.



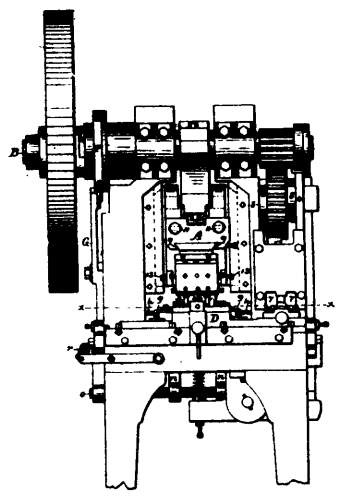
32410 Mitchell's Apparatus for Washing and Separating Rubber.



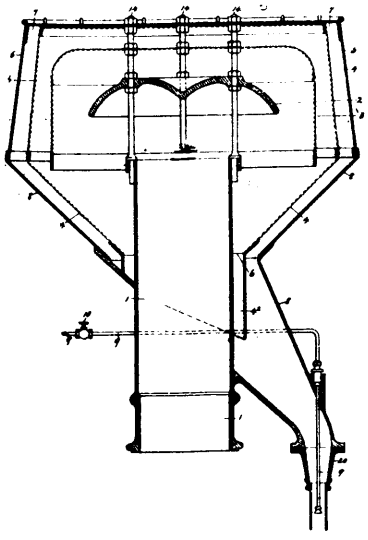
32413 Loewenbach's Manifold Shipping Book.



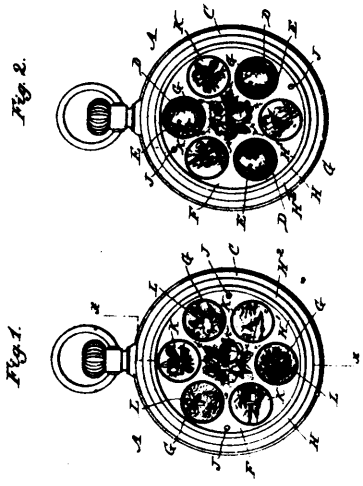
32414 Hayward's Signalling Lantern.



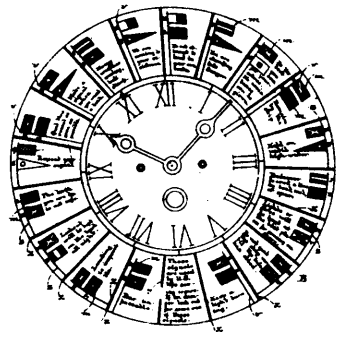
32415 Dunham's Nut Making Machine.



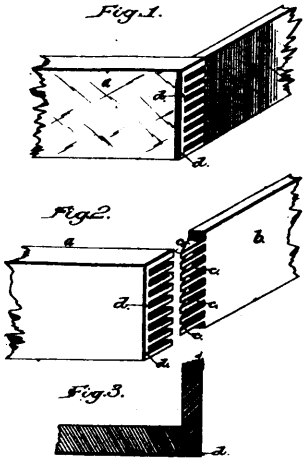
32418 Brown's Locomotive Smoke Stack.



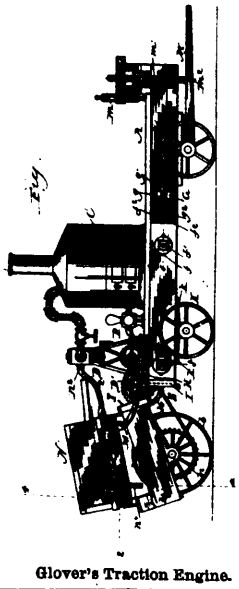
32419 Schelker's Watch Case.



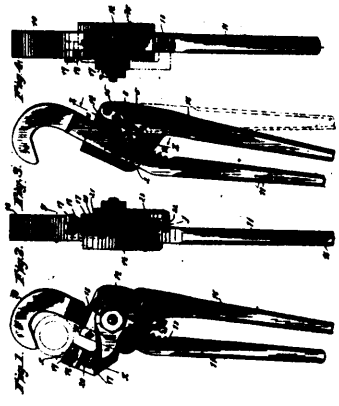
32420 Harding's Mariners' Clock or Watch Dial.



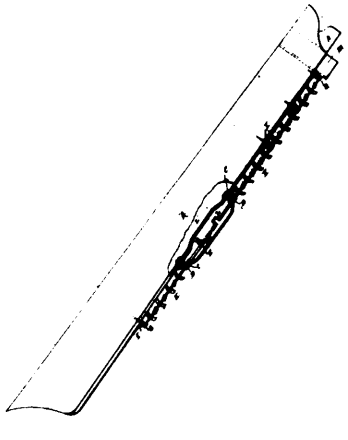
32421 Beach's Joint for Furniture, etc.



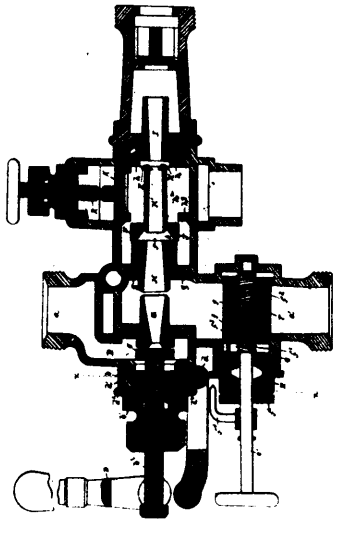
32422 Glover's Traction Engine.



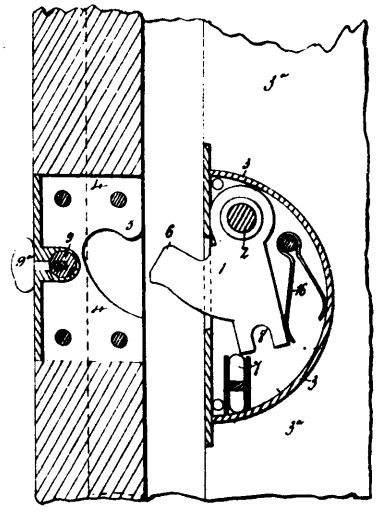
32423 Reagan's Pipe Wrench.



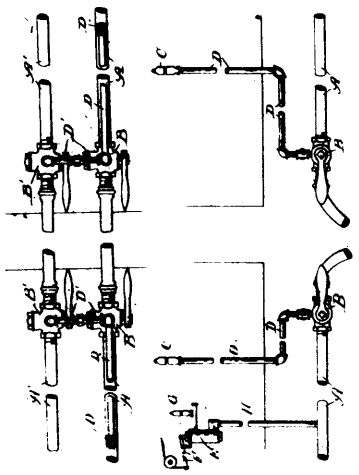
32424 Vose's Means for Propelling Vessels.



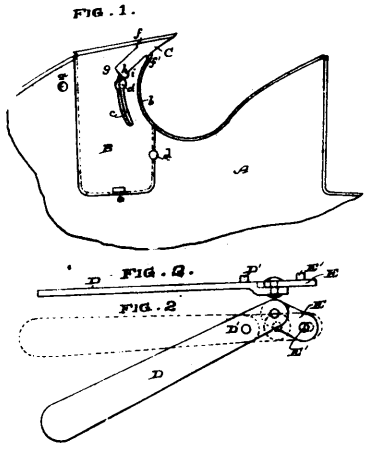
32425 Desmond's Steam Injector.



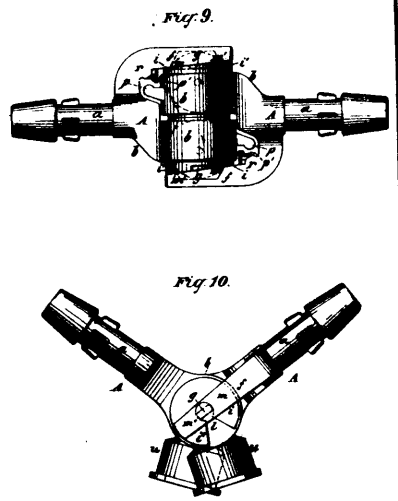
32426 Wright's Fastening for Doors.



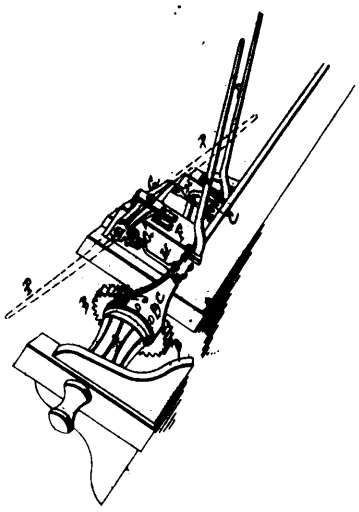
32427 Collins' Air Brake Signal.



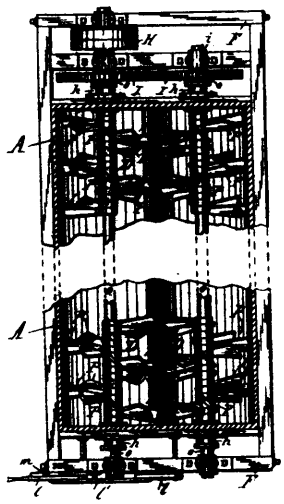
32428 Cook's Saw Tooth.



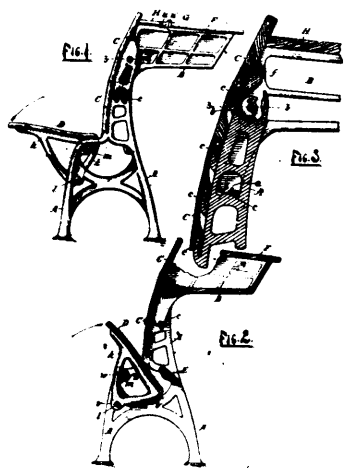
32429 Gold's Pipe Coupling for Cars.



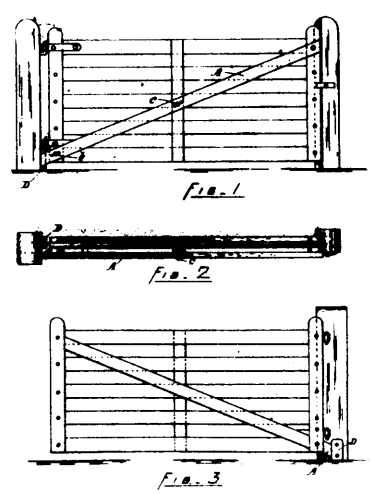
32430 Voss' Windlass.



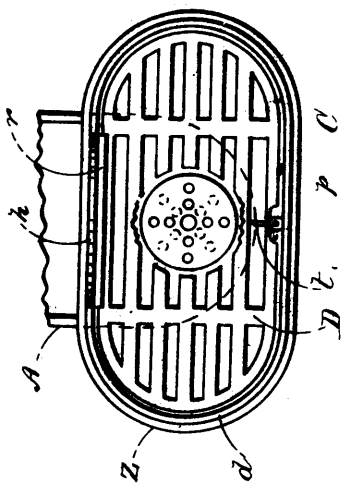
32432 Broughton's Machine for Mixing Compounds.



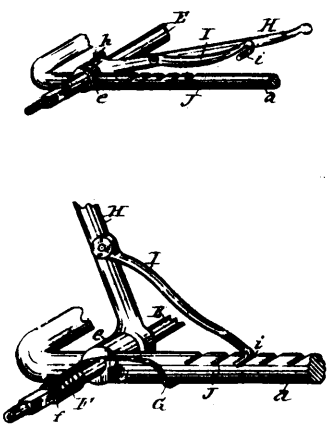
32433 Haney's School Desk, etc.



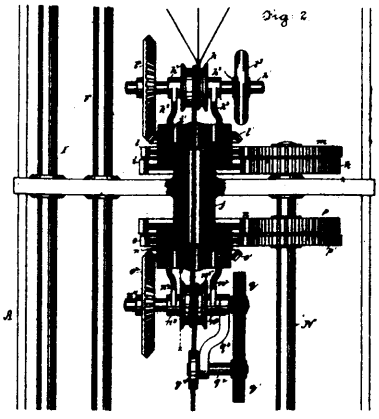
32434 Goddard's Gate.



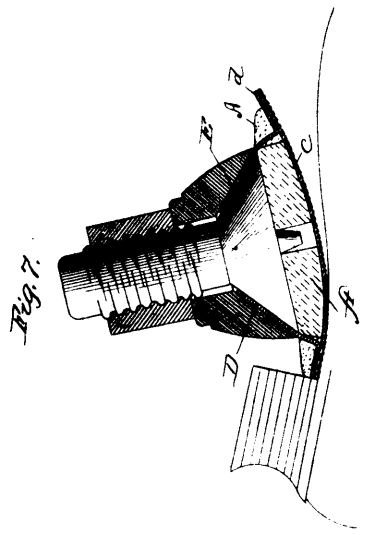
32435 Thissel & Bradstreet's Wash Boiler.



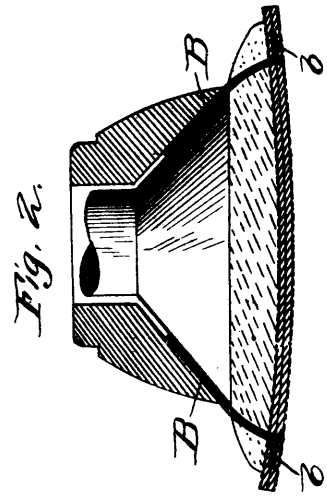
32436 Cately's Buggy Top.



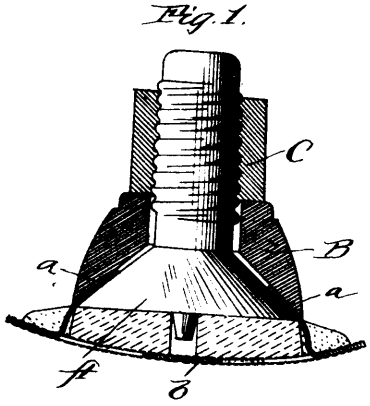
32437 Dooley's Cord and Rope Making Machine.



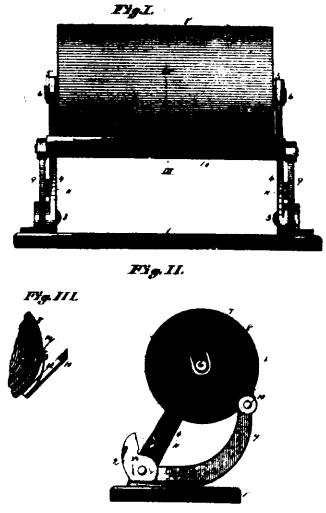
32438 Rogers' Buffer.



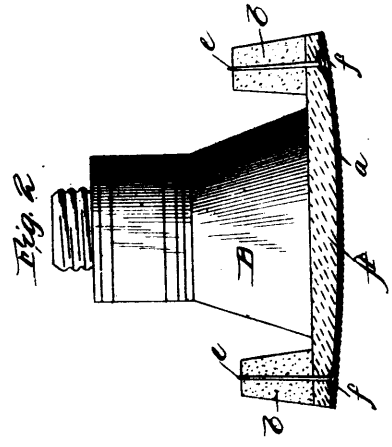
32439 Rogers' Buffer Covering.



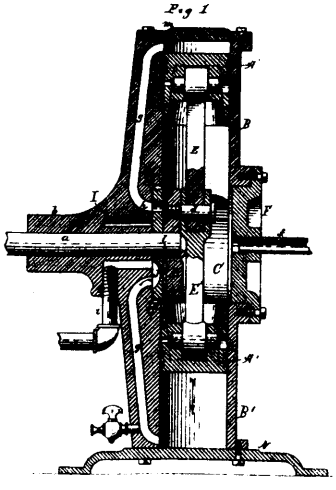
32440 Rogers' Buffer Covering.



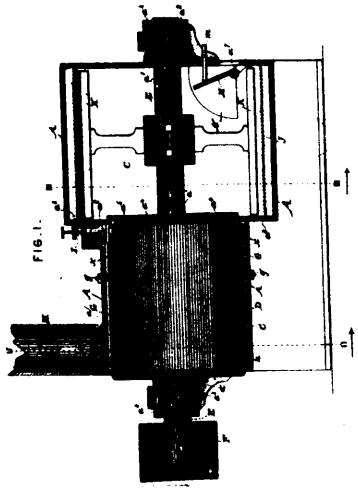
32441 Pickles' Paper Cutter.



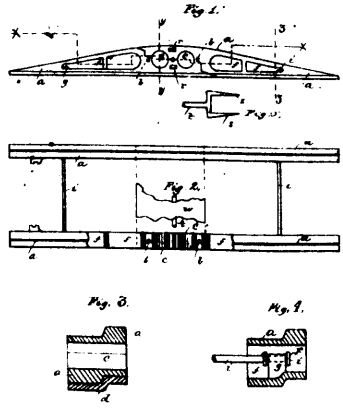
32442 Winslow's Buffer.



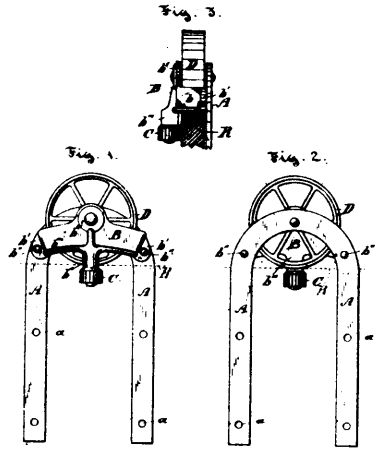
32444 Dennis & Shoemaker's Steam Engine.



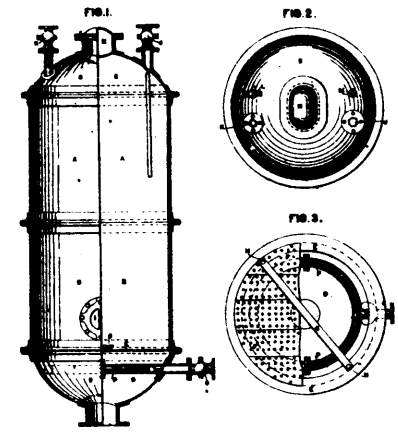
32445 Case's Grain Scourer.



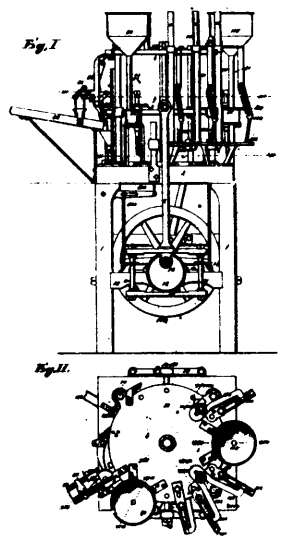
32446 Little's Device for Conveying Cars over Obstructions.



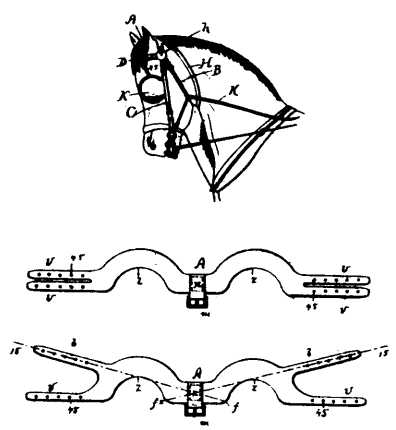
32447 Woodyatt's Barn Door Hanger.



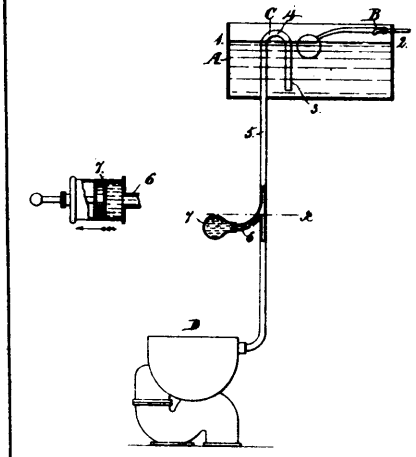
32448 Manbré's Concentrated Ale and Stout, etc.



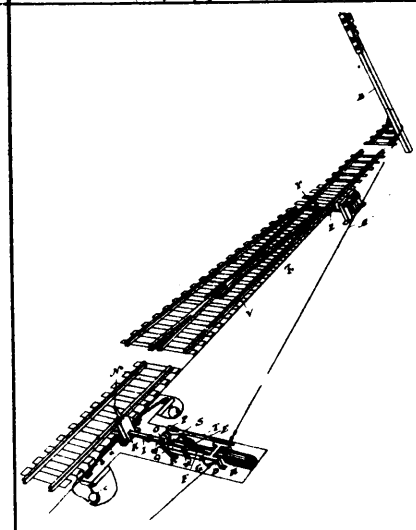
32449 Euston's Cartridge Loader.



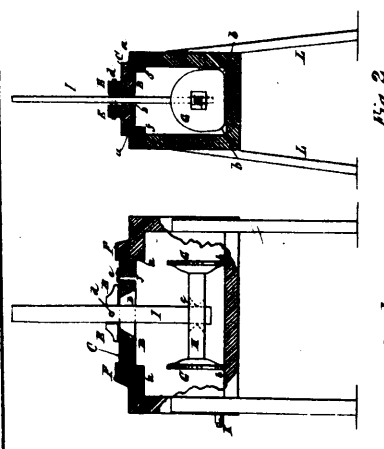
32451 Gowan's Bridle.



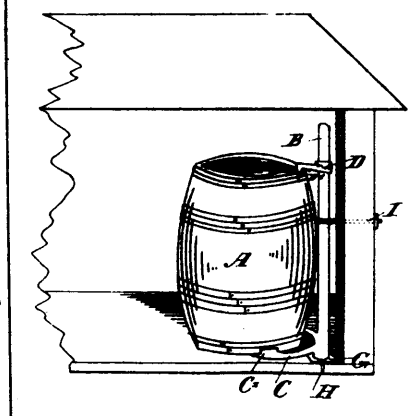
32452 Simpson's Water Closet Flush, etc.



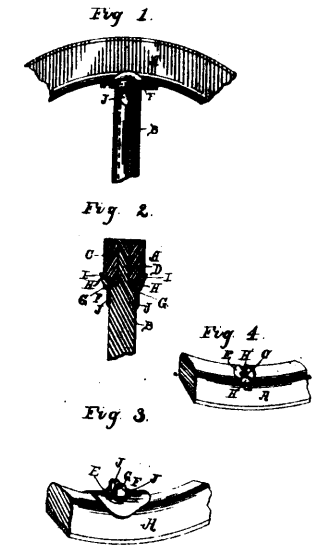
32453 Thompson's Mechanism for Operating Semaphores.



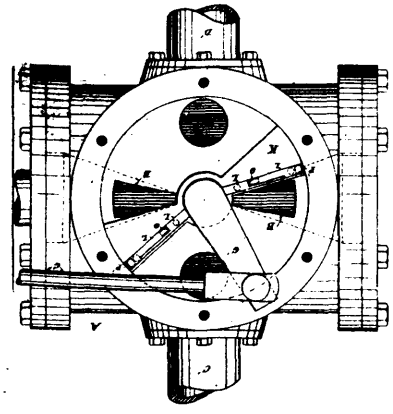
32454 Holmes' Churn.



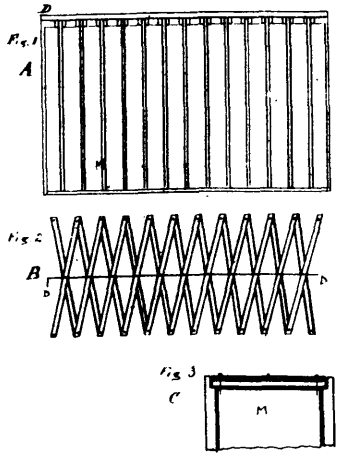
32455 McKay's Barrel Stand.



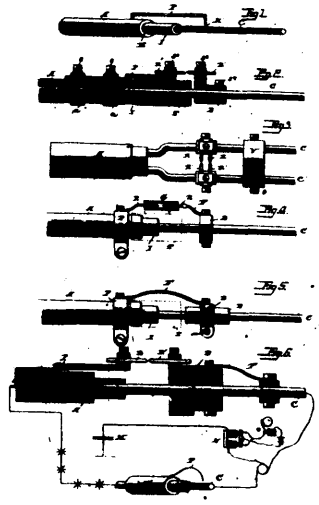
32456 Smith's Spoke Socket.



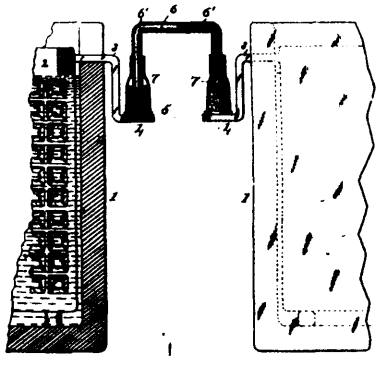
32458 Williams' Steam Engine.



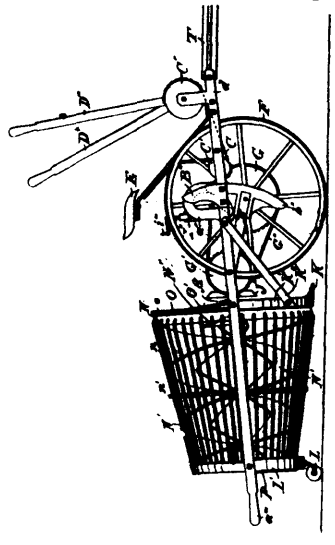
32459 Morrison's Battery for Storing Electricity.



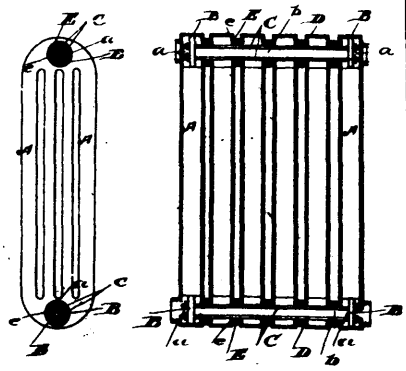
32460 Acheson's Device for Protecting Electric Conductors.



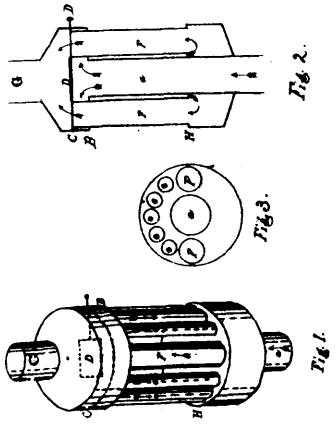
32461 Barrett's Connector for the Elements of Electric Batteries.



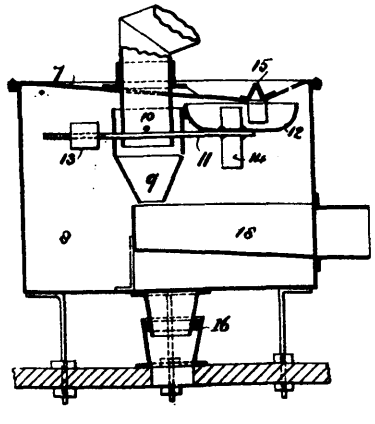
32462 Horner's Potato Digger and Picker.



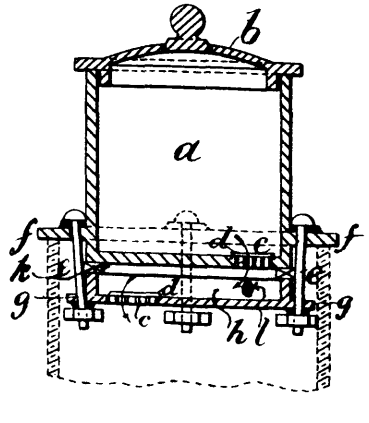
32463 Seller's Radiator Coupling.



32464 Dobbin's Stove Drum.

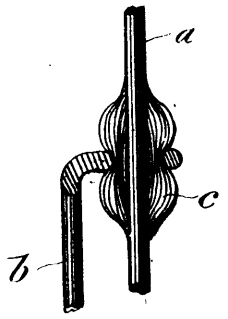


32465 Sayer's Water Works.

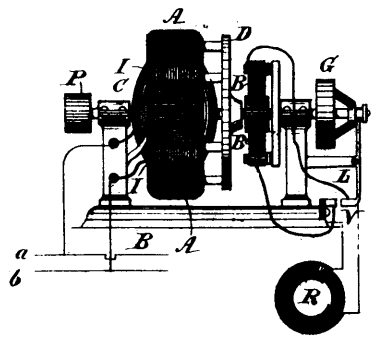


32466 Sayer's Filter.

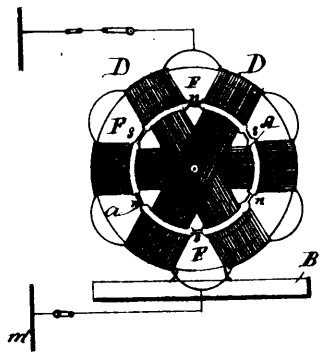
32467 Lemp's Method of Making Connections with Carbon.



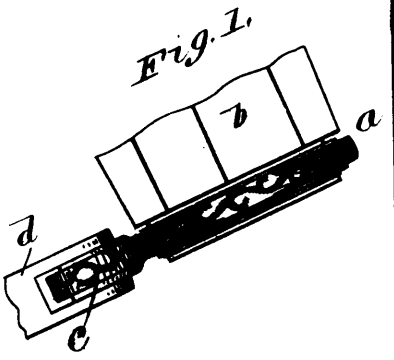
32468 Lemp's Connection between Carbon and other Bodies.



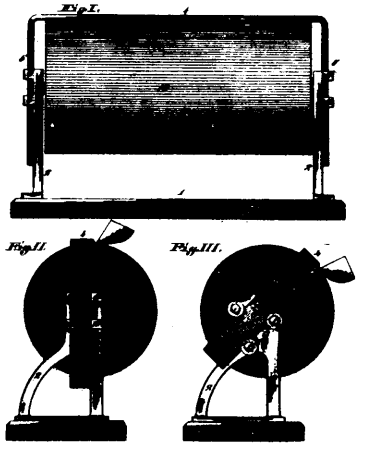
32469 Thomson's Electric Motor.



32470 Thomson's Electric Motor.

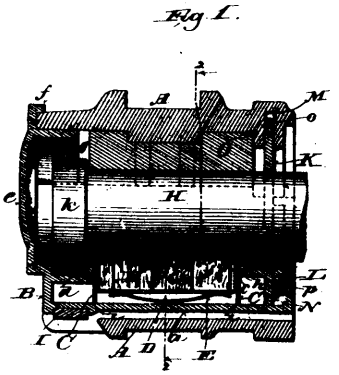


32471 Hoffmann's Method of Ornamenting Watch Case Centres, etc.

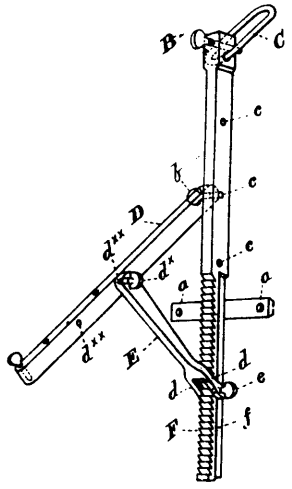


32472 Ehrlich's Paper Cutter.

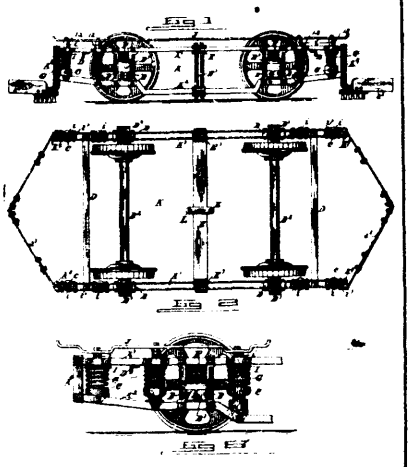
32473 Connett's Car Mover.



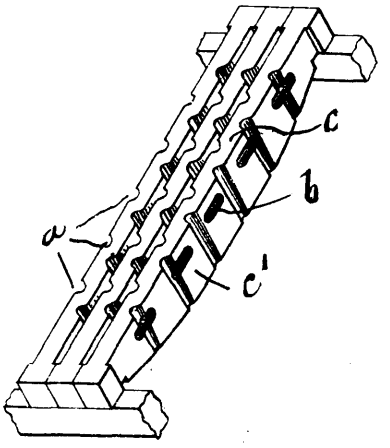
32474 Hays & Read's Journal Box.



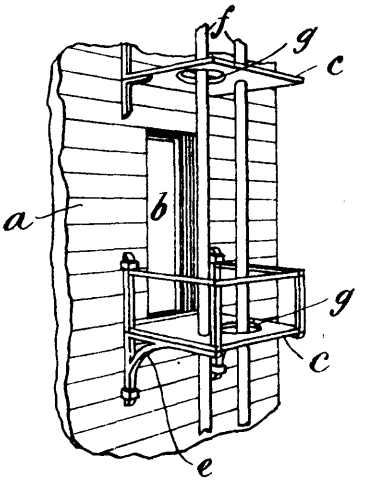
32475 Brace's Scaffold Bracket.



32476 Manier's Car Truck.

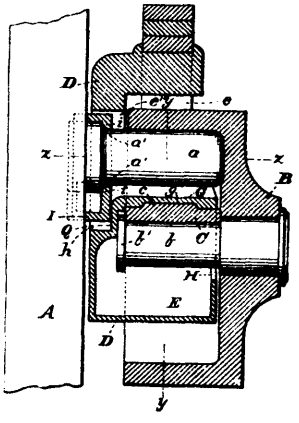


32477 Elliott's Grate Bar.

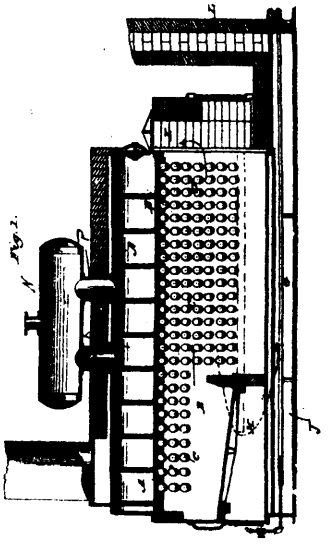


32478 Jones' Fire Escape.

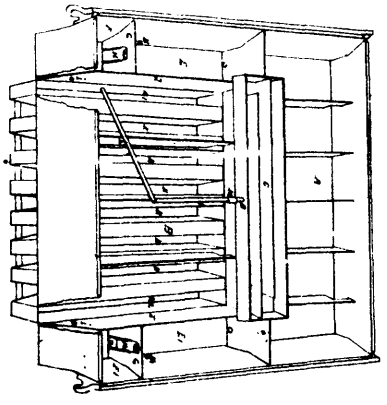
Fig. 3.



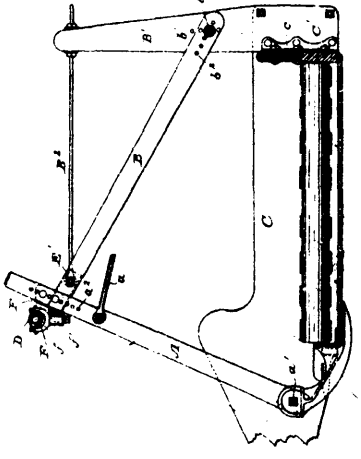
32479 Fulmer & Fry's Journal Box and Bearing.



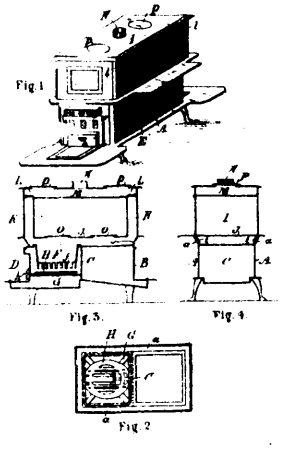
32480 Kingsley's Steam Boiler.



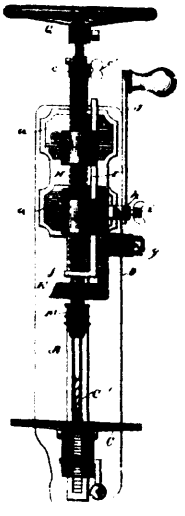
32481 Hall & Wright's Sugar Sap Evaporator.



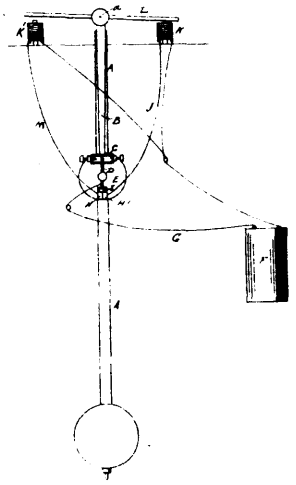
32482 Davis' Reel Support for Harvesters.



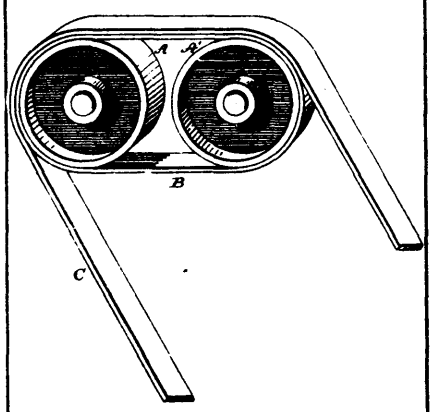
32483 Gadoury's Wood and Coal Stove.



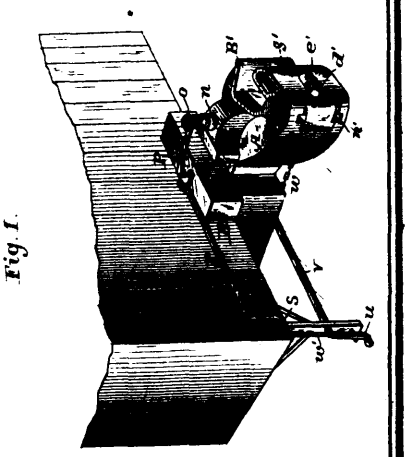
32484 Longwell's Boring Machine.



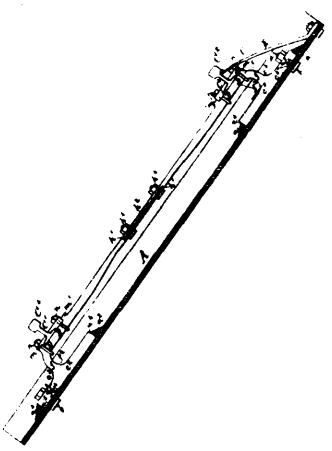
32485 Hess' Electric Clock.



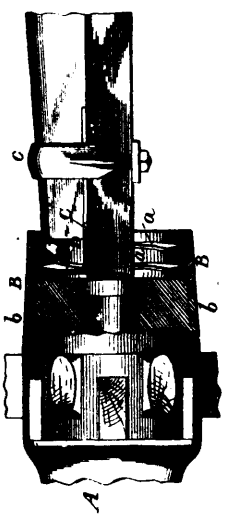
32486 Lough's Belt Gearing.



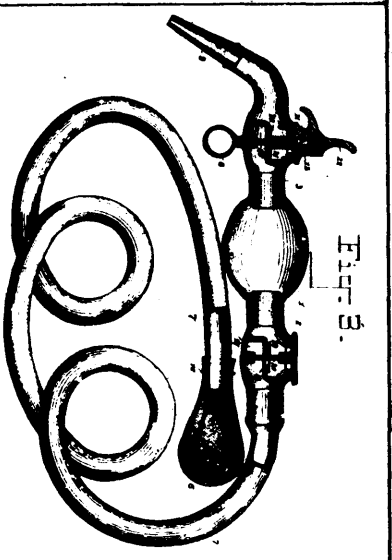
32487 Hinson's Car Coupler.



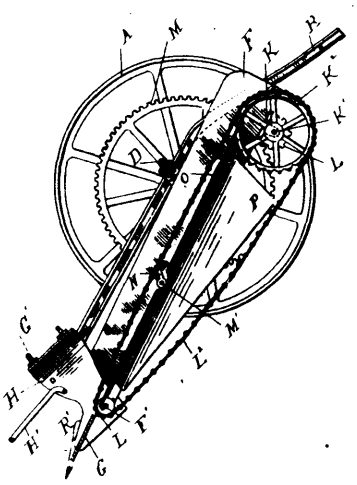
32488 Ellicott's Railroad Tie.



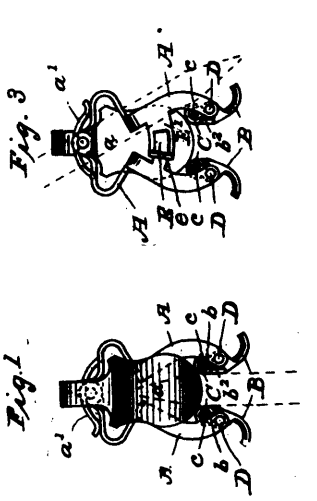
32489 Peebles' Sand Band, etc.



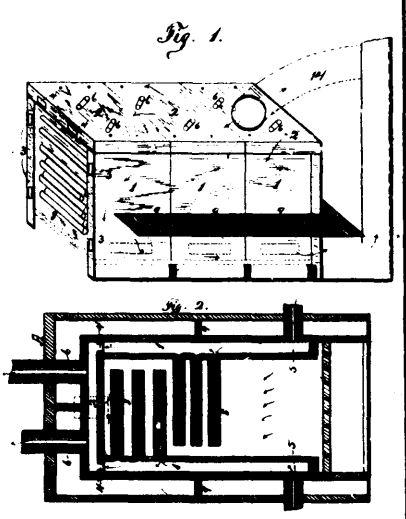
32490 Siersdorfer's Siphon.



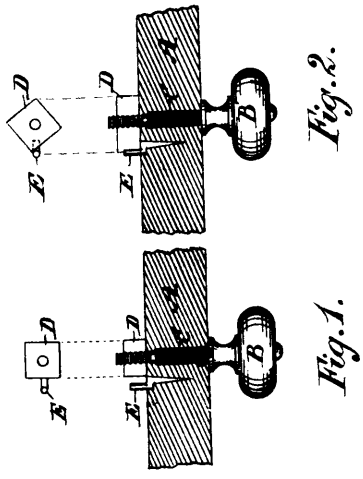
32491 Woodard's Potato Digger.



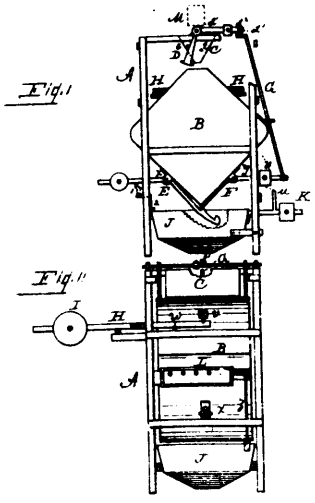
32492 Stafford's Pencil Sharpener.



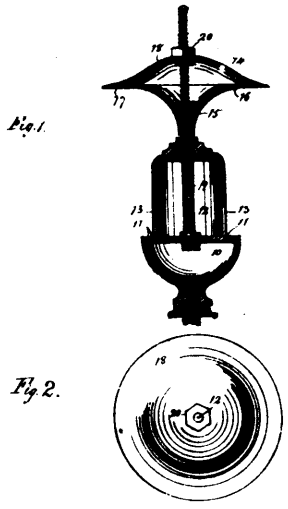
32493 Lapp's Boiler.



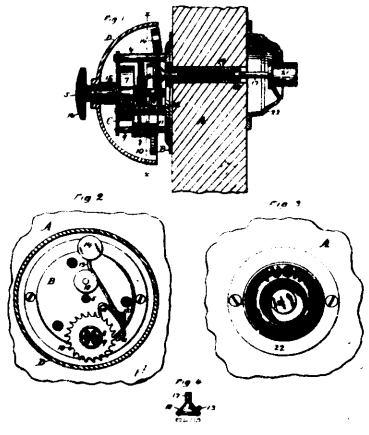
32494 Ross' Nut Lock.



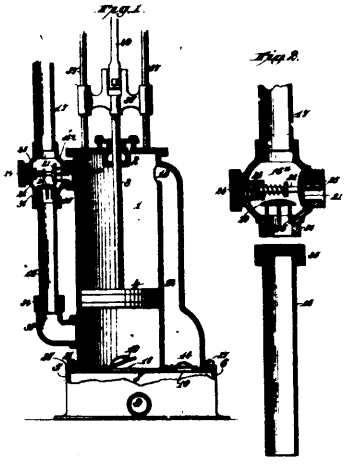
32495 Hoover's Grain Weigher.



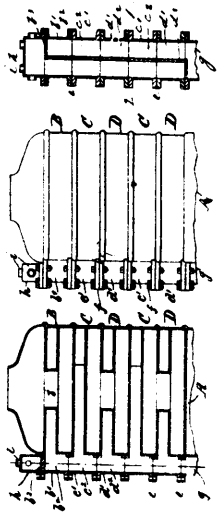
32496 Eldridge's Whistle.



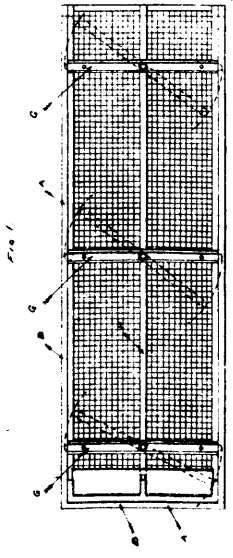
32497 Leach's Door Bell.



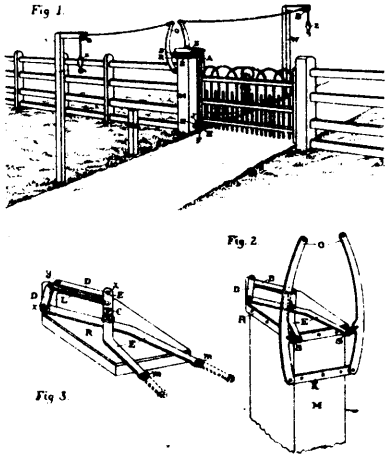
32498 Reiling's Pump.



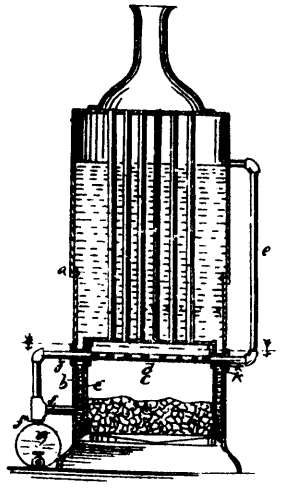
32499 Spence's Water Heater.



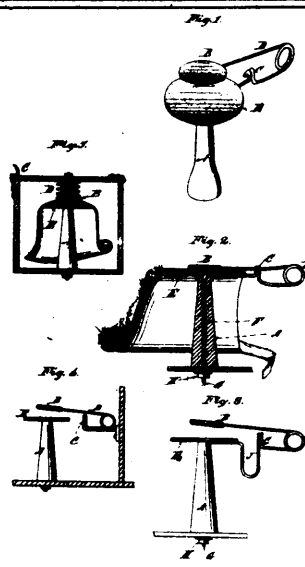
32501 Alves' Concentrating Table.



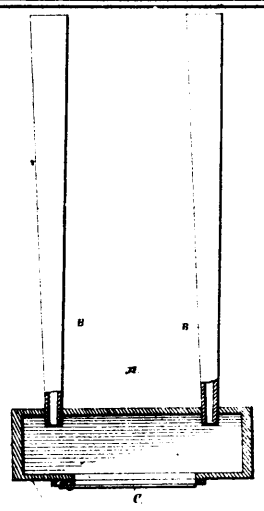
32502 Gustin's Drive Gate.



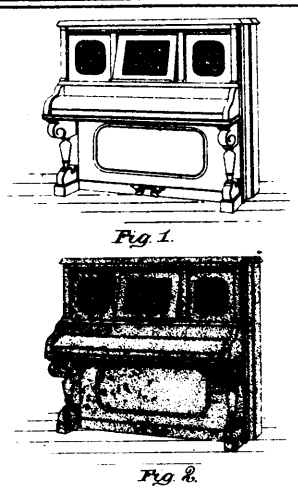
32503 Ellis's Steam Boiler, etc.



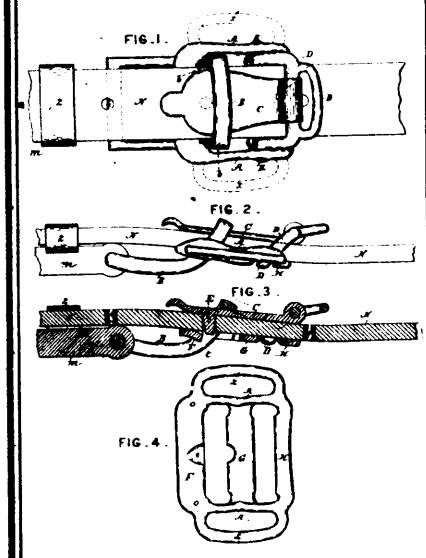
32504 **Fuller's Device for Holding Head Gear.**



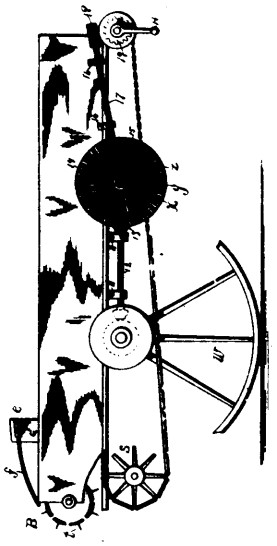
32505 **Stafford's Pipes for Organs.**



32506 **Smith's Piano.**

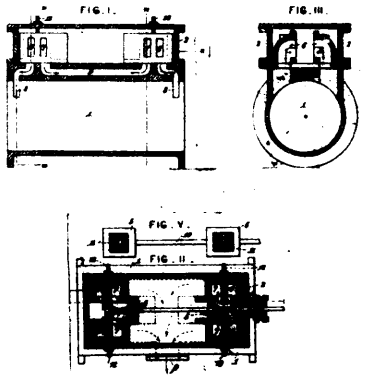


32507 **Coleman's Trace Buckle.**

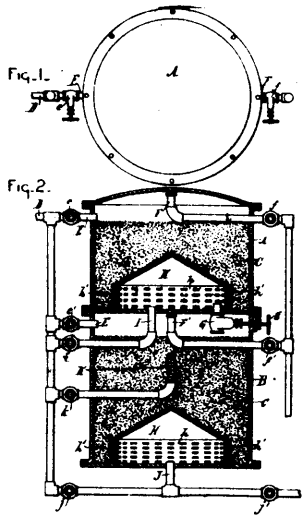


32508 **Josleyn's Fertilizer Distributer.**

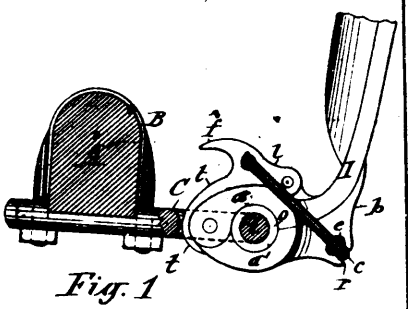
32509 **Marshall's Fruit Picker.**



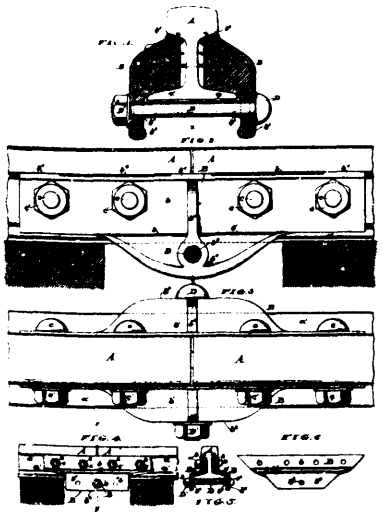
32510 **Robinson's Slide Valve.**



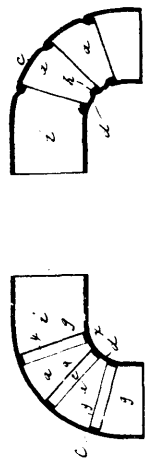
32511 **Bowden's Filter.**



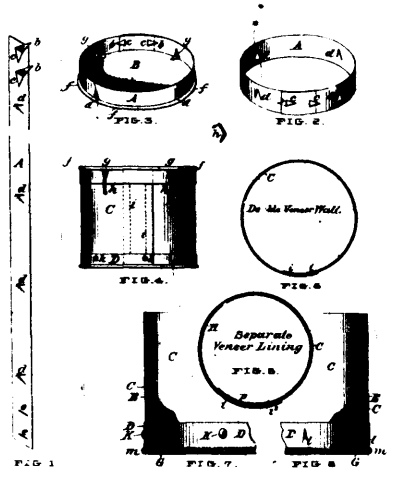
32512 **Miller & Wright's Thill Coupling.**



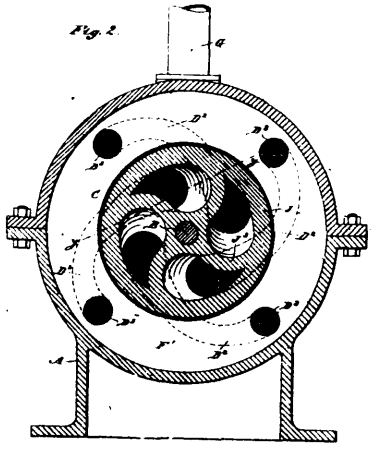
32513 Cloud's Rail Joint.



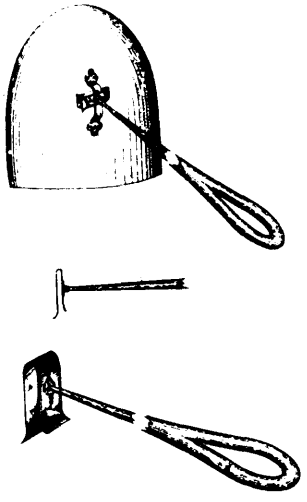
32514 Cooper's Pipe Elbow.



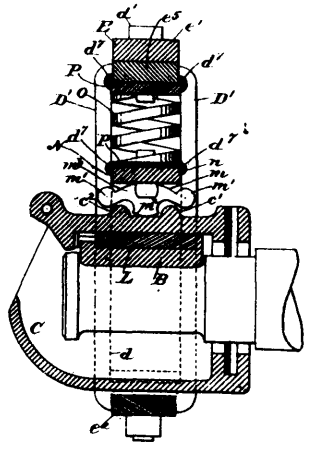
32515 Bradley's Butter Package.



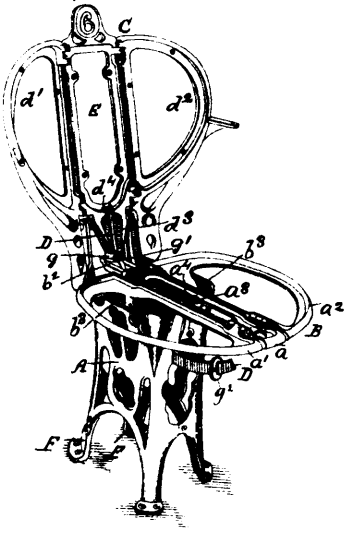
32516 Buford's Rotary Engine.



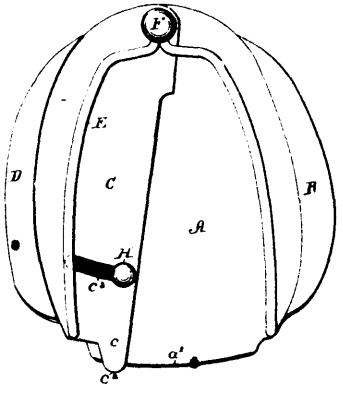
32517 Coté's Grate Blower Handle.



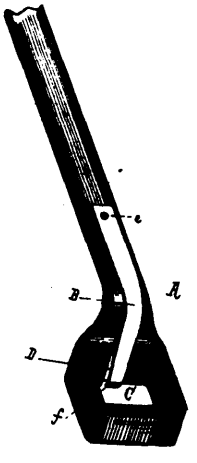
32518 Sisum's Car Truck.



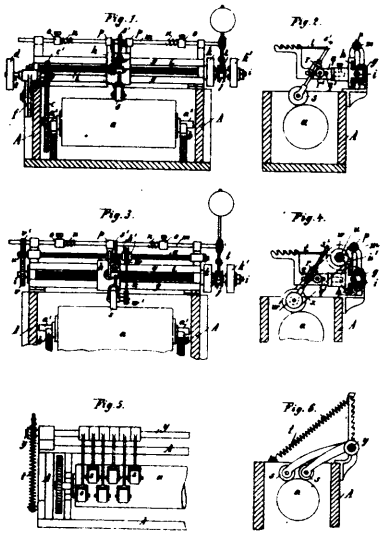
32519 Granger's Opera Chair.



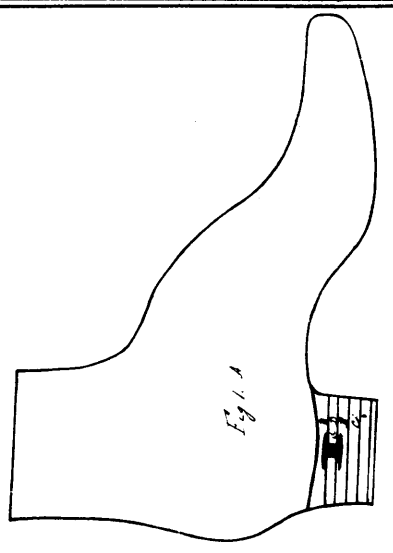
32520 Hamlin's Snow Plate for Horse Shoes.



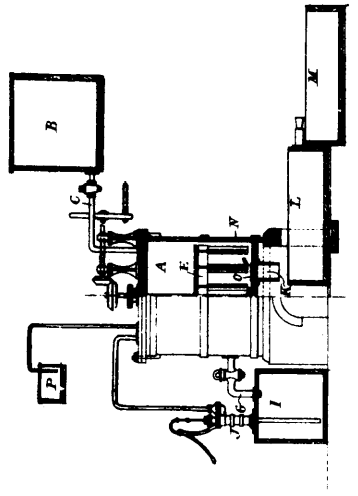
32521 Kyle's Carriage Wrench.



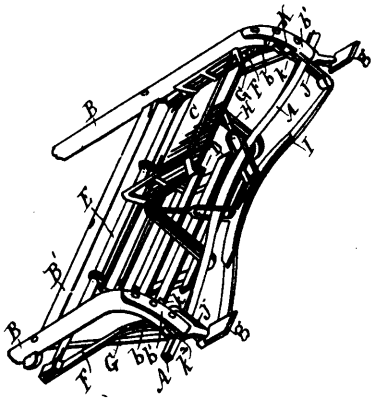
32522 Elmore's Electro Deposition of Metals, etc.



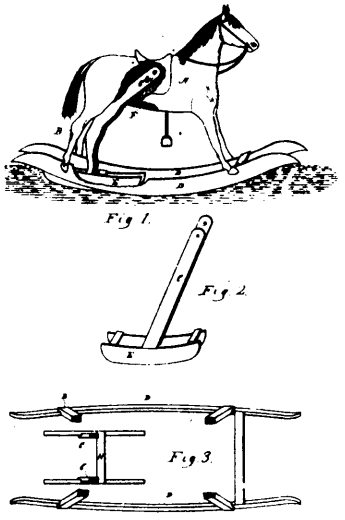
32523 Salter's Boot and Shoe Heel.



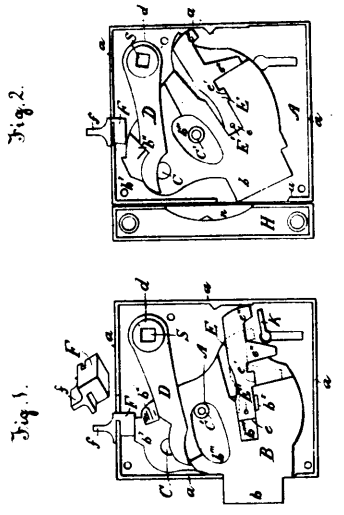
32524 McIvor's Production of White Lead.



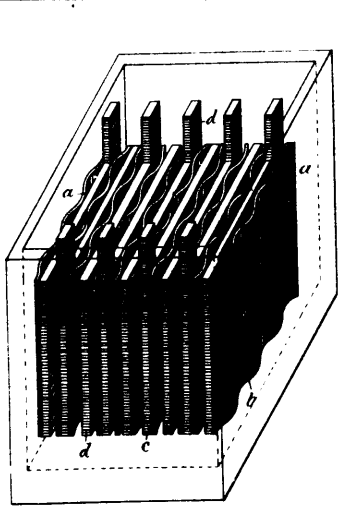
32525 Brabb & Smith's Road Cart.



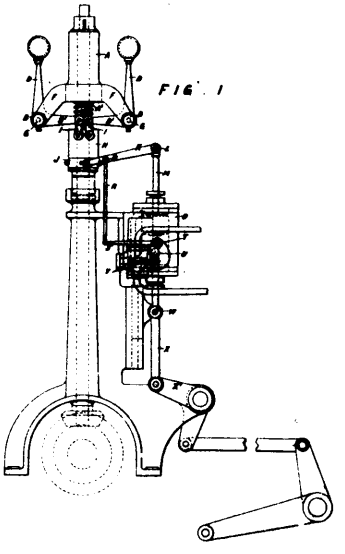
32526 Wade's Rocking Horse.



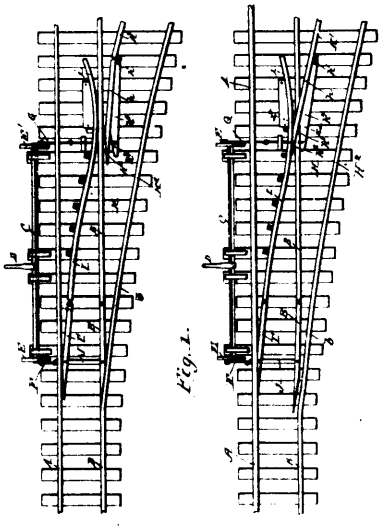
32527 Sandford's Latch and Lock.



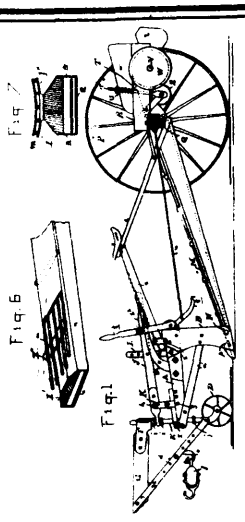
32528 Currie's Insulator for Electric Batteries.



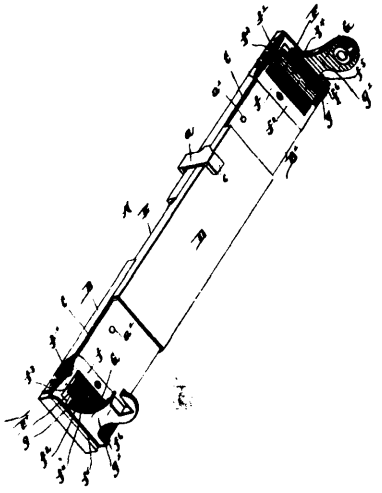
32529 Dales' Steam Engine.



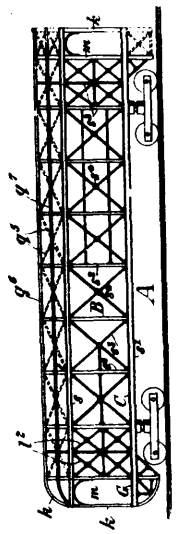
32530 Knight's Railroad Switch.



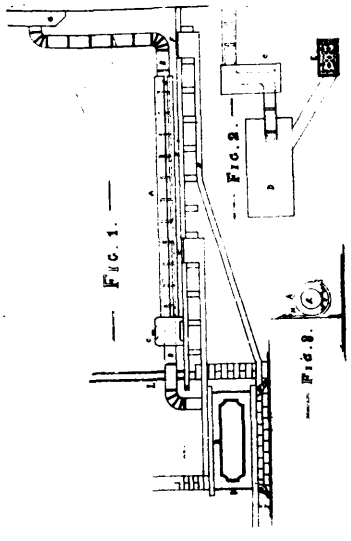
32531 Nogar's Ditching Plough.



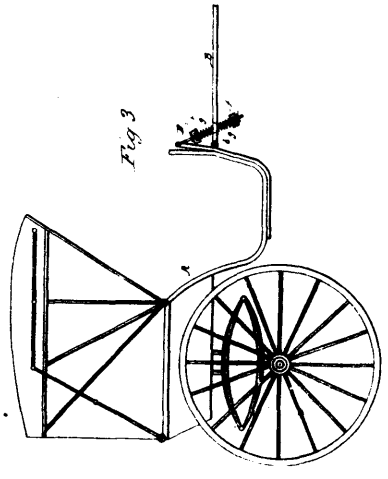
32533 Dunkle's Strip for Window Shade Rollers.



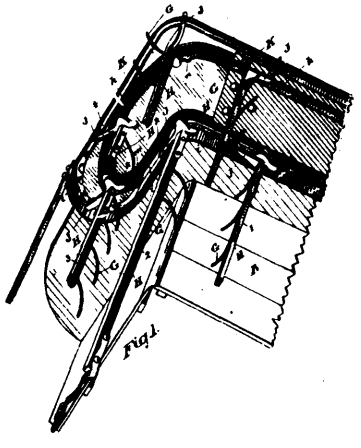
32534 Zurcher's Frame for Railway Cars.



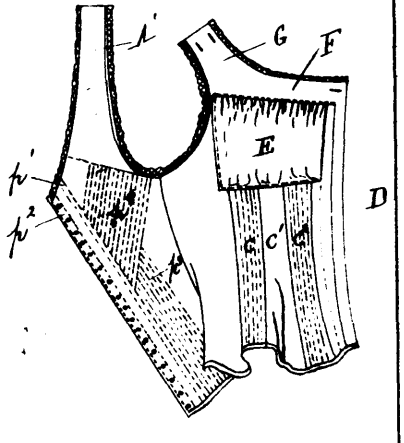
32535 Millard's Heating Schools, Churches, etc.



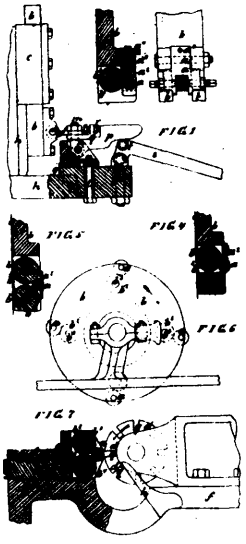
32536 Sproule's Shaft Attachment for Vehicles.



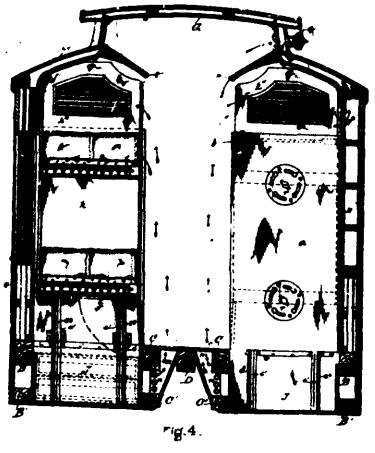
32537 Mercer's Harvester Binder.



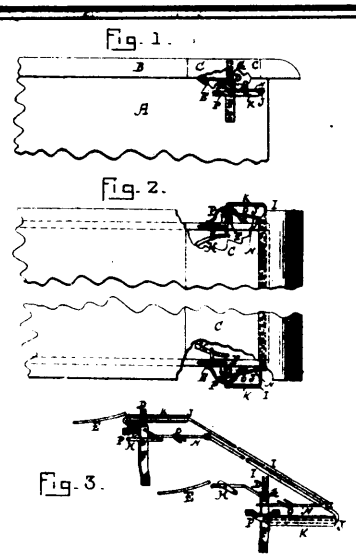
32538 Traver's Corset.



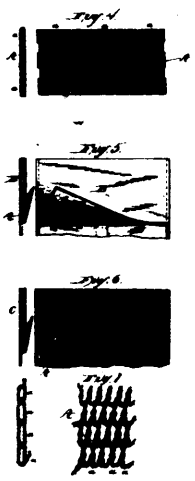
32539 Anderson's Machinery for Manufacturing Clips on Horse Shoes.



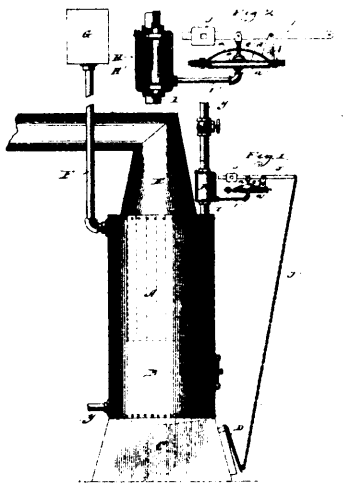
32540 Harris' Railway Car.



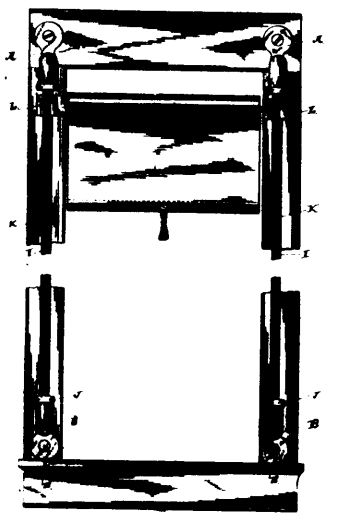
32541 **Klinker's Railway Car.**



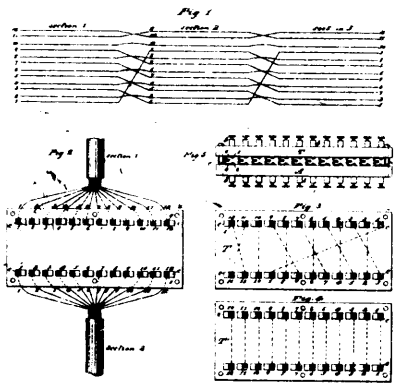
32542 **Emerson & Midgley's Belting.**



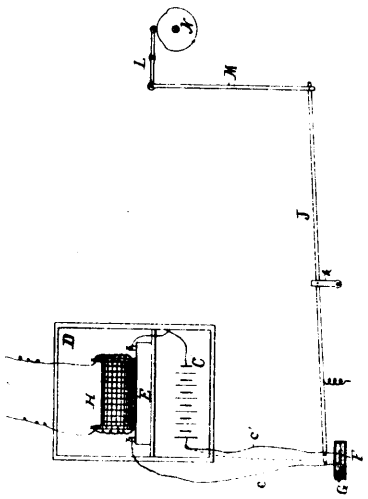
32543 **Power's Draft Regulator.**



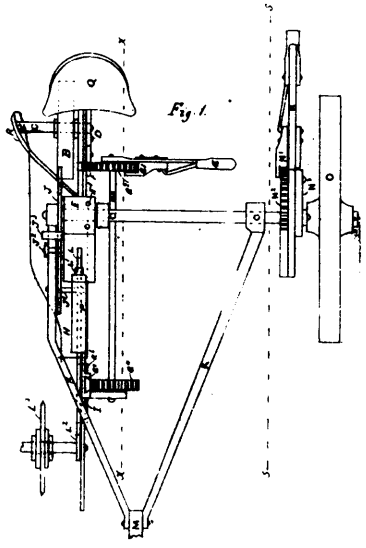
32544 **Bassett's Curtain Fixture.**



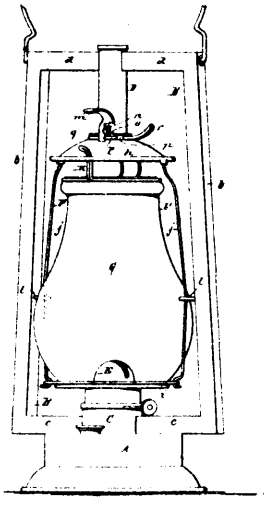
32545 **Reilly's Connecting Device for Electric Circuits.**



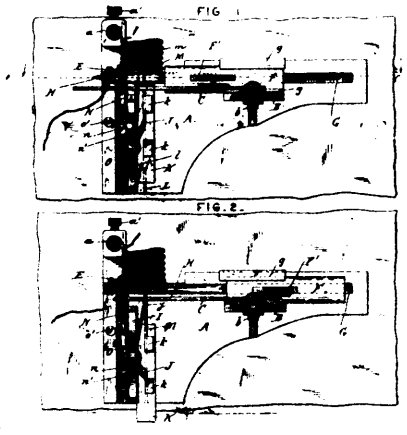
32546 **Shanck's Electrical Spark Producer.**



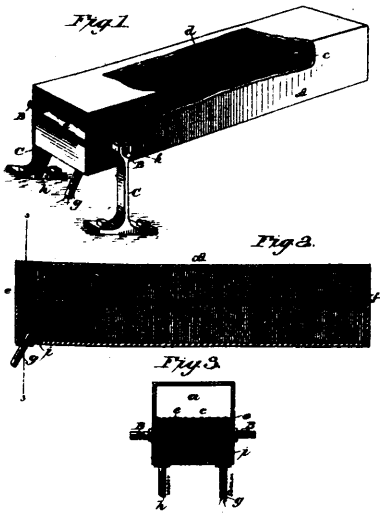
32547 **Russ' Sulky Plough.**



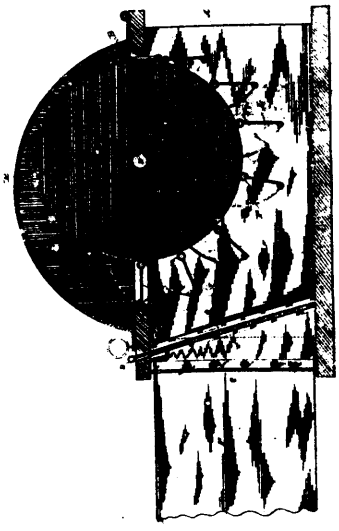
32548 **Stetson's Tubular Lantern.**



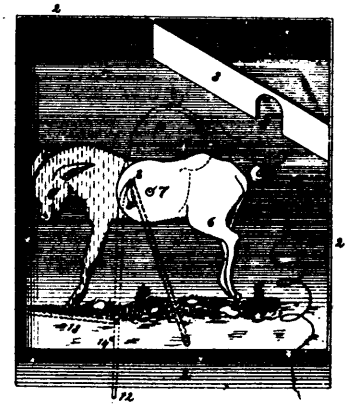
32550 **Perkin's Attachment for Sewing Machines.**



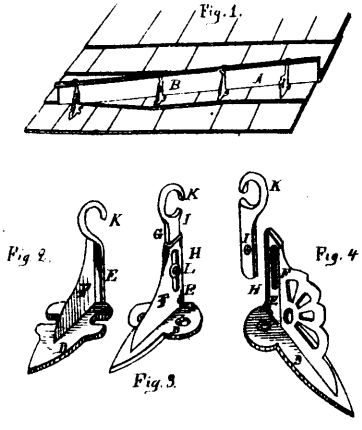
32551 Atkins' Grain Steamer.



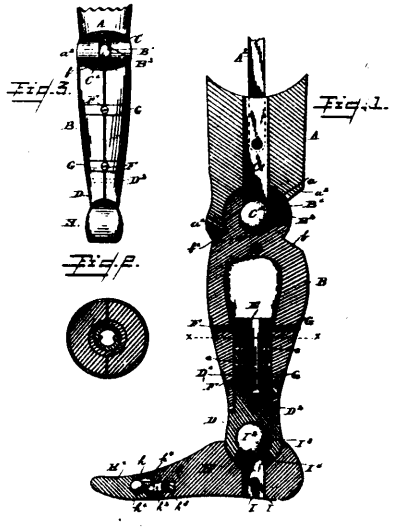
32552 Brown's Water Motor.



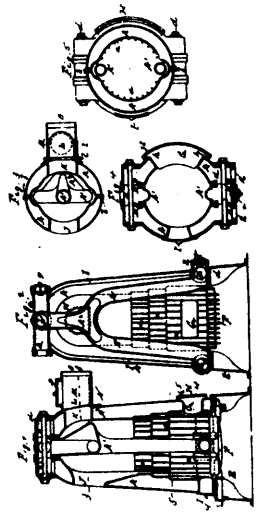
32553 Goodwin's Mechanical Toy.



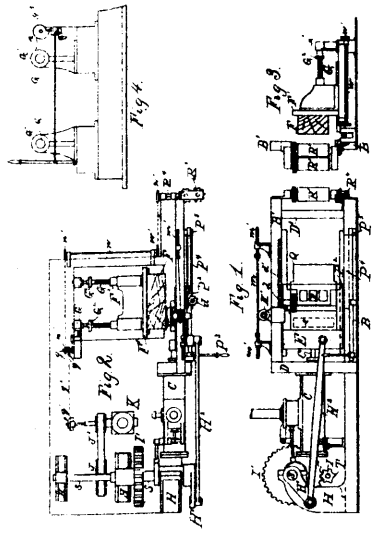
32554 Sawyer's Bracket for Eaves' Troughs.



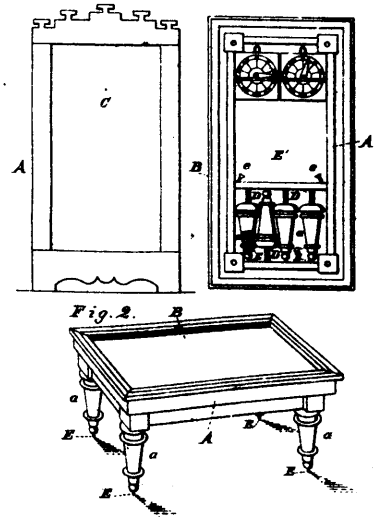
32555 Snyder's Artificial Leg.



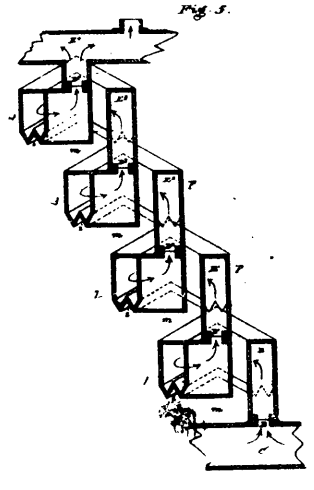
32556 Keith's Hot Water Boiler.



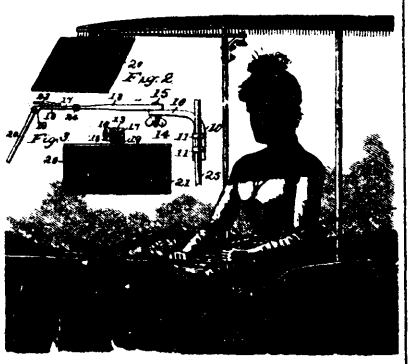
32557 Crane's Machine for Cutting Boards.



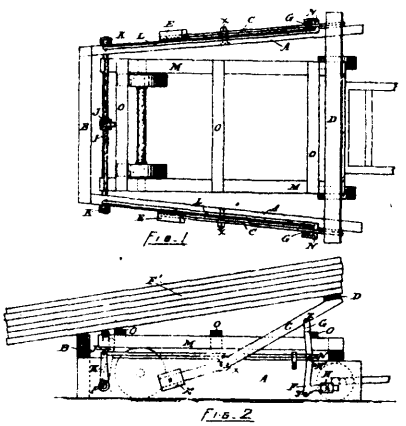
32558 Flint's Billiard Table.



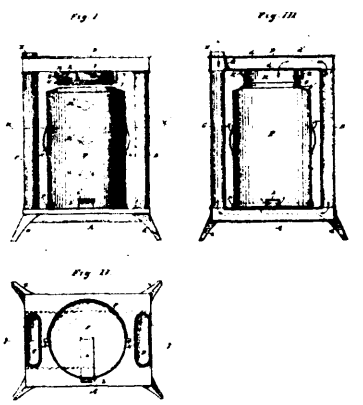
32559 Andrus' Water Heater.



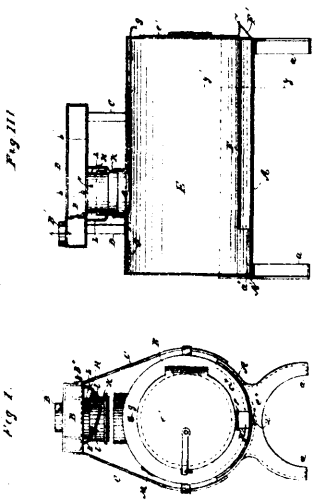
32560 Luce's Sunshade for Vehicles.



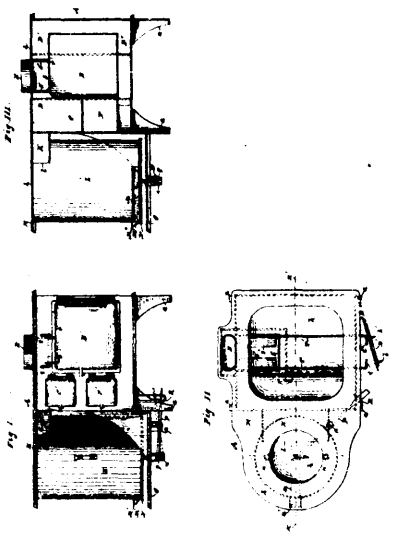
32561 Nadeau's Apparatus for Loading Lumber.



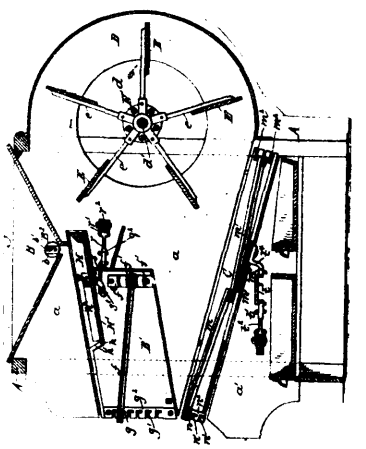
32562 Laube's Straw-Burning Stove.



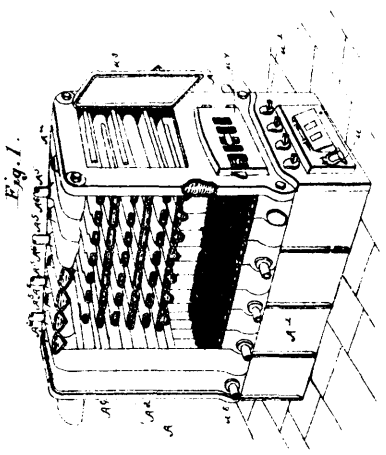
32563 Laube's Straw-Burning Stove.



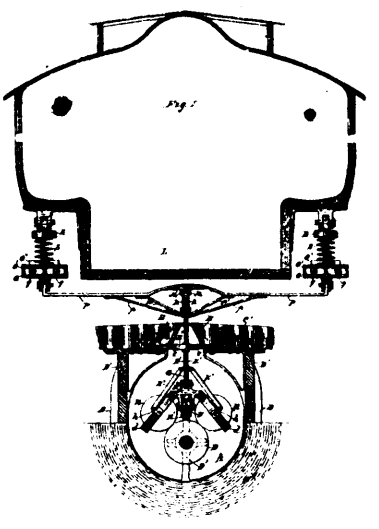
32564 Laube's Straw-Burning Cook Stove.



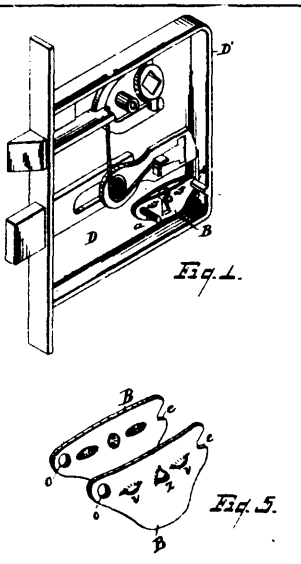
32565 Krake's Grain Separator.



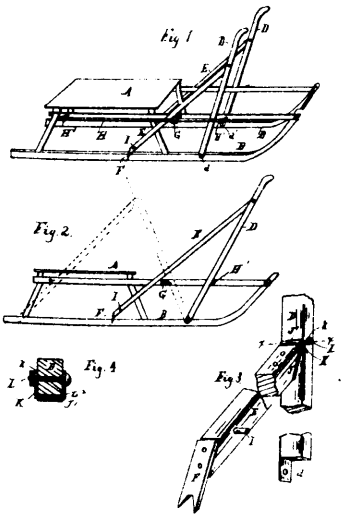
32566 Boynton's Hot Water Heating Apparatus.



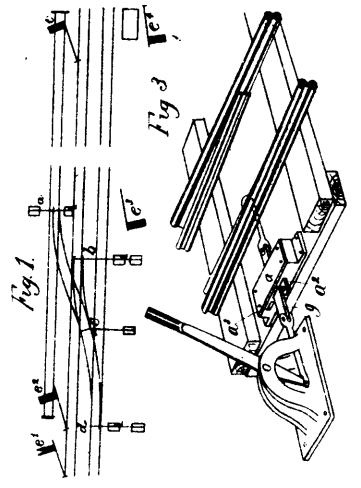
32567 Judson's Street Railway.



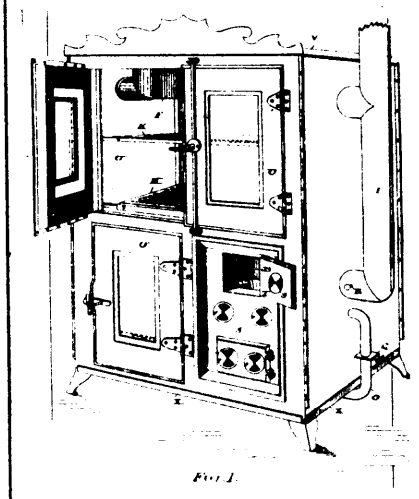
32568 Stoddard's Lock Case Attachment.



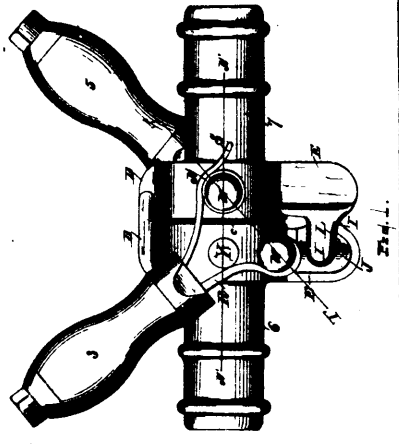
32569 Robbin's Sled Propeller.



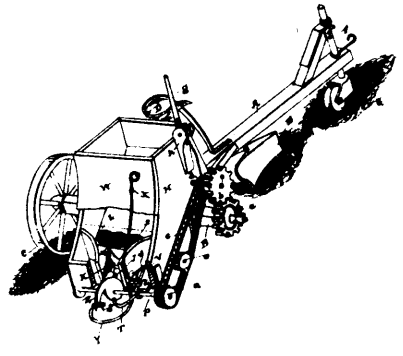
32570 Dutton's Locking and Unlocking Railway Points, etc.



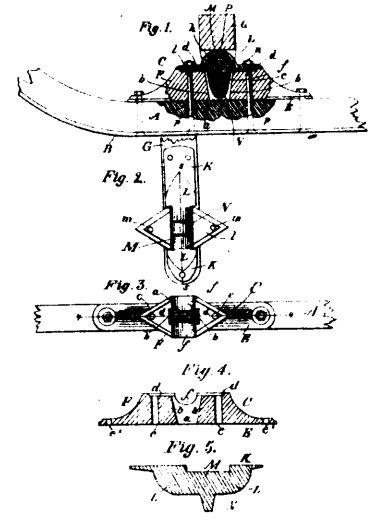
32571 Hubbard's Baking Oven.



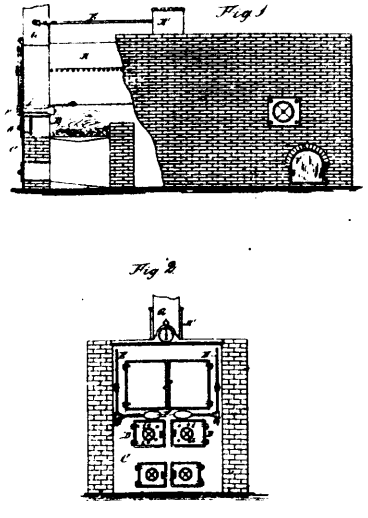
32572 Murdock's Car Coupler.



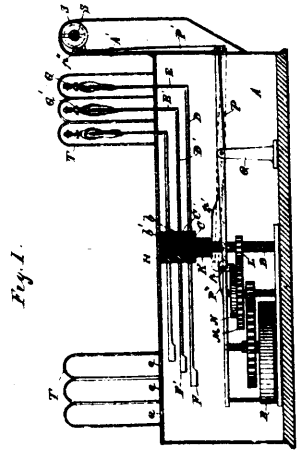
32573 Freyer's Potato Planter.



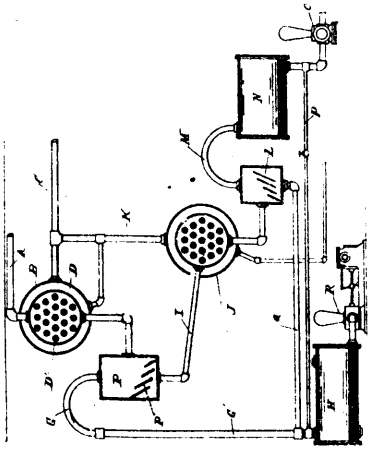
32574 Reynold's Sleigh Knee.



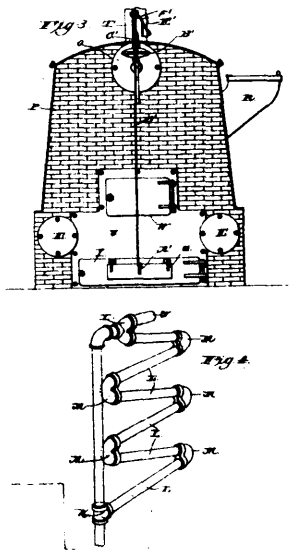
32575 Tinkham's Smoke Consumer.



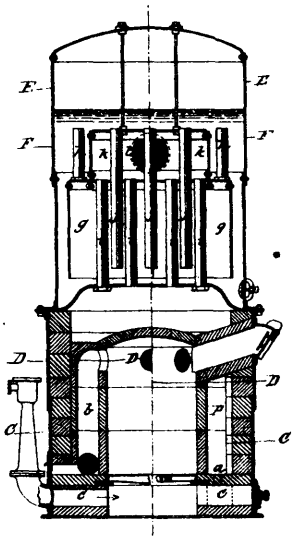
32576 Lang's Race Course.



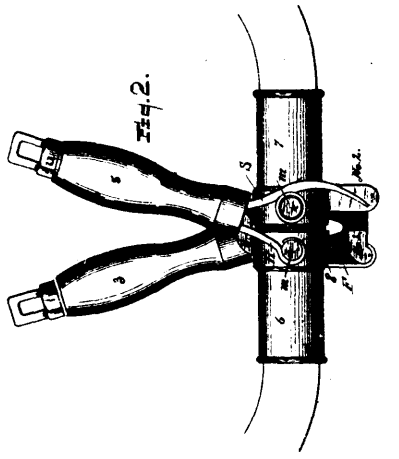
32577 Wehrle's Wine Machine.



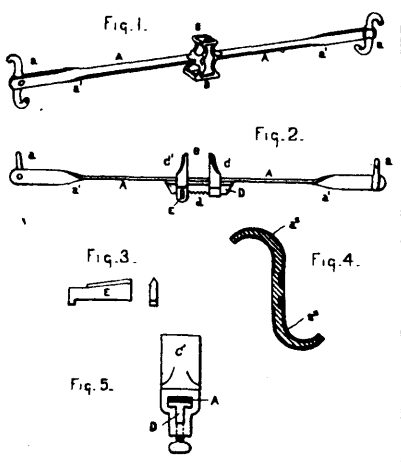
32578 Dimmick & Smith's Steam Boiler.



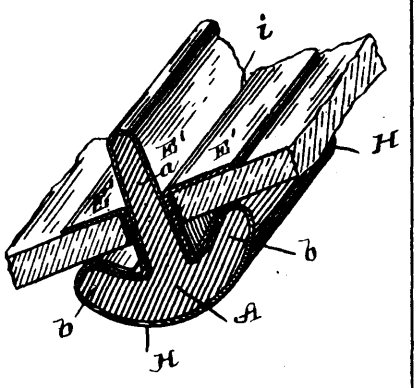
32579 Taylor's Steam Generator.



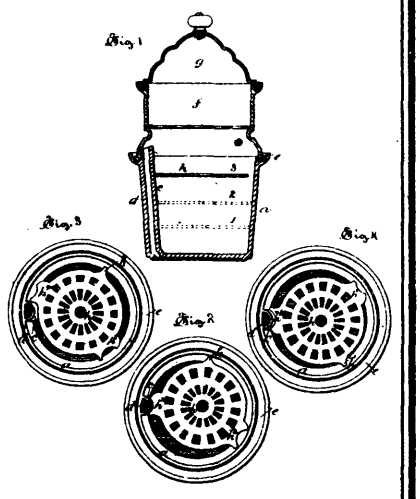
32580 Murdock's Car Coupler.



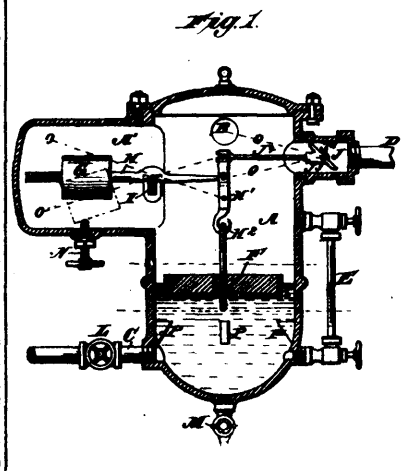
32581 Wegner's Carriage Wrench.



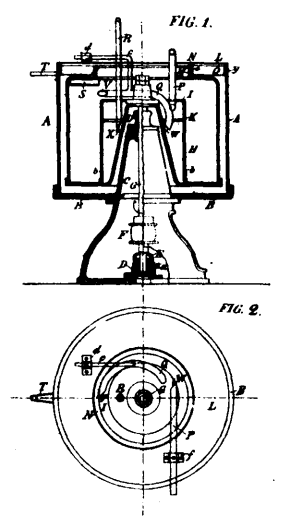
32582 Pennycook's Metallic Glazing.



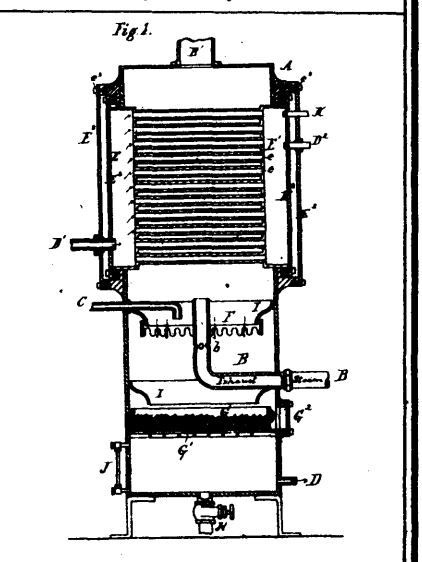
32583 Whitney's Culinary Utensil.



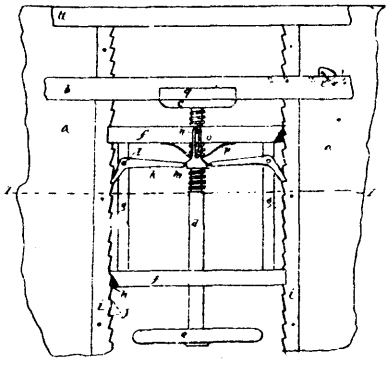
32584 Thoens' Feed Water Regulator.



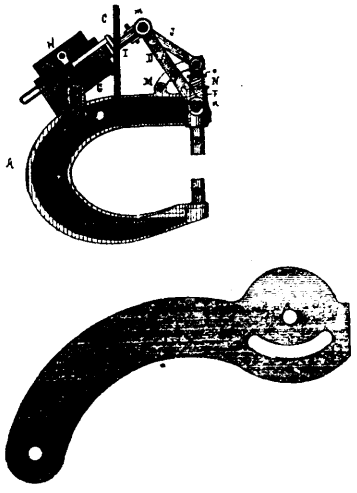
32585 Norlow's Apparatus for Manufacturing Butter.



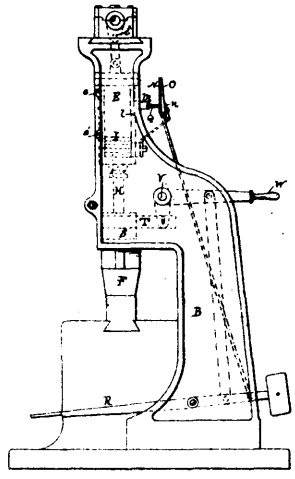
32586 Luthy's Feed Water Heater.



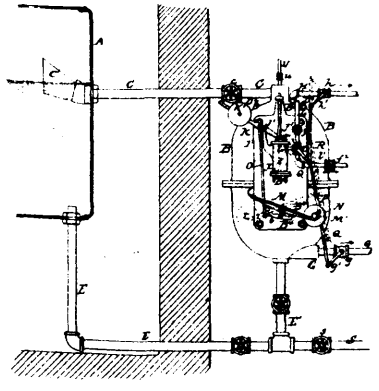
32587 Loring's Bench Clamp.



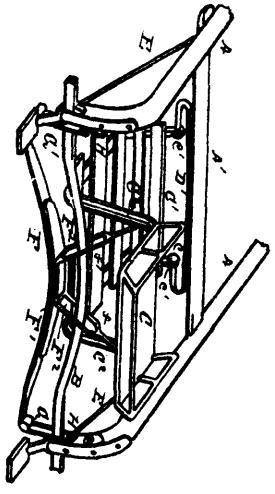
32588 Ingalls' Rivetting Machine.



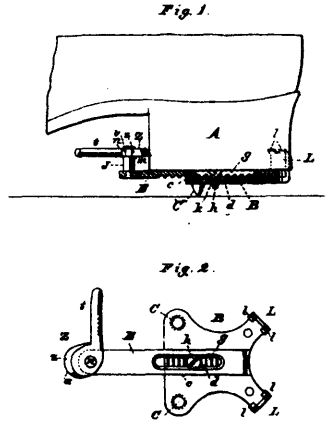
32589 Glossop's Pneumatic Hammer.



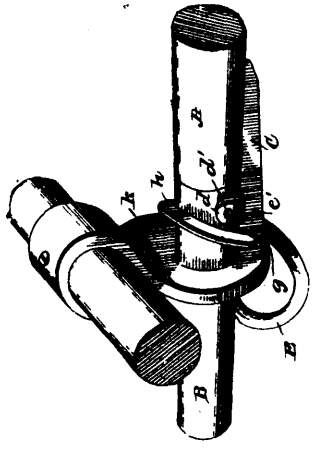
32590 Roake's Cleaning Apparatus for Steam Boilers.



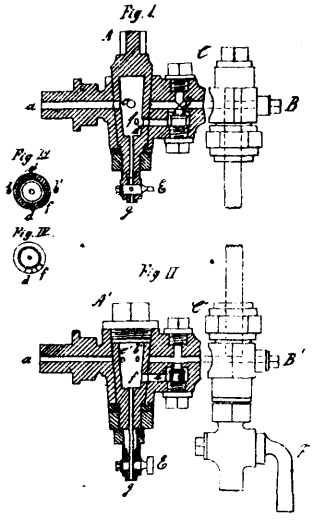
32591 Hill's Road Cart.



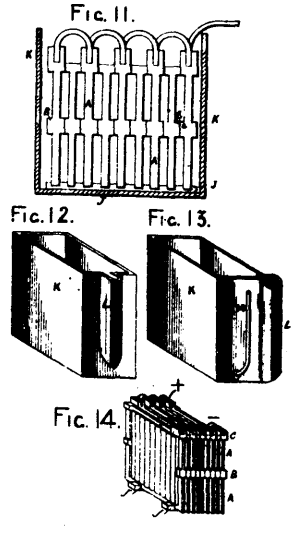
32592 Coe's Ice Creeper.



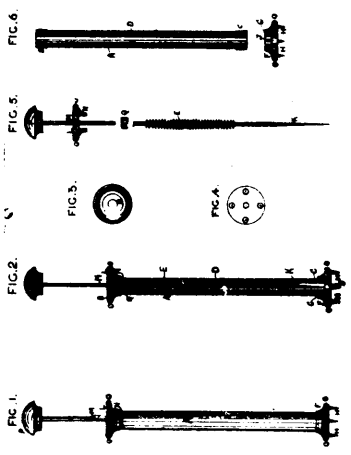
32594 Wilson's Vehicle Pole Tip.



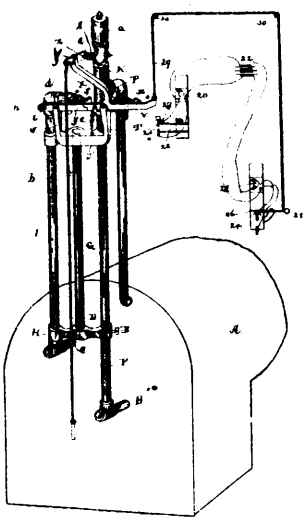
32595 Svensson's Water Gauge Cock.



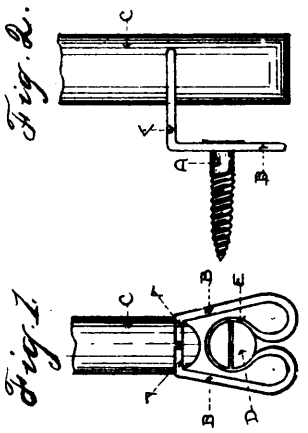
32596 Haslam's Storage Battery.



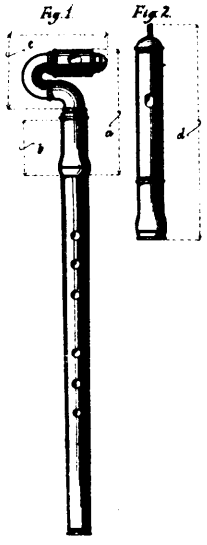
32597 Moore's Tool for Breaking Ice.



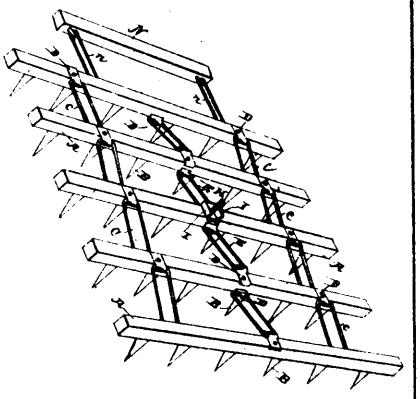
32598 **Gilfillan's Water Alarm for Steam Boilers.**



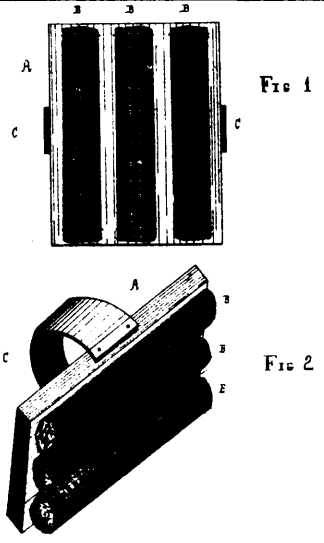
32599 Hall's Device for Holding the Connecting Bar of Window Blind Slats.



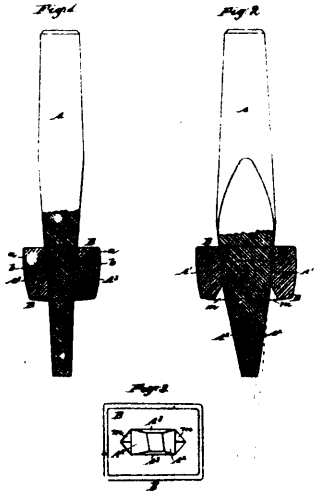
32600 Wunnenberg's Flute.



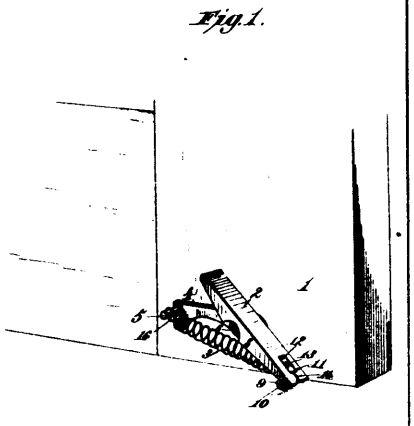
32601 Powell's Harrow.



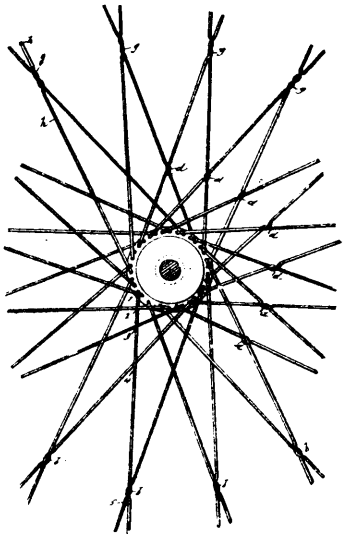
32602 Topping's Currycomb and Brush.



32603 Whiting's Saw Set.



32604 Brohard's Door Check, etc.



32605 Reynolds' Wheel for Velocipedes, etc

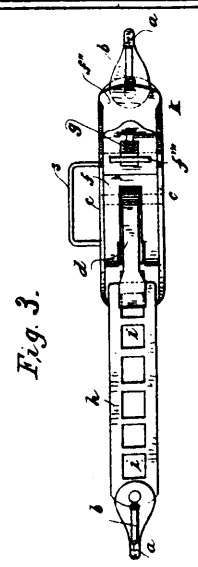
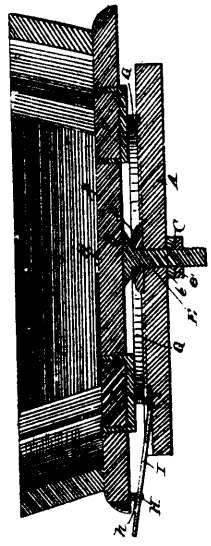
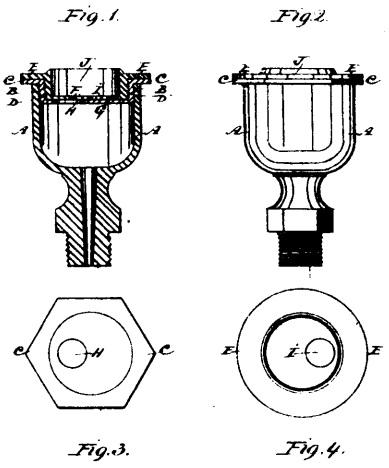


Fig. 3.

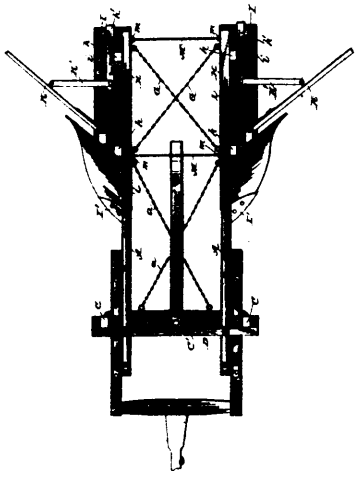
32606 O'Connor's Metallic Buckle, etc.



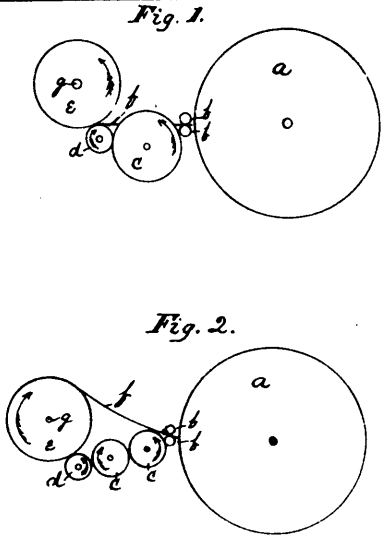
32607 Lee's Cart Seat.



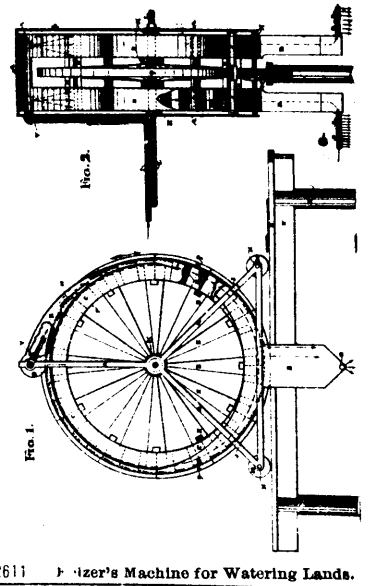
32608 Jones' Cap for Oil Cups, etc.



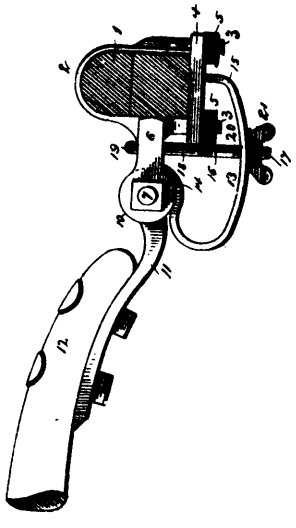
32609 Deadman's Snow Plough.



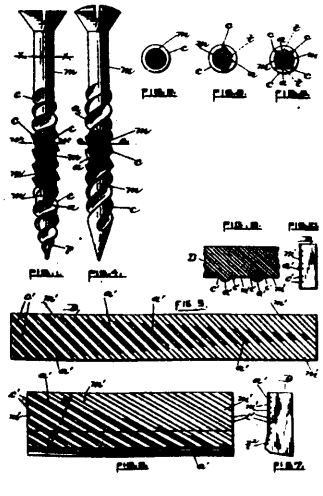
32610 Connelly's Machine for Carding Cotton.



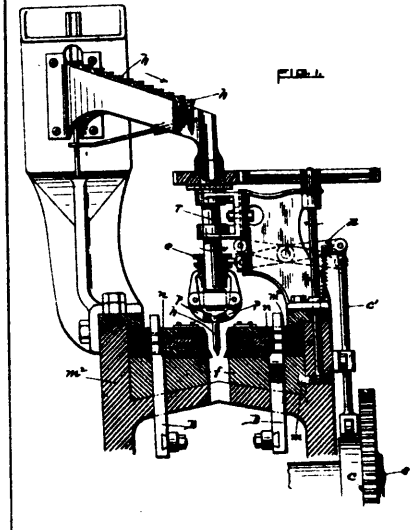
32611 [illegible]izer's Machine for Watering Lands.



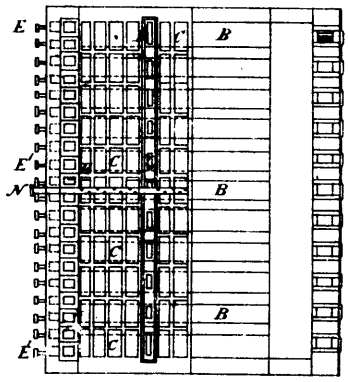
32612 Lee's Anti-Rattler for Thill Couplings.



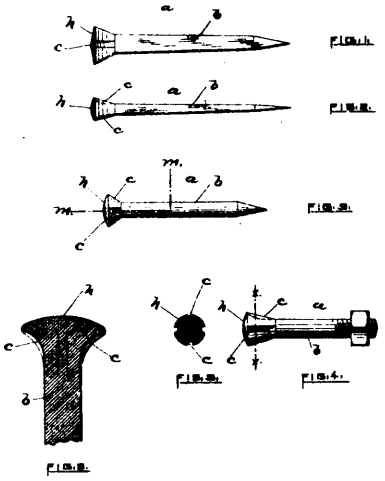
32613 Rogers' Die for Swaging Drive Screws.



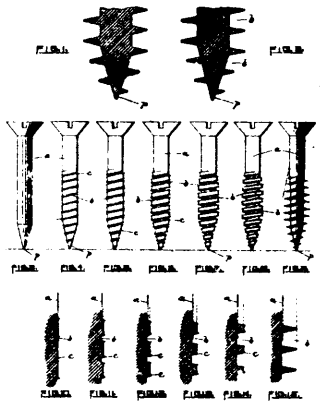
32614 Rogers' Mode of Forming Screw Threads.



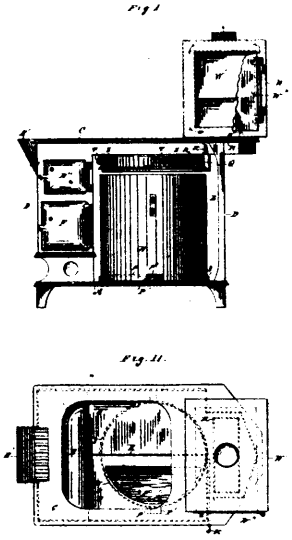
32615 Bouillet's Apparatus for Manufacturing Ultramarine.



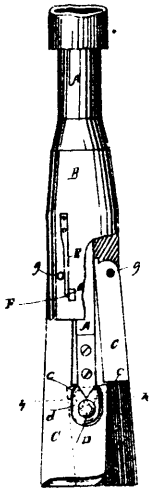
32616 Rogers' Nail, Bolt, etc.



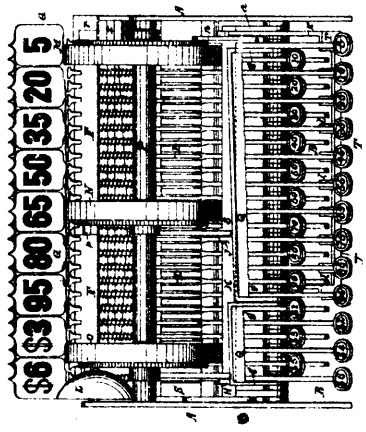
32617 Rogers' Wood Screw.



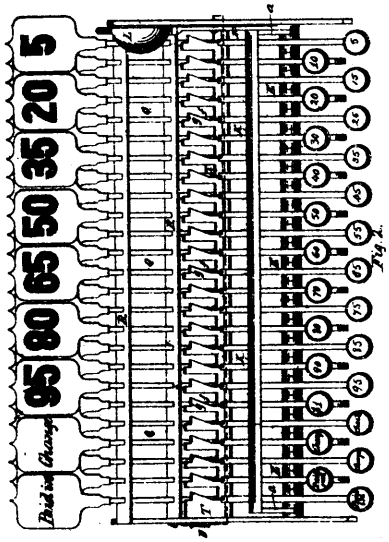
32618 Laube's Straw-Burning Cook Stove.



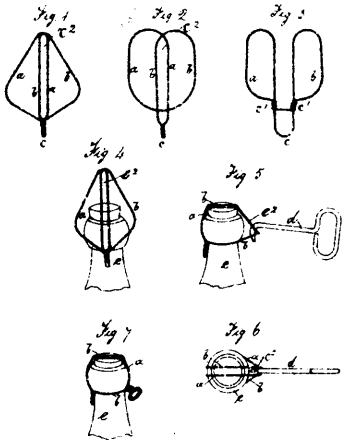
32619 Gall's Drilling Tool.



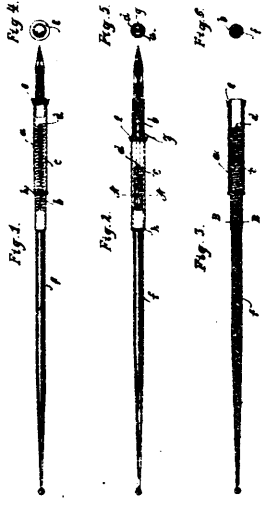
32620 Patterson's Cash Register, etc.



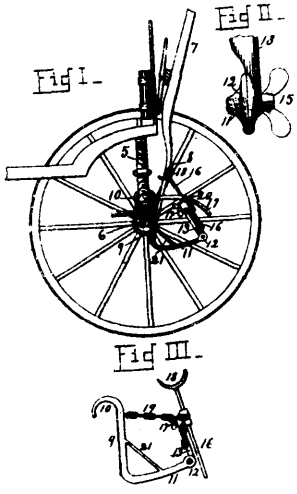
32621 Patterson's Cash Register, etc.



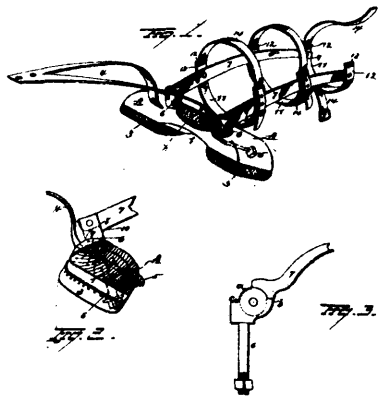
32622 Lozé's Means for Securing Corks, etc.



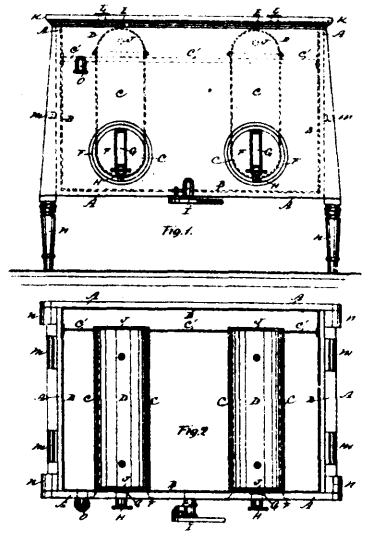
32623 Knade's Penholder.



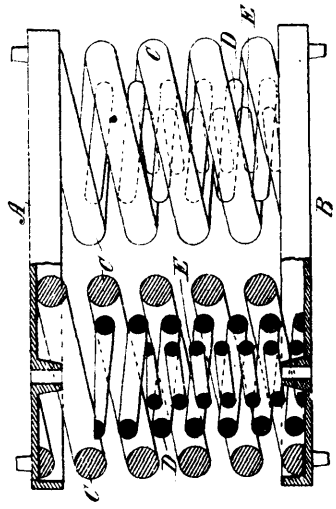
32624 Mayne's Carriage Tongue Support.



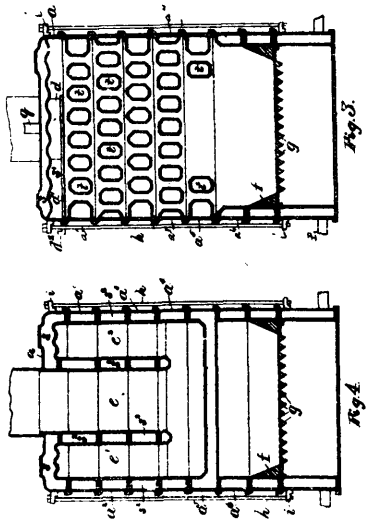
32625 Ellis' Crupper for Harnesses.



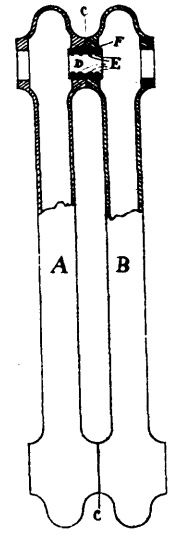
32626 Booker's Creamer.



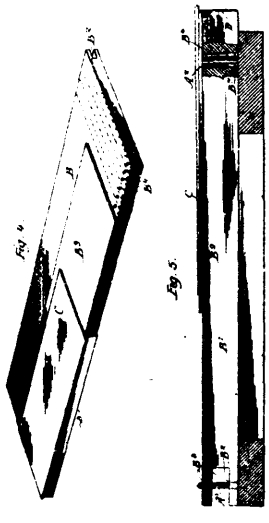
32627 Bellingham's Car Spring.



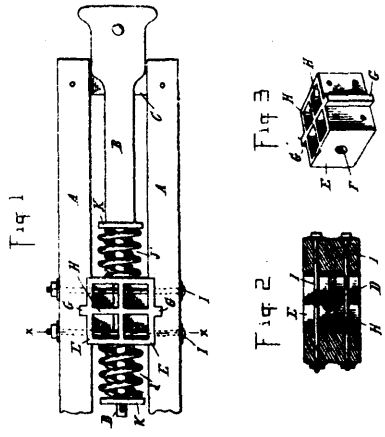
32628 Blackmore's Water Heater.



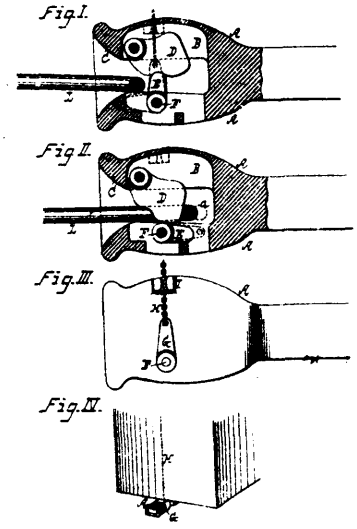
32629 King's Steam or Hot Water Radiator.



32630 Newell's Key Board.



32631 Turner's Draw Bar.



32632 Everett's Car Coupling.

Fig. 2.

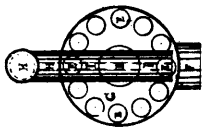
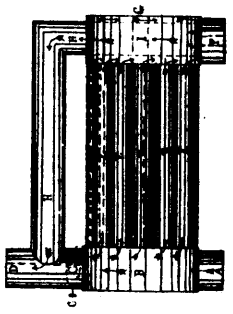
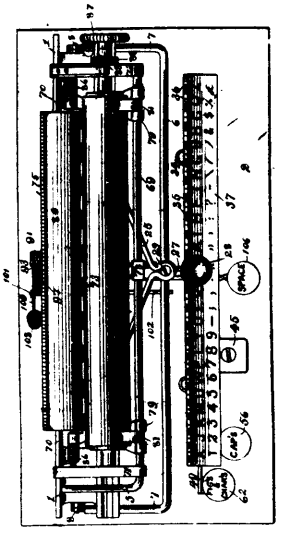


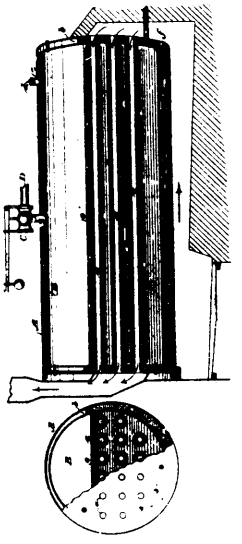
Fig. 1.



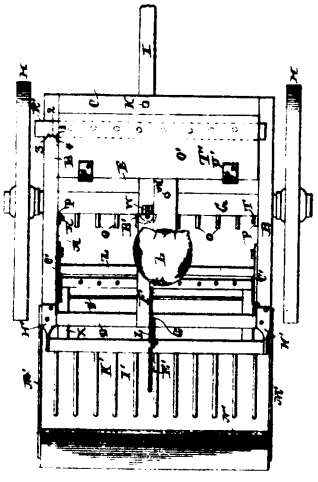
32633 Dobbin's Drum and Radiator



32634 Merritt's Type Writing Machine.



32635 Ludlow's Steam Generator.



32638 Self's Seed Sower, etc.

Fig. 1.

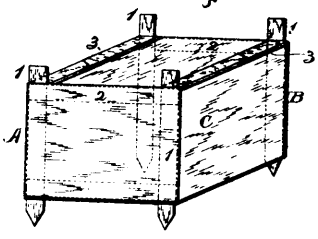


Fig. 2.

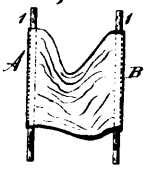
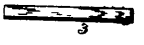
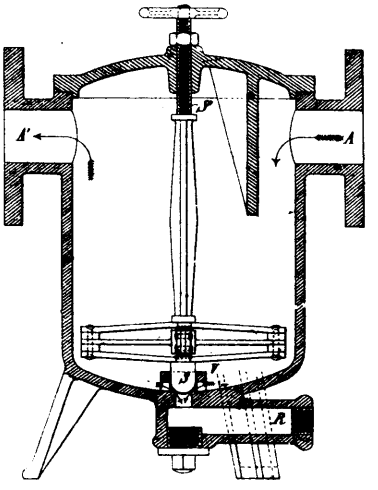


Fig. 3.

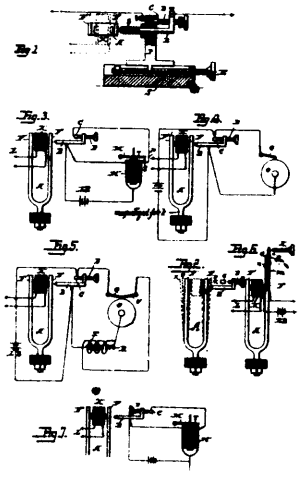


32637 Sherman & Cronche's Plant Protector.

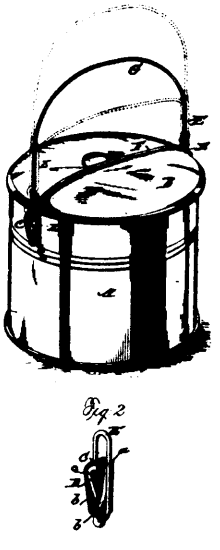
Fig. 11.



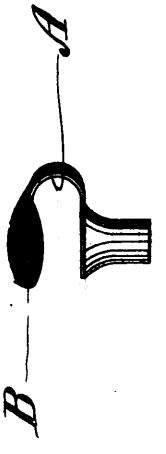
32638 Wach's Heat Expanding Block, etc.



32639 Selden's Telegraph Receiver.



32640 Stukes & Reid's Bucket Ball, etc.



32641 Smidt's Shoe Lacing Hook.

Fig 1

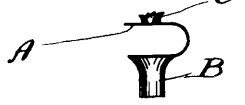
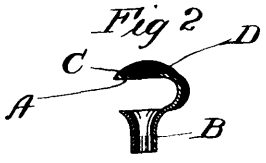
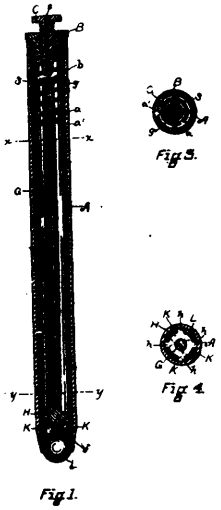


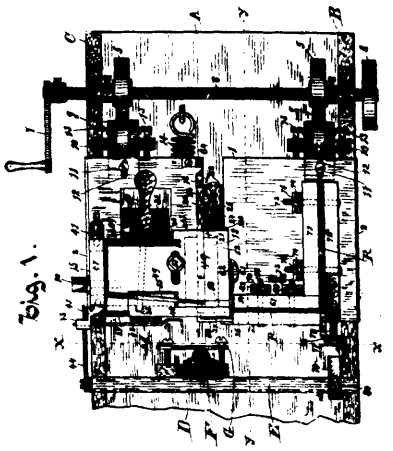
Fig 2



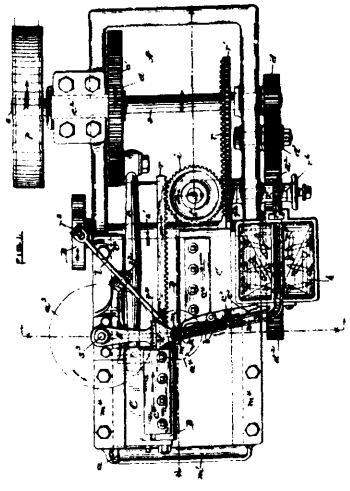
32642 Smidt's Shoe Lacing Hook.



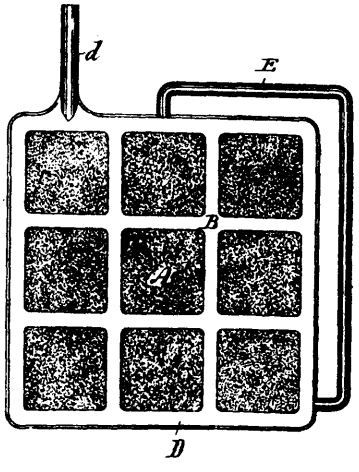
32643 Loud's Pen.



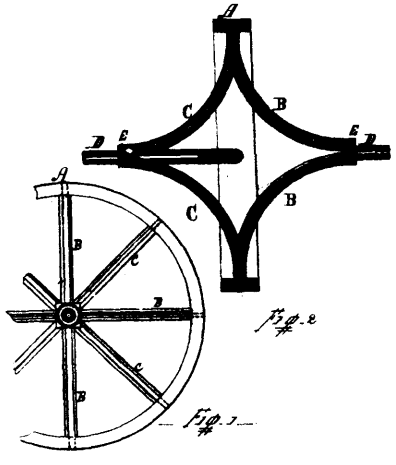
32644 Keehn's Type Founding Machine.



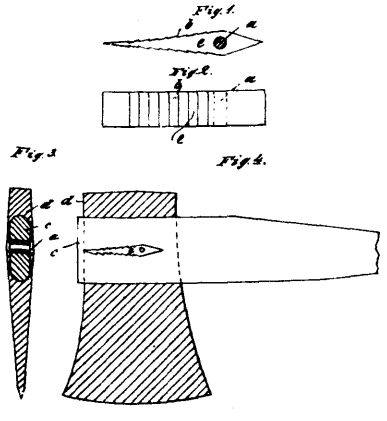
32645 Rogers' Machine for Rolling Screws.



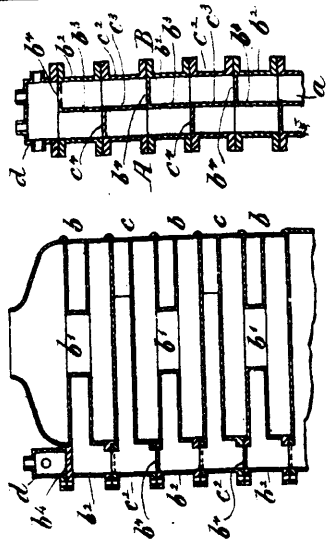
32646 Smith's Frame for Supporting the Elements of Secondary Batteries.



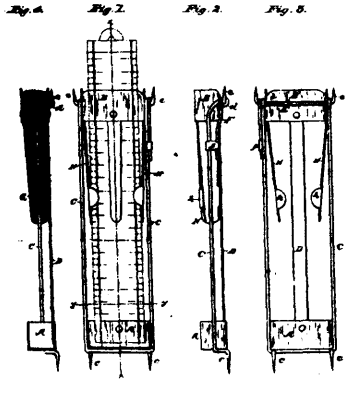
32647 Heddon's Wheel.



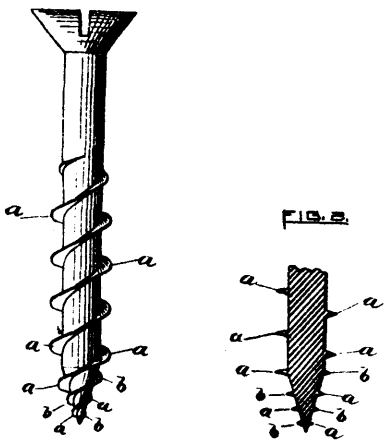
32648 Weiss' System of Fastening Tool Handles.



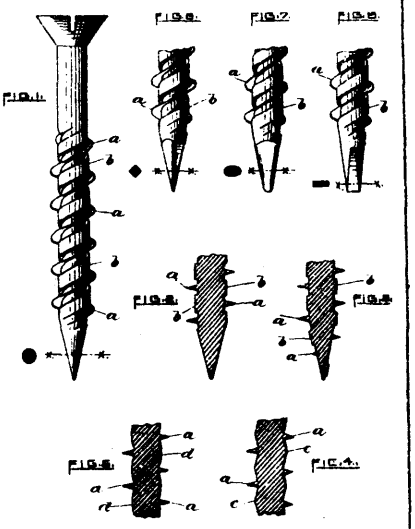
32649 Best's Water Heater.



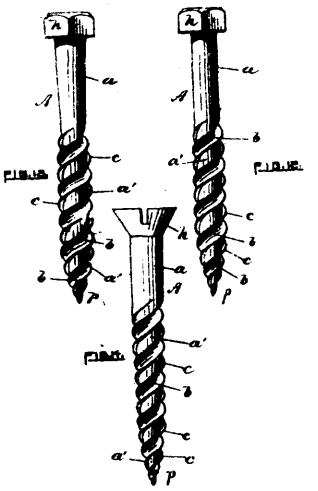
32650 Murphy's Rule Holder.



32651 Rogers' Wood Screw.



32652 Rogers' Drive Screw.



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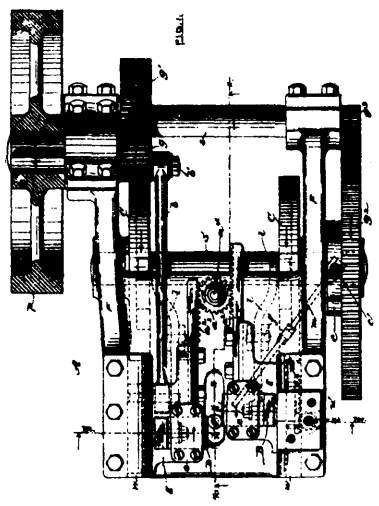
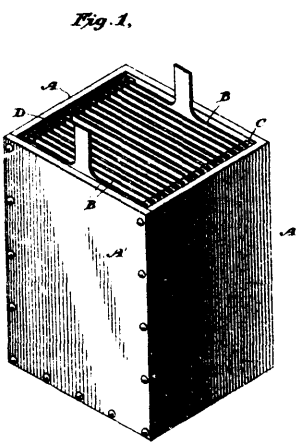
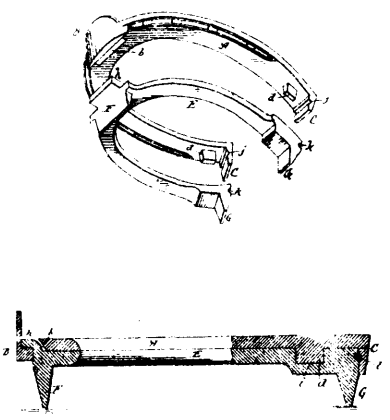


32654 Rogers' Screw Swaging Machine.



32655 Dey's Storage Battery.



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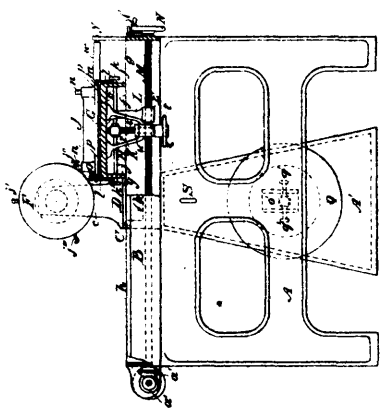

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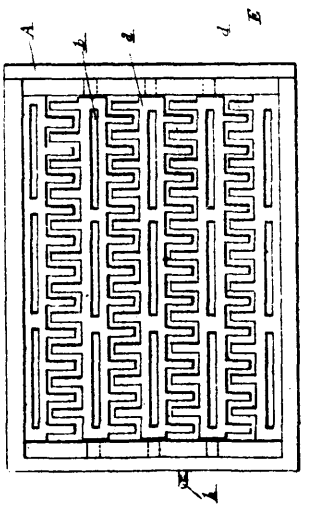
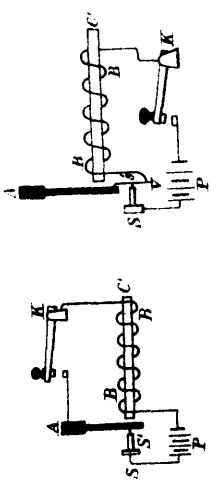


32658 Thomas' Grate.



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