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INVENTIONS PATENTED.

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

No. 37,480. Furnace. (*Fournaise.*)

John Galt, Toronto, Ontario, Canada, 29th September, 1891; 5 years.

Claim.—1st. A steam or water heating furnace consisting of sections, with means for uniting them and providing circulation of water or steam from section to section, said sections being provided with a fire-chamber in the upper part thereof, with a stratum of water above and around the same, and flues situated beneath said chambers for conducting heated products of combustion therefrom through said section to the outlet, substantially as described. 2nd. A steam or water heating furnace consisting of sections, adapted to circulate water or steam from the base to the top of each section and from section to section, said sections being provided with a fire-chamber in the upper part thereof, with a stratum of water surrounding the same, and flues situated beneath said chamber for conducting heated products of combustion therefrom through said sections to outlet at the base of the furnace, substantially as described.

No. 37,481. Means for Preventing Incrustation in Steam Boilers. (*Moyen d'empêcher les incrustations dans les chaudières à vapeur.*)

John Draper, Alfred Holmgren, and John Barnes, all of Brooklyn, New York, U.S.A., and Andrew Houston Morier, of Glasgow, Scotland, 29th September, 1891; 5 years.

Claim.—1st. The hereinbefore described composition composed of the ingredients and in about the proportion set forth. 2nd. The hereinbefore described mode of coating steam boilers and tubes by first mixing with the water contained in the boiler bi-chloride of mercury and then placing therein mercury, the substances being subjected to heat and steam pressure in the boiler. 3rd. The hereinbefore described mode of coating metal surfaces with which the water and steam in a boiler come in contact, consisting of the introduction of bi-chloride of mercury and a composition of mercury and metallic sodium, the whole being subjected to heat and pressure in the boiler. 4th. The means for coating the surface of iron and steel, consisting of mercury, bi-chloride of mercury and metallic sodium, used substantially in the manner and for the purposes set forth. 5th. The combination, with water in a steam boiler, of mercury, bi-chloride of mercury, and metallic sodium or salt, the whole being subjected to heat to receive proper temperature and steam pressure, for the purpose and substantially in the manner set forth.

No. 37,482. Process for Facilitating the Reproduction of Lithographic Pictures, Designs, etc. (*Procédé pour faciliter la reproduction des images, dessins, etc., lithographiques.*)

Walter H. Cottingham, Montreal, Quebec, Canada, assignee of Louis Bertling, London, England, 29th September, 1891; 5 years.

Claim.—1st. The herein described method or process of preparing lithographic transfers, consisting in first taking an impression from the stone upon transfer paper such as hereinabove described, and then dusting over the impression thus obtained a fine transfer powder composed essentially of the ingredients above specified. 2nd. The transfer composition composed of a mixture of two powders, one of which consists essentially of spermaceti, sperm oil and charcoal, melted together, cooled and crushed or ground, and the other of which consists essentially of resin and lamp black, or similar material melted together, cooled and crushed or ground.

substantially as set forth. 3rd. The improved transfer paper consisting of printing paper, having applied thereto coatings of a strong solution of boiled starch and a coating of solution of gum arabic in which a small quantity of sugar has been dissolved, substantially as described. 4th. The improved transfer ink, consisting essentially of mutton suet, bee's wax white curd soap, shellac, vegetable black, middle litho varnish and spermaceti, substantially as set forth.

No. 37,483. Metal Loop for Harnesses, etc.

(*Support métallique pour loupes de harnais.*)

Edmund Henry Gulledege, Oakville, Ontario, Canada, 1st October, 1891; 5 years.

Claim.—As an article of manufacture, a harness loop comprising a loop at the lower and attached to a raised shoulder, or integral, and to a flat-supporting plate, which is provided with screw or rivet holes or malleable rivets cast upon the plate, for fastening the said article upon a harness or saddle, substantially as and for the purpose hereinbefore set forth.

No. 37,484. Die for Forging Car Coupler Hooks. (*Matrice pour forger les crochets des attelages de chars.*)

John Green, William L. Holman, and John McCord, all of Renovo, Pennsylvania, U.S.A., 1st October, 1891; 10 years.

Claim.—1st. In dies for forging car coupling hooks, a lower die in two parts each having suitable cavities therein and one of said parts movable from the other in combination with an upper die. 2nd. In dies for forging car coupling hooks, a lower die in two parts having suitable cavities therein separated at an angle to the horizontal plane of the die, and one of said parts movable from the other in combination with an upper die. 3rd. In dies for forging car coupling hooks, a lower die in two separable parts each having suitable cavities therein and means for separating said parts in combination with an upper die. 4th. In dies for forging car coupling hooks, a lower die in two parts having suitable cavities, and one of said parts hinged to the other in combination with an upper die. 5th. In dies for forging car coupling hooks, a lower die in two parts having suitable cavities, and one of said parts hinged to the other in combination with suitable means for raising one of said parts to release the forging and an upper die. 6th. In dies for forging car coupling hooks, a lower die in two parts having suitable cavities, and one of said parts hinged to the other in combination with a tripping mechanism for raising one of said parts to release the forging and an upper die. 7th. In dies for forging car coupling hooks, a lower die in two parts having suitable cavities, and an angular line of separation between said parts, a hinged joint, a lever, and a pin for raising one of said parts of the die, and an upper die. 8th. A lower die having suitable cavities therein, and an anvil on one end of the die, in combination with an upper die having suitable cavities, and a hammer surface at one end corresponding with the anvil on the lower die. 9th. A two part lower die having an angular wall and a concave seat on one part, an angular wall and a convex surface on the other part, and said parts movably connected, and a transverse and a longitudinal cavity in the die, in combination with an upper die having a transverse and a longitudinal cavity.

No. 37,485. Artificial Foot. (*Allonge-pied.*)

John Linkert and Henry Arland, both of Hamilton, Ontario, Canada, 1st October, 1891; 5 years.

Claim.—1st. In an artificial foot, the combination of the straps F, with the heel piece A, and the instep piece B, as described. 2nd. In an artificial foot, the combination of the strap G, with the instep piece B, and the heel piece A, in the manner herein described, and as and for the purposes set forth. 3rd. In an artificial foot, the combination of the strap G², with the parts B, and C, as described, and as and for the purposes hereinbefore set forth. 4th. In an artificial foot, the strap G³, in combination with the parts C, and D, as described, and as and for the purposes hereinbefore set forth. 5th.

In an artificial foot, the combination of the heel piece A, with the ball piece C, and the strap J, as described, and as and for the purposes hereinbefore set forth. 6th. In an artificial foot, the combination of the retaining strap O, with the heel piece A, as described, and set forth. 7th. In an artificial foot, the combination of the cap M, with the parts C, and D, as and for the purposes hereinbefore set forth. 8th. In an artificial foot, the combination of the boot T, with the heel piece A, instep piece B, ball piece C, and toe piece D, as and for the purposes hereinbefore set forth.

No. 37,486. Brush. (*Brosse.*)

The Palmetto Fibre Company, (assignees of McClintock Young), all of Frederick, Maryland, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. A fastener for securing tufts in series in a brush block, consisting of a narrow sinuous strip presenting on one edge the projections to enter the tuft holes and bear within the bight of the tufts, and on the other edge the notches or openings, whereby the two sides of each tuft are permitted to close together through the projection by which they are held. 2nd. The improved tuft fastener for use in brushes, consisting of a wire bent as described to present a series of tuft holding projections. 3rd. The tuft fastener for use in brushes, consisting of the sinuous strip, having the projections adapted to enter the tuft holes and bear within the tufts, and having also the teeth or notches *c'*, to engage the walls between the tuft holes. 4th. The improved brush, consisting of the block or body provided with a series of holes, the tufts inserted in said holes, and a sinuous fastener having connected portions extending downward into the respective holes within the bight of the tufts, said portions having the openings *c'*, whereby the two sides of the tuft are permitted to close compactly together above the fastening device.

No. 37,487. Extractor for Stumps.

(*Arrache-souche.*)

John Cornelius, Oakland, Maryland, and Raymond S. Kailer, Alliance, Ohio, both in U.S.A., 1st October, 1891; 15 years.

Claim.—1st. The improved stump puller herein described, comprising the main wheel having the chain wheel, the worm wheel sections arranged on opposite sides of such chain wheel, and the drums arranged alongside the worm wheel sections and adapted to receive a wire cable, the worm and the necessary framing, all substantially as and for the purposes set forth. 2nd. The improved machine herein described, comprising the side frames curved or sloped downward toward their forward ends and provided with bearings for the main wheel, the main wheel journaled in said bearings and formed with the chain wheel, the worm wheel having its sections on opposite sides of the chain wheel, and the drums arranged on opposite sides of the worm wheel and adapted to receive a wire cable, the worm adapted to mesh with the worm wheel, and supports for such worm, all substantially as and for the purposes set forth. 3rd. In a machine, substantially as described, the combination, with the framing and a main wheel having a worm wheel, of the worm adapted to said worm wheel, the frame for said worm wheel having upper and lower plates provided at one end with openings for the pintle rod, and at their opposite ends with openings for the locking rod, and the upright bar connecting the upper and lower plates and having a socket, and the pintle and locking rods, the latter being adapted to the socket of the upright bar of the worm frame, whereby when the locking rod is removed to release the worm frame it may be fitted into the socket of the upright bar to serve as a lever in adjusting the worm frame, substantially as and for the purposes set forth. 4th. In a stump puller, the combination of the shoes, the side frames, the main wheel journaled in the side frames and provided with a worm wheel, the worm, the worm frame, the pintle and locking rods for said frame, and the reinforce plate B, secured upon the rear shoe and provided with sockets adapted to receive the lower ends of the locking and pintle rods, all substantially as and for purposes set forth. 5th. The improved stump puller herein described, consisting of the main frame having side frames, or plates curved or sloped downward toward their front ends and provided at their rear ends with hooks for the anchor bail, the main wheel journaled in the bearings of the side frame and provided with the central chain wheel, the worm wheel sections alongside the said chain wheel, the drums alongside the worm wheel sections, the worm and the support for the said worm, all substantially as set forth. 6th. In a stump puller, substantially as described, a main wheel having a central chain wheel J, worm wheel sections on opposite sides thereof, and shaft-like portions projecting from said worm wheel sections, and the drums fitted and secured on the said shaft-like portions, substantially as set forth. 7th. In a machine, substantially as described, the combination of the side frames having bearings for the main wheel and openings concentric with the said bearings, the main wheel journaled at its ends in such bearings and having a worm wheel, a chain wheel and drums, the worm meshing with said worm wheel, and the brace rod L, passed axially through the main wheel and through the openings in the side frames, and secured at its ends outside of such side frames, substantially as set forth. 8th. In a stump puller, the combination, substantially as described, of a main wheel having a worm wheel, a chain wheel, and drums of equal diameter with the chain wheel, the worm meshing with the said worm wheel, and the necessary framing, substantially as and for the purposes set forth.

No. 37,488. Storage Battery.

(*Batterie d'emmagasinage.*)

William B. Hollingshead, Brouxville, and Sydney H. Carney, New York, both in the State of New York, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. The combination, in a voltaic accumulator or storage

battery, of a plate or mass of manganese dioxide and a plate or mass of metallic iron, and an electrolyte or conveyor composed of water, having in solution an acid salt, which on decomposition deposits an insoluble compound on the negative or iron element, and a soluble compound on the manganese dioxide element acting as an electrolyte or conveyor during reverse action or discharge. 2nd. The combination, in a voltaic accumulator or storage battery, of a mass of manganese dioxide, a conductor therefor, substantially as described, a plate or mass of metallic iron, and an electrolyte or conveyor composed of water, having in solution an acid salt, which on decomposition deposits an insoluble compound on the negative or iron element, and a soluble compound on the manganese dioxide element acting as an electrolyte or conveyor during reverse action or discharge.

No. 37,489. Hand Drill for Rock.

(*Foret à main pour la roche.*)

Simon Ingersoll and Edward Thomas Bromfield, (assignee) both of Glenbrook, Connecticut, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. In a rock drill, the combination with the drill holder, means for retracting the same, and an actuating spring connected with the holder for driving the same, of a compensating lever mechanism whereby a decreased tension of the spring is partly or wholly compensated for by a more effective application of the power of the spring, substantially as set forth. 2nd. The combination with the sliding carriage, the drill bar, the shaft having a cross arm 18, and lever 13 engaging the drill bar and engaged by the cross arm, of an arm 20 rigidly connected to lever 13, a bell crank lever, a spring, the ends of which are connected respectively to one arm of the bell crank lever and to arm 20, and means, as a rack, engaging the other arm of the bell crank lever, whereby the spring may be adjusted to increase or diminish the power exerted upon the drill bar. 3rd. The combination with the sliding carriage having arms extending therefrom, the drill bar, the shaft journaled in said arms and having a cross arm, and a lever 13 having a cross piece journaled at the outer ends of said arms, of an arm 20 rigidly secured to said cross piece, a rack 25, a bell crank lever having a pin on one arm adapted to engage said rack, and a spring, the ends of which are connected respectively to the other arm of the bell crank lever, and to arm 20, whereby the power of said spring upon the drill bar is increased as the drill bar descends. 4th. The sliding carriage, the drill bar, shaft 9 having cross arm 18 and lever 13 connected to the drill bar, said drill bar, lever and shaft being journaled in the carriage, in combination with an arm rigidly secured to the outer end of lever 13, and a spring, one end of which is connected to said arm, whereby, when the drill bar is raised, said arm is swung outward, which increases the tension of the spring but carries the line of tension downward toward the pivotal point of said lever, so that the power exerted upon the drill bar is increased as the arm swings inward and the drill bar moves downward. 5th. The combination with the frame work, the carriage having ratchet 36, the feed screw threaded to engage the ratchet, and a feed lever carrying a pawl, of a drill bar having a longitudinal groove, gear 32 supported in the carriage and having a spline engaging said groove, lever 13 which actuates the drill bar and the feed lever, shaft 9 having a cross arm which actuates lever 13, a shaft 27 having a worm engaging gear 32, and a belt connecting said shafts. 6th. In a rock drill, a sliding carriage carrying a drill bar and a ratchet 36, in combination with a feed screw threaded to engage the ratchet, a feed lever having a pawl engaging said ratchet, and a pin 40, whereby the feed screw is held against rotation so that movement of the ratchet will feed the carriage downward. 7th. In a rock drill, the combination with the drill holder, and a lever and rock shaft connected therewith whereby said holder is actuated, of a spring connected with said lever operating to force the holder forward, and carried by the forward movement of the lever away from the centre of said rock shaft, whereby the operative leverage of the spring is increased during the stroke of the drill, substantially as set forth.

No. 37,490. Tonic Beverage. (*Breuvage tonique.*)

Edward Sacks, Ann Arbor, Michigan, U.S.A., 1st October, 1891; 5 years.

Claim.—The herein described tonic beverage consisting of ale and peptonized beef extract, in the proportions of about two pounds of peptonized beef extract to one barrel of ale.

No. 37,491. Nut Lock. (*Arrête-écrou.*)

David K. Jackman, Poughkeepsie, New York, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. A nut-lock consisting of a washer adapted to fit over the bolt and constructed with a loop-shaped spring having a lower and an upper flange, the latter containing a slot in the centre of its inner face, whereby the nut may be securely locked with the dropping of one of its angles into this slot and the slightest possible wear of the bolt be taken up, substantially as set forth. 2nd. A nut-lock A, formed from a single piece of metal and consisting of a washer *a*, having a bolt-hole *b*, a lower lip *b'*, and an upper lip *c*, depressed between its outer loop and its inner locking-surface *d*, to permit the convenient adjustment of the nut upon the end of the bolt, as and for the purpose specified. 3rd. The combination of a rail, a fish-plate, a threaded bolt passing through both and fish-plate, a nut correspondingly threaded upon the bolt, the projecting flange of the rail or fish-plate, and a nut-lock consisting of a washer to fit over the bolt and under the nut, and constructed with a loop-shaped spring having a lower portion *b*, resting upon the rail or fish-plate flange, an upper portion *c*, engaging at its inner free end *d* with the nut, substantially as and for the purpose described.

No. 37,492. Truss. (*Bandage herniaire.*)

John Albert Marvin, Lansing, Michigan, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. A truss provided with an abdominal band and a pad, in combination with a perineal elastic strap permanently secured and pivoted to said pad, substantially as described. 2nd. In a truss the combination with an abdominal band and a pad, of pad straps secured at or near one end of the pad, and a perineal strap secured and pivoted to the pad over the ends of said straps and at or near the said end of the pad, and means for tightening the perineal band, whereby the greatest tightening pressure is produced at said end of the pad, substantially as described. 3rd. In a truss, the combination with an abdominal band, of a pad, pad straps, the lower ends of both of which are secured to the pad, and which extend at an angle from each other from said pad, and means of connecting and adjusting said straps in relation to the abdominal pad, independently of each other, substantially as described. 4th. In a truss, in combination with the abdominal band of a pad having a flat bearing surface, and one end made thicker than the other, elastic pad straps secured at or near the opposite lower edges of the pad, a perineal elastic band secured to and pivoted near the end of said pad, and means for tightening and adjusting said straps in relation to the abdominal band, substantially as described. 5th. In a truss, in combination with the abdominal band of the pad straps removably secured to the said band, and an elastic strap permanently attached at one end to said band, and adapted to cover and latch over the fastening ends of said pad straps, to hold the latter in place, substantially as described. 6th. In a truss, in combination with the abdominal band, the perineal elastic strap having its edges closed together at its lowest point, and the pad B, to which said strap is pivoted, substantially as described.

No. 37,493. Center Bearing Plates for Railway Cars. (*Plaques de frottement centrales pour chars de chemins de fer.*)

Charles Thomas Schoen, Pittsburg, Pennsylvania, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. Center bearing plates of wrought metal, provided with integral bearings having flat contact surfaces, and a rim projection from one of the plates surrounding or circumscribing the bearing from the other, substantially as described. 2nd. Center bearing plates in which the upper plate is made with a depending bearing and the lower plate is made with a rising bearing having a seat for the depending bearing of the upper plate, and a rim projection above such seat to prevent the lateral escape of the upper bearing, the bearings in both plates being returned to the base line of the plates to afford central bearings for the plates to prevent crushing, and the plane of contact of the bearings of the two plates being parallel with the bases of said plates to prevent disturbance of the load when the cars are laterally inclined, substantially as described.

No. 37,494. Draw Bar Spring Pocket. (*Boîte à ressort de barre d'attelage.*)

Charles Thomas Schoen, Allegheny, Pennsylvania, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. As an improved article of manufacture, a guide plate for draw bar spring pockets constructed for interchange with the castings and other parts forming the master car builder's standard and other common standards, and to be applied in the ordinary draft rigging, and comprising, essentially, a shouldered cavity to receive the ordinary spring follower plates, bolt holes to receive the ordinary bolts in the draft timbers, and longitudinal edge flanges, and struck up in a single piece from plate steel or like metal, substantially as described. 2nd. A guide plate for draw bar spring pockets, constructed of wrought metal, preferably steel plate, die shaped, and having a shouldered cavity to receive the spring follower plates, and ends provided with bolt holes and edge flanges, substantially as described. 3rd. A guide plate for draw bar spring pockets, constructed of wrought metal, preferably steel plate, die shaped, and having a shouldered cavity to receive the spring follower plates, ends provided with bolt holes and terminating in transverse flanges, and flanges along the longitudinal edges, substantially as described. 4th. A guide plate for draw bar spring pockets, constructed of wrought metal, preferably steel plate, die shaped, and having a shouldered cavity to receive the spring follower plates, a transverse rib at the bottom of the cavity, and ends provided with bolt holes and longitudinal edge flanges, substantially as described. 5th. A guide plate for draw bar spring pockets, constructed of wrought metal, preferably steel plate, die shaped, and having a shouldered cavity to receive the spring follower plates, a transverse rib at the bottom of the cavity, ends provided with bolt holes, transverse end flanges, and longitudinal edge flanges, substantially as described.

No. 37,495. Corner Band for Railway Cars. (*Ranfort pour les coins des chars de chemin de fer.*)

Charles Thomas Schoen, Allegheny, Pennsylvania, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. Pressed steel corner bands for cars, constructed with central longitudinal side ribs and an angle or corner rib diverging from yet connecting the side ribs, substantially as described. 2nd. Pressed steel corner bands for cars, made in pairs, the outer band having outwardly projecting side ribs and an angle or corner rib diverging from yet connecting with the side ribs, and a complementary inner band having sunken side ribs and an angle or corner rib diverging from yet connecting with the side ribs, substantially as and for the purpose described.

No. 37,496. Center Bearing Plate for Railway Cars. (*Plaques de frottement centrales pour chars de chemin de fer.*)

Charles Thomas Schoen, Allegheny, Pennsylvania, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. Center-bearing plates for railway cars, consisting of an upper or body plate having a flat-ended projection and a lower or truck plate having a flat-bottomed socket constructed with a surrounding annular rib to receive the flat-ended projection, said plates being constructed of plate metal, preferably steel, struck up or pressed to shape, substantially as described. 2nd. Center-bearing plates for railway cars, consisting of an upper or body plate having a flat-ended projection and laterally extended re-enforcing ribs, and a lower or truck plate, having a flat-bottomed socket constructed with a surrounding annular rib to receive the flat-ended projection, said plates being constructed of plate metal, preferably steel, struck up or pressed to shape, substantially as described. 3rd. Center-bearing plates for railway cars, one of which is constructed with a flat-ended projection and the other with a flat-bottomed socket constructed with a surrounding annular rib to receive the flat-ended projection, said plates being struck up or pressed from plate metal, preferably steel, substantially as described.

No. 37,497. Steam Heating Apparatus. (*Calorifère à vapeur.*)

James Finney McElroy, Albany, New York, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. In a steam heating system, having a main steam supply pipe and a return pipe, of the return pipe connecting back into the supply pipe, substantially as described. 2nd. In a steam heating system, having a main steam supply pipe, and a main return pipe, the return pipe connecting back into the supply pipe, of a nozzle or injector at the junction, substantially as described. 3rd. In a steam heating system, having a main steam supply pipe, and a main return pipe connecting back into the supply pipe, of a nozzle or injector at the junction, and a water receptacle to receive the water of condensation, substantially as described. 4th. In a heating apparatus, a steam supply pipe, a nozzle or equivalent device in said pipe, an out-going supply pipe, heating pipes or radiators, a return pipe, a connection between said return pipe and the main steam supply pipe at or near said nozzle, whereby the returning steam is again distributed through the heating system, substantially as described. 5th. In a steam heating system, having a main steam supply pipe, and a main return pipe, and the main return pipe connecting back into the main supply pipe, of a nozzle or injector at the junction, a steam trap adapted to receive the water of condensation, and a connection from the steam trap to a water receptacle or tender, substantially as described. 6th. In a steam heating apparatus of the kind described, a main steam supply pipe and a main return pipe connecting to a valve on each car, from which the steam is distributed to the radiators, and from which it passes to the return pipe, substantially as described. 7th. In a steam heating apparatus of the kind described, a main steam supply pipe, and a main return pipe connecting to a valve on each car, from which the steam is distributed to the radiators, and from which it passes to the return pipe by means such as described, whereby either main may be used for return or supply, substantially as described.

No. 37,498. Steam Trap. (*Trappe de vapeur.*)

James Finney McElroy, Albany, New York, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. In a return car heating apparatus, a steam trap located to receive the returned water of condensation from the main under pressure, and a float valve in said trap adapted to open and close the exit therefrom, substantially as described. 2nd. In a return system of car heating, in which the return main connects with the supply, an automatic steam trap connecting with the main and adapted to operate under the steam pressure therein, to receive the water of condensation therefrom, a connection between the valve-controlled exit of the trap, and the water supply tank, substantially as described. 3rd. In combination with a steam trap, a casing, a float valve in said trap adapted to open and close the exit therefrom, a connection between said trap and the water supply, a steam chamber provided with a diaphragm, and a valve located in the exit pipe controlled by said diaphragm, substantially as described. 4th. In a car heating apparatus, a steam trap connecting with the main, a float valve adapted to automatically open and close the exit opening, a connection between said trap and the water supply, a valve in said exit pipe normally open, a chamber connecting with said trap, a diaphragm in said chamber operating said valve, whereby it is closed under pressure, and a spring controlled drain valve in the lowest point of the casing, the parts being arranged to operate, substantially as and for the purpose described.

No. 37,499. Valve. (*Souppape.*)

James Finney McElroy, Albany, New York, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. In combination with a system of distributing mains, a four-way valve located between the supply and return main, and connected therewith, of a supply and return pipe connected with said valve, of passages through said valve, connecting the two supply and the two return ports with each other, and of automatically operated discs in said valve whereby either main may be used to supply or return, substantially as described. 2nd. In a four-way valve connected with two mains, and with the supply and return pipes, of a system of distributing pipes, a casing having partitions forming inlet and outlet chambers, of supply and return chambers connected therewith by valves, adapted to automatically connect

the supply with the inlet and outlet chambers, whereby either main may be used as supply or return, substantially as described. 3rd. In a four-way valve, a casing divided into chambers σ^1 , ρ^1 , φ^1 , and ρ^2 , of valves k^1 , k^2 , and double valve l , substantially as described. 4th. In a four-way valve, a casing divided into chambers σ^1 , ρ^1 , φ^1 , of valves k^1 , k^2 , held normally open by a spring, a double valve l , secured in plugs in the casing, substantially as described.

No. 37,500. Plow Coulter. (*Coultre de charrue.*)

Charles M. Smith, Lanark, Ontario, Canada, 1st October, 1891; 5 years.

Claim.—The combination of a plow coulter A, having lip B, and chain C, substantially as and for the purpose hereinbefore set forth.

No. 37,501. Waggon Step.

(*Marche-pied de wagon.*)

Horace Raforod Roden, Liberty Hill, Louisiana, U.S.A., 1st October, 1891; 5 years.

Claim.—1st. In a waggon step, a vertical portion which rests against the outer side of the waggon body, having its upper end extending inward and catching over the upper edge of the waggon body, its lower end extending outward, and a clamp vertically adjustable upon this vertical portion to engage the under side of the waggon body, combined substantially as described. 2nd. In a waggon step, a vertical portion having its upper end bent inward and catching over the upper end of the waggon body, its lower end bent outward, and a clamp which is vertically adjustable upon the said vertical portion, the inner end of the clamp extending under the waggon body, and its outer end extending outward to form an upper or second step, substantially as specified. 3rd. In a waggon step, a vertical portion having its upper end extending inward and catching over the upper edge of the waggon body, and its lower end bent outward, a horizontal plate secured to this outwardly bent end, a clamp having a vertical opening through which the said vertical portion passes, and a screw which passes through the clamp and engages the vertical portion, substantially as shown and described.

No. 37,502. Baby Jumper. (*Escarpolette.*)

Clarence L. Barnhart, Flint, Michigan, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. The combination, in a baby jumper, of a base supporting a standard from one end thereof, the standard having an overhanging arm, and a crib supported from said overhanging arm, the connections between the crib and said arm including a spring, substantially as described. 2nd. The combination, in a baby jumper, of a skeleton base having the sides thereof extending upwardly and inwardly and supporting a standard, the latter having an overhanging upper end, a spring depending from said arm, a hanger depending from said spring, and a crib carried by said hanger, substantially as described. 3rd. The combination, in a baby jumper, of a standard having an overhanging arm and a base provided with casters, a spring depending from said arm, a hanger depending from said spring, and a crib supported on said hanger, substantially as described. 4th. The combination, in a baby jumper, of a standard having an overhanging arm, and a base provided with casters, a spring depending from said overhanging arm, a hanger depending from said spring and formed with a horizontally ranging lower end, and a crib secured to said horizontal arm and having a block or enlargement at its underside at the point of connection with the hanger arm, substantially as described. 5th. In a baby jumper, the combination, with a suitably supported standard, of a crib suspended therefrom, the connection including a spring formed of double strands of wire, substantially as described. 6th. In a baby jumper, the base A, formed at its rear end with upward inclined bars, which terminate in and support a vertical, overhanging standard, substantially as herein shown and described. 7th. In a baby jumper, the base A, having the front cross bar a , and having its side arms a^1 , continued inwardly and upwardly to form the standard A^1 , the said standard overhanging at its upper end as at A^2 , a spiral spring D, suspended from said overhanging end, a hanger arm C, suspended from said spring, and formed with a rigid horizontal seat which extends and is supported at one side of said hanger arm, and a crib E, secured to said horizontal seat, all in combination, substantially as described.

No. 37,503. Cover for Butter Tubs and Firkins, and Art of Covering.

(*Couverture de tinettes, ou quart de barril et art de les couvrir.*)

David Ivor and John Ivor, both of Strathroy, Ontario, Canada, 2nd October, 1891; 5 years.

Claim.—1st. An inside cover of white ash with edge adjusted perfectly to the inside of the butter tub at the opening thereof, with rubber or cotton bands, substantially as and for the purpose hereinbefore set forth. 2nd. The rubber or wooden bearings or rubber springs, used to keep the such inside cover in position in case of shrinkage of the butter.

No. 37,504. Pneumatic Door Check.

(*Arrête-porte pneumatique.*)

Alfred Dudden, San Francisco, California, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. The outer cylinder 5, inserted in the door jamb and provided with internal threads at its front end, and the internal smaller cylinder mounted therein, said smaller cylinder being pro-

vided at its front end with a flared mouth terminating in a securing plate and in rear of the same provided with an external annular threaded boss or shoulder engaging the threads of the outer cylinder, substantially as specified. 2nd. The combination with the cylinder 5, provided at its front or inner end with a stop, the rod 12, mounted therein and terminating in a head, and the spring 23, interposed between the stop and the head, of the arm 15, for connecting the front end of the rod to the door, said arm being provided with a transverse perforation, as 42, and the rod or bar 43, in said perforation, substantially as and for the purpose specified. 3rd. The combination of the face plate 24, provided with opposite lugs 25, having perforations, the arm 15, longitudinally slotted at 13, and exteriorly threaded at its outer end, the nut 27, transversely perforated to agree with the slot and the perforations of the lugs and threaded upon the rod, and the pintle 28, passing through the perforations of the ears, nut, and rod, substantially as specified. 4th. The combination with the cylinder 5, plugged at its lower end and provided above the same with a narrow slot 29, extending for some distance along the cylinder, of a rod 12, mounted on the cylinder and provided with a piston head, a spring 23, interposed between the head and the outer end of the cylinder, and an arm 15, pivotally connecting the rod with the door, substantially as specified. 5th. The combination with the cylinder 5, mounted in the recess of the door frame and provided at its rear end with a plug 31, having a valve opening provided with an inwardly opening valve 35, and a tapering slot 29, formed in the wall and extending for a considerable portion of its length at one side of the path traversed by the piston, of a tension rod 12, having a piston head mounted for sliding in the cylinder, a spring 23 for retracting the rod, and an arm 15, pivotally connecting the door with the outer end of the rod, substantially as specified. 6th. The combination with the cylinder 5, mounted in the recess of the door frame, and having an internal rear threaded end 30, of a valve plug 31, threaded in the end of said cylinder and having a central opening 32, provided with a conical seat, and a counter-sunk recess 37, at the front end of the seat, and an annular flange 34 at the rear end of the opening, a head 35, having a conical body mounted in the seat, and a circular head 36, fitting the recess and terminating at its rear end in a stem 38, projecting through the opening and the annular flange and provided with a stop or head, a spring 41, mounted between the head and the plug, encircling the stem, and adapted to maintain the valve normally out of its seat, a tension rod 12, mounted in the cylinder and provided with a piston head, an arm 15, connecting the rod with a door, and a coiled spring 23, interposed between the head and the front end of the cylinder, substantially as specified. 7th. The cylinder 5, having valve plug 31, provided with a spring pressed valve, and a narrow tapered slot formed in the wall of the cylinder in front of the plug 31, and having its lower or enlarged end adjacent to said plug, combined with the rod 12, having a piston head working in the cylinder and pivotally connected at its outer end with the door, as set forth. 8th. The combination with a cylinder provided at its outer end with a stop, of a rod mounted in the cylinder and terminating at its rear end in a piston head, and near its outer end provided with a transverse perforation, occurring within the cylinder when the rod is in its normal position, and the removable pin adapted for insertion in the perforation and to retain the rod withdrawn from the cylinder against the tension of the spring, substantially as specified.

No. 37,505. Road Cart. (*Désobligeante.*)

States De Groat Palmer, Marshalltown, Iowa, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. The combination, with the axle, the shafts, and the body of a vehicle, of a pair of bars, connected at their rear ends to the axle, at their front ends to the body and provided at such points with elastic cushions to permit horizontal vibration, and springs connecting the middle parts of said bars with the shafts, substantially as shown and described. 2nd. The combination, with a vehicle body, its shafts, and the axle, of a pair of bars connected to the axle at the rear, connected at intermediate points to the shafts by means of springs, and having at their front ends a laterally yielding connection with the body, substantially as shown and described. 3rd. The combination, with the axle, the shafts and the body of the vehicle, of a pair of bars connected at their rear ends to the axle, at their front ends to the body, and having at an intermediate point a spring connection with the shafts made adjustable along the length of said bars, substantially as and for the purpose described. 4th. The combination, with the vehicle body and the bars G, of a plate attached to the vehicle body and provided with a long bearing, a bolt or rod extending through the same and also through the ends of the bars, and elastic washers or cushions arranged about said bolt on each side of the bars, substantially as and for the purpose described. 5th. The combination with the axle, with clip d , thereon, of the clip plate d^1 , formed with ears, a bolt passing through the same, the bar G, hung upon said bolt, and elastic washers or cushions arranged on each side of the bar between the ears, substantially as shown and described. 6th. The combination, with the axle and the shaft, of the bracket having a broad base seated upon and extending longitudinally along the axle for sustaining the shaft above the axle, the bar G, and clip d , d^1 , securing the base of the bracket at one end, and the longitudinal brace K, and clip e , e^1 , securing the base of the bracket at the other end, substantially as shown and described.

No. 37,506. Device for Opening Envelopes.

(*Appareil pour ouvrir les enveloppes.*)

Edouard Lefebvre, Montreal, Quebec, Canada, 2nd October, 1891; 5 years.

Claim.—An envelope opening device comprising a slab or base plate, a blade carried above it at one end thereof and with its edge facing same, a table or carrier pivoted to said slab and provided with a shearing edge, and a gauge for determining the extent of cut as set forth.

No. 37,507. Blanket for Horses.*(Couverture de cheval.)*

Albert F. Ransom, Burlington, Wisconsin, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. A horse blanket or cover provided with fastening bands or stays of washable fabric, permanently attached thereto, substantially as and for the purposes set forth. 2nd. The combination with a horse blanket or cover provided with the bands or stays *a*, of fabric, of the breast-stays *b*, one having a snap hook and the other a ring to be engaged by said hook, said ring and hook being each provided with a cross-bar to engage the said blanket or cover, and thus divide the strain between the latter and the said stays, substantially as and for the purposes set forth. 3rd. A horse blanket or cover provided at the upper side of its neck portion with a semi-rigid stiffening frame *c*, stitched inside of the cover fabric and arranged to straddle the withers and hold the blanket or cover in place and prevent it from sawing back and forth, and thus wearing the mane, substantially as and for the purposes set forth. 4th. A horse blanket or cover provided at the upper side of the neck portion with a semi-rigid stiffening-frame adapted to straddle the withers and hold the front end of the blanket in place, and a hood portion approximately fitted to the rump of the animal and projecting downwardly over the upper portion of the tail so as to hold the rear end of the blanket in place, substantially as and for the purposes set forth. 5th. A horse blanket or cover having at its rear end an impermeable hood portion approximately fitted to the rump of the animal and extending downwardly over the tail, so as to prevent rubbing and wearing the hair therefrom, the blanket being open below and underneath the tail, substantially as and for the purposes set forth.

No. 37,508. Pump. (Pompe.)

George Brown, Waitsburg, Washington, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. In a pump, the combination with the curbing, rods suspended therefrom, and a yoke supported at the lower ends of the rods and provided with a socket or seat and an inlet having a valve, of a gasket mounted in the bottom of the seat, a pump cylinder resting on the gasket and fitting the walls of the socket or seat, said cylinders being provided with a discharge chamber or socket having a seat, a gasket mounted therein, a discharge pipe fitting the wall of the socket or seat, resting upon the gasket, a pump rod having the piston for operating the pump cylinder, a shoulder mounted on the rod, a base mounted upon the curbing, a stationary pump case section, a hinged pump case section secured to the base, and means for locking the two sections, said hinge section resting upon the shoulder, substantially as specified. 2nd. In a pump, the combination with the curbing, the suspension rods, the yoke or bridge connecting the lower ends of the same, having an inlet provided with an annular flange or socket, a supply pipe connected to the inlet, a leather gasket mounted in the bottom of the socket, a pump cylinder resting upon the gasket and provided with an air and discharge chamber communicating with the cylinder and having annular seats, leather gaskets mounted in the seats, a closed air pipe mounted in one of the seats and a discharge pipe in the remaining seat of a pump case base mounted on the curbing and having a stationary section rising therefrom provided with an overhanging cap, the under side of which is inclined, a pair of adjustable collars mounted upon the air and discharge pipes, bolts for adjusting the same, leather gaskets mounted upon the collars, a plunger rod, means for operating the same, and a hinged pump case section secured to the base and provided with an upper inclined edge adapted to bind against the under edge of the cap, and provided with opposite pairs of inwardly disposed fingers for pressing upon the collars, substantially as specified. 3rd. The pump case made in two longitudinal sections, one section being rigidly secured to the base and the other section being pivoted to the base, and a series of fingers 19, formed on the interior of the pivoted section and set apart to form spaces 20, 21, and 22, for the reception of the air and discharge pipes, and the plunger rod, as set forth.

No. 37,509. Waggon. (Wagon.)

Arthur Jennings, Montreal, Quebec, Canada, 2nd October, 1891; 5 years.

Claim.—1st. The combination with a waggon body, its springs and axles, of open metal frames or bearers interposed between the springs and the axles, and means for securing the whole together, as shown and described. 2nd. The combination with a waggon body, its springs and axles, of open quadrangular metal frames or bearers interposed between the springs and the axles, the upper bars of such frames in contact with the springs being provided with perforations to fit the heads of the centre bolts of said springs, and means for securing the whole together, as shown and described. 3rd. In a waggon, the combination with the side irons of the main platform frame, of the rear main frame section formed of a strip of angle iron, one of the sides of such iron being parallel with the bottom of the waggon and the other vertical with its edge upwards, and the floor boarding shortened to leave an open space between its end and the upwardly projecting portion of said angle iron, for the full width of the waggon. 4th. In combination with the jew's harp *g* and springs *A*, the drop shackles *H* formed of malleable iron in one piece. 5th. In a waggon, the combination with the side irons of the main platform frame, of the front frame section formed of a single angle iron, one of the sides of such iron being parallel with the bottom of the waggon and the other vertical with its edge upwards, and the floor boarding shortened to leave an open space between its end and the upwardly projecting portion of said angle iron, a wooden bearer with edge secured in such space and serving to carry front rack of waggon, as set forth.

No. 37,510. Pulley. (Poulie.)

Theron Depue Keasey, Toledo, Ohio, U.S.A., 2nd October, 1891; 5 years.

Claim.—In a hand pulley, metal hub sections formed with sockets, arms at right angles thereto, each formed with a recess and having a transverse flange, the bases of the arms being inclined, in combination with spokes fitting within the sockets and held within the recesses by bolts passing through hub sections, as and for the purpose set forth.

No. 37,511. Spring Tooth Lever Harrow.*(Herse à dents élastiques à levier.)*

Horatio Gale, Albion, Michigan, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. A spring tooth harrow, consisting of tooth bars to which the spring teeth are attached, said tooth bars made rotatable about the axis, and a hand lever engaged therewith, whereby said bars may be simultaneously rotated, substantially as and for the purposes described. 2nd. A spring tooth harrow, consisting of the combination with rotary tooth bars of curved spring teeth, lever arms connected with each said tooth bars, a connecting rod or bar engaging the lever arms, and a hand lever whereby all said tooth bars may be simultaneously rotated and set into any desired position with respect to the draft, substantially as and for the purposes described. 3rd. In a spring tooth harrow, the combination with a spring tooth and its tooth bar, of a reinforcing piece *B'*, adapted, when the tooth is acting as a runner, to receive and sustain the wear, substantially as and for the purposes described.

No. 37,512. Watch Case. (Boîte de montre.)

Joseph Lloyd, Toronto, Ontario, Canada, 2nd October, 1891; 5 years.

Claim.—1st. A non-magnetic shield for a watch case, consisting of a suitable shaped body provided with outwardly projecting points, substantially as described. 2nd. In combination with a watch case of the non-magnetic shield, consisting of a body provided with outwardly projecting points, and the flange surrounding the edge of the watch case, under which flange is fitted the outwardly projecting points, substantially as described.

No. 37,513. Wheel. (Roue.)

Thomas Cowper, St. Henry, Quebec, Canada, 2nd October, 1891; 5 years.

Claim.—1st. The combination in a wheel of a hub provided with spokes in two rows, each spoke having a head *g*, adapted to be adjustably attached thereto, and to be attached to the tire and rim, with said tire and rim, the whole substantially as and for the purposes set forth. 2nd. The combination in a wheel of the hub *a*, two rows of spokes *d*, *e*, head *e*, bolts *f*, rim *b*¹, and tire *a*¹, the whole substantially as described.

No. 37,514. Carpet Fabric. (Tissus à tapis.)

Hugh Patterson and William Z. Walker, both of Philadelphia, Pennsylvania, U.S.A., 2nd October, 1891; 5 years.

Claim.—A carpet fabric having three continuous weft planes and the warp threads arranged in sets of four warp threads each, and interwoven with the weft threads of the top and bottom planes, to form top and bottom plies, enclosing the other weft plane between them, the weft threads being interchanged in position among the three planes, according to the exigencies of the pattern and to obviate shading, as described, and the warp threads being interwoven in the two plies, and crossing from one to the other ply when an interchange of warp becomes necessary, two of said warps crossing directly and the other two lying for two shots between the outer and intermediate plies, and then passing each to the outer face of the opposite ply, substantially as set forth.

No. 37,515. Method of Manufacturing Bromine and Iodine. (Méthode de fabrication de brome et d'ode.)

Herbert Healy Wing, Buffalo, N.Y., U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. In the manufacture of bromine, the method of producing fumes containing chlorine and bromine, which consists in mixing bittern with silicious material and calcining the mixture, substantially as set forth. 2nd. The method of producing bromine, which consists in calcining a mixture of bittern and silicious material, bringing the resulting fumes, which contain chlorine and bromine, in contact with bittern and collecting the resulting bromine, substantially as set forth. 3rd. In the manufacture of bromine, the method of producing iodine as a by-product, which consists in calcining a mixture of bittern and silicious material and collecting the sublimed iodine, substantially as set forth. 4th. The herein described method of producing bromine and iodine, which consists in calcining a mixture of bittern and silicious material whereby fumes containing chlorine, bromine and iodine are formed, collecting the sublimed iodine, bringing the remaining fumes in contact with bittern water whereby the bromine and iodine contained in the same are liberated, and collecting the liberated iodine and bromine, substantially as set forth.

No. 37,516. Type Writing Machine.*(Clavigraphie.)*

Michael Hearn and Morgan Donne, both of London, England, 2nd October, 1891; 5 years.

Claim.—1st. In a type writing machine, a number of independent type levers *c*, formed with cranked weighted heels *c*¹, and mounted upon axis of motion arranged in the arc of a circle and normally held in a vertical or approximately vertical position by their own gravity, and at their outer ends cranked or bent and furnished with long type pieces *c*¹, in combination with an alignment device consisting of a bracket or projection *c*¹¹, from an arm *c*¹⁰, and having an opening *c*¹², to allow of the passage of the type pieces *c*¹, and inclined walls *c*¹³, to the narrow part of such opening, the bracket *c*¹¹, being located before the printing point and towards the front of the machine so as to leave an unobstructed view of the printing to the rear of such bracket, substantially as herein shown and described. 2nd. In a type writing machine, the combination of a number of independent type levers *c*, formed with cranked weighted heels *c*¹, and mounted upon an axis of motion *c*¹, arranged in the arc of a circle in a comb or slotted segment *c*¹⁰, and normally held in a vertical or approximately vertical position by their own gravity, and at their ends bent or cranked and furnished with long type pieces *c*¹, having several characters upon the face thereof, an alignment device consisting of a bracket or projection *c*¹¹, from an arm *c*¹⁰, and having an opening *c*¹², to allow of the passage of the type pieces *c*¹, and inclined walls *c*¹³, to the narrow part of such opening, the bracket *c*¹¹, being located before the printing point so as to leave an unobstructed view of the printing to the rear of such bracket, and a number of key levers *d*, mounted upon axis of motion *d*¹, arranged in the arc of a circle in a comb or slotted segment *d*¹⁰, to correspond with the type levers *c*, such levers *d*, being formed with recesses *d*², and noses *d*³, at one end, and keys *d*⁴, at the other end, substantially as herein shown and described. 3rd. In a type writing machine, the combination of a number of independent type levers *c*, formed with cranked weighted heels *c*¹, and mounted upon axis of motion arranged in the arc of a circle and normally held in a vertical or approximately vertical position by their own gravity, and at their ends furnished with long type pieces *c*¹, having several characters upon the face thereof, a number of key levers *d*, mounted upon axis of motion arranged in the arc of a circle to correspond with the type levers *c*, and a cylindrical platen *f*¹³, mounted in a frame *f*, connected by arms *g*¹, and a rock shaft *g*², with a lever *g*³, adapted to receive a differential depression by pistons *h*, *h*¹, in order to bring the platen *f*¹³ forward into position to receive the impression of the capitals or numerals of the type pieces *c*¹, substantially as herein shown and described. 4th. In a type writing machine, the combination of a number of independent type levers *c*, formed with cranked weighted heels *c*¹, and mounted upon an axis of motion *c*¹, arranged in the arc of a circle in a comb or slotted segment *c*¹⁰, and normally held in a vertical or approximately vertical position by their own gravity, and at their ends bent or cranked and furnished with long type pieces *c*¹, having several characters upon the face thereof, an alignment device consisting of a bracket or projection *c*¹¹, from an arm *c*¹⁰, and having an opening *c*¹², to allow of the passage of the type pieces *c*¹, and inclined walls *c*¹³, to the narrow part of such opening, the bracket *c*¹¹, being located before the printing point so as to leave an unobstructed view of the printing to the rear of such bracket, a number of key levers *d*, mounted upon axis of motion *d*¹, arranged in the arc of a circle in a comb or slotted segment *d*¹⁰, to correspond with the type levers *c*, such levers *d*, being formed with recesses *d*², and noses *d*³, at one end, and keys *d*⁴, at the other end, and a cylindrical platen *f*¹³, mounted in a frame *f*, connected by arms *g*¹, and a rock shaft *g*², with a lever *g*³, adapted to receive a differential depression by pistons *h*, *h*¹, in order to bring the platen *f*¹³ forward into position to receive the capitals or numerals of the type pieces *c*¹, substantially as herein shown and described. 5th. In a type writing machine, the combination of the platen *f*¹³, mounted in a frame *f*, the arms *g*¹, rock shaft *g*², and lever *g*³, the pistons *h*, *h*¹, capable of differential depression and provided with studs *h*², and the tubular guides *h*³, formed with vertical and horizontal slots *h*⁴, *h*⁵, substantially as herein shown and described. 6th. In a type writing machine, the combination of a paper carriage *f*, a caster wheel *f*¹, at the rear of such carriage, a table *a*^{**}, upon which the caster wheel travels, a bar *g*, upon which the front of the carriage is mounted with capability of sliding, arms *g*¹, connecting the bar *g*, with a rock shaft *g*², and a lever *g*³, fixed to the rock shaft *g*², substantially as herein shown and described. 7th. In a type writing machine, the combination of a curved spacing bar *e*, located beneath the key levers *d*, and mounted upon axes of motion at the rear of the machine, an escapement rack bar *e*¹, fixed to the spacing bar *e*, and provided with toothed racks *e*¹, *e*^{1*}, a paper carriage *f*, at the rear supported upon a caster wheel *f*¹, and at the front supported with capability of sliding upon a bar *g*, connected by arms *g*¹, with a rock shaft *g*², to which is fixed a lever *g*³, two broad pallets *f*², *f*³, attached to the carriage *f*, and adapted to alternately engage the racks *e*¹, *e*^{1*}, the pallet *f*², being fixed and the pallet *f*³, movable, an arm *f*⁴, mounted upon a shaft *f*⁵, and on which the pallet *f*³, is formed, a spring *f*⁶, to retain the pallet *f*³, normally in engagement with the rack *e*¹, an arm or offset *f*⁸, upon the shaft *f*⁵, a bell crank lever *f*¹⁰, mounted upon the end of the carriage and adapted to partially rotate the shaft *f*⁵, and lift the pallet *f*³, out of engagement with the rack *e*¹, and a spring drum *j*, to draw the carriage forward, substantially as herein shown and described. 8th. In a type writing machine, the combination of a vertically movable escapement rack bar *e*¹, a paper carriage *f*, provided with broad pallets to engage the teeth *e*¹, *e*^{1*}, of the rack bar, a shaft *f*⁵, connected with one of such pallets and provided with an offset *f*⁸, a bell crank lever *f*¹⁰, mounted upon the end of the carriage and adapted to partially rotate the shaft *f*⁵, and lift the pallet *f*³, out of engagement with the rack *e*¹, a spring drum *j*, to draw the carriage forward, a cylindrical platen *f*¹³, mounted upon the carriage *f*, with capability of revolution, a ratchet wheel *f*¹⁶, fixed upon the platen *f*¹³, a spring stop *f*^{16*}, to regulate the movement of the platen, and a clawer or driver *f*¹⁷, engaging the wheel *f*¹⁶, and actuated by a bell crank lever *f*²³, mounted upon the end of the carriage at the side of the lever *f*¹⁰, and adapted to actuate the clawer or driver and rotate

the platen, substantially as herein shown and described. 9th. In a type writing machine, the combination of a paper carriage *f*, a platen *f*¹³ capable of revolution to carry the paper forward, and a paper curler consisting of several bars, *f*²², coiled in the form of a scroll or flat helix, and adapted to receive the sheet of paper as it leaves the platen, substantially as herein shown and described. 10th. In a type writing machine, the combination of a paper carriage *f* having a bar *f*²² provided with a divided scale, a spring drum *j* connected with the carriage by a chain and provided with a circular scale corresponding with that of the paper carriage and formed with a ring of holes *j*¹ therethrough, a loose pin *j*⁴ to fit such holes, a bell or gong *j*⁵, and a hammer or striker *j*⁶, the latter fixed upon a flexible arm *j*⁷, and provided with a nose or projection *j*⁸, adapted to engage the lower end of the pin *j*⁴ in the revolution of the drum *j*, substantially as herein shown and described. 11th. In a type writing machine, the combination of a cylindrical platen *f*¹³, of two ribbon spools, one *l* mounted upon an axis parallel with the platen, and the other *m* mounted upon an axis and disposed at a corresponding angle to the spool *m*, a spur wheel *l*¹, fixed to the spool *l*, a bevelled wheel *m*² fixed to the spool *m*, a shaft *p* mounted in bearings with capability of endway and rotary motion, a ratchet wheel *p*¹ fixed upon such shaft, a pawl *p*² engaging the ratchet wheel and carried by an arm *p*³ of the rack bar *e*¹, a spur pinion *p*⁴ fixed upon the shaft *p* at one side of the ratchet wheel *p*¹, and adapted to engage the spur wheel *l*¹, and a spiral pinion *p*⁵ fixed upon the shaft *p* at the other side of the ratchet wheel *p*¹, and adapted to engage the bevelled wheel *m*², and means for moving the shaft *p* endwise, substantially as herein shown and described. 12th. In a type writing machine, the combination of the two spools *l*, *m*, one mounted upon an axis parallel to the platen *f*¹³, and the other mounted upon an axis thereto, the spur wheel *l*¹ and bevelled wheel *m*² fixed upon the spools, the shaft *p* having the corresponding wheels *p*¹, *p*², fixed thereon, a lever *q*¹ at one end engaging an annular groove in the shaft *p*, and at the other end engaging the notches *q*² of a spring bar, and a handle *q*³ to turn such lever and move the shaft *p* endwise, substantially as herein shown and described.

No. 37,517. Semaphore Signal. (Sémaphore.)

Nathan Jobe Smith, Pontiac, Michigan, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. The combination with a railway switch and semaphore signals, of semaphore actuating mechanism engaged with the switch lever, whereby as the switch rails are moved to open them from the main track, the semaphores will be thereby simultaneously actuated, substantially as described. 2nd. The combination with a switch and semaphore signals, of semaphore actuating mechanism engaged with the switch, whereby the semaphores are actuated simultaneously with the switch rails, said semaphore actuating mechanism consisting of levers *E*, *E*¹, having short arms *e*¹, and a sliding block or plunger *D*¹ adapted to be shifted longitudinally between said short arms, substantially as and for the purposes described. 3rd. The combination with a switch and semaphore signals, of semaphore actuating mechanism engaged with the switch whereby the semaphores are actuated simultaneously with the shifting of the switch rails, and means whereby the semaphores may be held in their position of warning both when the main track is closed or open, substantially as described. 4th. The combination with the switch and semaphore actuating mechanism, of the connecting rod *D* provided with slot *d*, and a hinged dog *d*¹, said dog adapted to hold the semaphores in their position of warning when the main track is closed, substantially as described.

No. 37,518. Car for Railways and Tramways. (Char pour chemins de fer et tramways.)

Everett B. Macmillan, Chicago, Illinois, U. S. A., 2nd October, 1891; 5 years.

Claim.—1st. A passenger coach or other car without platform, having its body or frame constructed so that the ends of any two contiguous cars in any train shall present to each other a substantial plane to act at mutual buffers without the intervention of buffer or other device between the cars either above or below, substantially as and for the purpose set forth and described. 2nd. A car or coach having the longitudinal beams extending to the extreme ends of the car frame to act in conjunction with the buffer beams to resist and distribute the shock, all substantially as and for the purpose set forth. 3rd. In a car or coach, a buffer beam placed at the end of the car connected with the ends of the longitudinal timbers above and below, forming an upper and lower buffer combined with a system of longitudinal timbers forming the frame of said car, and constructed so that the shock on the buffer beam shall be resisted by the entire system of longitudinal timbers, substantially as and for the purpose set forth. 4th. In a car or coach, the combination of an upper and lower buffer beam for receiving the shock on the end of a car, with a frame composed of longitudinal timbers and a roof-truss for sustaining the floor, substantially as and for the purpose set forth. 5th. In a car, the combination of a roof truss for sustaining the floor of the car composed of longitudinal and vertical timbers with diagonal braces, and the means for suspending the floor to the said roof truss, all substantially as and for the purpose set forth. 6th. In a car without end platform, the combination of an upper and lower buffer beam supported by means for holding the same, and a roof truss and floor timbers, with means for fastening the entire frame so that it will constitute a rigid resisting structure throughout its entire extent, all substantially as and for the purpose set forth.

No. 37,519. Machine for Reseating Valves. (Machine pour replacer les soupapes.)

Charles Laforest Morse, Athol, Massachusetts, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. In a machine for dressing valve seats, the combina-

tion of a chuck having adjustable jaws adapted to be clamped upon the valve casing, and a revolving spindle carrying a cutting tool, substantially as set forth. 2nd. In a machine for dressing valve seats, the combination of a chuck having radially adjustable jaws screw-threaded on their inner and outer sides, a tubular standard mounted upon the said chuck, a screw-threaded sleeve mounted on said standard, and a spindle journaled in the latter and having a cutting tool at its lower end, substantially as set forth. 3rd. In a machine for dressing valve seats, the combination, with a chuck having radially adjustable jaws screw-threaded upon their inner and outer sides, of a revolving spindle having a handle at its upper end, a cutting tool mounted detachably at the lower end of said spindle, and mechanism for feeding the latter in a forward or downward direction, substantially as set forth. 4th. In a machine for reseating valves, the combination of a chuck having radially adjustable jaws screw-threaded at their inner and outer ends, a tubular standard upon the upper side of said chuck, sleeve mounted on said standard and having a handle at its upper end, a stem or spindle having a handle at its upper end, and a cutting tool mounted detachably at the lower end of said spindle, substantially as and for the purpose set forth. 5th. In a machine for dressing valve seats, the chuck having radially adjustable jaws to engage the valve casing, the revolving spindle carrying the cutting tool, and the feeding mechanism to feed the spindle in a forward or downward direction, as set forth. 6th. In a machine of the class described, the combination of a chuck, the back plate of which has an upwardly extending exteriorly screw-threaded tube, a spindle journaled in said tube and extending through the chuck, a hand wheel mounted upon the said spindle, and a tube engaging a shoulder near the upper end of the spindle and having an interiorly threaded portion engaging the exteriorly threaded tube upon which it is adjustably mounted, substantially as set forth. 7th. In a machine of the class described, the combination of a chuck having an upwardly extending exteriorly screw-threaded tube, a spindle mounted revolvably in said tube and having a hand wheel at its upper end, an adjustable tube having a hand wheel at its upper end engaging a shoulder formed upon the spindle below the hand wheel of the latter, said adjusting tube being provided with an interiorly threaded portion engaging the exteriorly threaded tube of the chuck, and a tightening nut mounted upon a tapering exteriorly threaded and longitudinally slotted portion of the adjusting tube, substantially as and for the purpose set forth. 8th. In a machine of the class described, the combination with the chuck having an upwardly extending tube, of a spindle mounted revolvably in the said tube and having a hand wheel, the rim of which is provided with recesses, and means for adjusting the said spindle longitudinally, substantially as and for the purpose set forth. 9th. In a machine of the class described, the combination of a chuck having an upwardly extending tube, a spindle mounted revolvably in said tube and having a shoulder near its upper end, the adjusting tube mounted exteriorly upon the tube extending from the chuck, and having a hand wheel engaging the shoulder of the spindle, a hand wheel mounted upon the latter above the hand wheel of the adjusting tube, and a nut mounted upon the spindle above the hand wheel of the latter and adapted to force the said hand wheel in a downward direction to take up slack caused by wear upon the spindle, substantially as therein shown and specified. 10th. In a machine of the class described, the combination with the chuck having a revoluble and longitudinally adjustable spindle provided at its lower end with a screw-threaded stem, of an extension rod provided at one end with a threaded recess to engage the said stem, and at its opposite end with a screw-threaded stem, said extension rod being provided with a transverse perforation, substantially as and for the purpose set forth. 11th. In a machine of the class described, the combination with a chuck having a revoluble and longitudinally adjustable spindle extending between the radially adjustable jaws of said chuck, of an auxiliary chuck adapted to be mounted detachably upon the lower end of the said spindle and having radially adjustable jaws, the lower ends of which are screw-threaded and their inner and outer sides, substantially as and for the purpose set forth. 12th. The combination with the chuck having a revoluble and longitudinally adjustable spindle, of an auxiliary chuck mounted detachably upon the lower end of said spindle, and a casing adapted to be engaged by and firmly connected with the main chuck, said casing having a conical or tapering portion provided with a longitudinal slot or opening, and a cutter mounted adjustably in the said slot, substantially as and for the purpose set forth. 13th. In a machine of the class described, the herein described disk dressing attachment, the same comprising a casing having a conical or tapering portion provided with an exterior rib adapted to be mounted in a vise, a longitudinal slot or side opening and a cutter mounted adjustably in the said slot, substantially as set forth. 14th. The disk dressing attachment, comprising a casing having a tapering portion provided with a slot or side opening, and a seat formed adjacent to the said slot, in combination with the cutter having transverse slots to receive screws by means of which it is mounted upon the said seat, and screws inserted into the outer side of said seat and having heads bearing against the outer edge of the said cutter, substantially as and for the purpose set forth. 15th. In a machine of the class described, the combination of a chuck having a revoluble and longitudinally adjustable spindle provided with a hand wheel and means for feeding and longitudinally adjusting said spindle, an auxiliary clutch mounted detachably upon the lower end of said spindle, a casing interiorly screw-threaded at its upper edge to be engaged by the radially adjustable jaws of the main chuck, and having a tapering or conical portion at its lower end provided with a longitudinal slot or side opening and a cutter mounted adjustably in the said slot, substantially as and for the purpose set forth. 16th. In a machine of the class described, the combination with a chuck having a revoluble and longitudinally adjustable spindle provided with a screw-threaded stem at its lower end and means for feeding and adjusting the said spindle, of a cutter adapted to be mounted detachably upon said spindle, said cutter consisting of an oblong bar having a screw-threaded recess to engage said spindle and provided on opposite sides of said recess with oppositely inclined teeth, substantially as and for the purpose set forth. 17th. The combination with the herein described machine, comprising essentially a chuck having a

revoluble and longitudinally adjustable spindle provided with a screw-threaded stem at its lower end, of a cutting tool consisting of an oblong bar having a screw-threaded recess and provided on opposite sides of said recess with longitudinally parallel and oppositely inclined teeth, substantially as herein described and for the purpose set forth.

No. 37,520. Cultivator. (*Scarificateur.*)

Camillo Sivori Norcross and Thomas West, both of Walnut Grove, Illinois, U.S.A., 2nd October, 1891; 5 years.

Claim.—1st. In a garden cultivator, the combination, of the head-plate A, having the handle socket and the series of openings, A², the tines having the rear end projections, C¹, the bearing-plate, D, having its ends, D¹, bent down, with their extremities extending under the head-plate, and having its front edge, D², bent down and formed with the recesses, D³, in which the tines fit, and securing bolts passing through the head-plate and bearing-plate, substantially as set forth. 2nd. The combination, of the head-plate, having the handle socket and formed with the longitudinal slots, A¹, and the rear openings, A², the tines having the rear pivot-projections, C¹, the adjustable bearing-plate, D, having its ends, D¹, bent down and under the head-plate, having its front edge bent down and formed with the recesses, D³, and formed with the bolt-holes, d, and the bolts, E, having the nuts on their threaded upper ends, substantially as set forth.

No. 37,521. Clothes Line. (*Corde de s'chage.*)

Frederick S. McKay, Hatley, Quebec, Canada, 2nd October, 1891; 5 years.

Claim.—1st. In combination with a clothes line having two strands, a twister in the form of a wheel, having four spokes, each spoke perforated to receive a strand of the line, one spoke being much heavier at its outer end than the others, as and for the purposes described. 2nd. In combination with a clothes line having two strands, a wheel shaped twister with four spokes having perforations weighted by one spoke being heavier than the others, and a swivel operating to relieve the twists in the line, as and for the purposes described. 3rd. In a clothes line, the combination of a line having two strands fixed at one end to a suitable support, the other end passing over a pulley and having attached thereto a weight to keep it taut, and a twister having notched perforations such as herein shown and described to receive a strand of the line, one part being much heavier at its outer end than the others for the purpose of weighting, as and for the purpose described. 4th. In a pinless clothes line, the laying together of the two strands to form twists between which the clothes are securely held upon the line, as set forth. 5th. The storing of these twists in the upper double strand of the line to be transferred by the twister to the lower double strands of the line when putting the clothes on, and the re-transferring of these twists back from the lower to the upper double strands of the line when the clothes are taken off, substantially as set forth.

No. 37,522. Piano Case. (*Boite de piano.*)

Jeronimus Reimers, Toronto, Ontario, Canada, 2nd October, 1891; 5 years.

Claim.—1st. In a piano case, the side pieces of the back section, plates secured to the inner sides of said side pieces, each of said plates fitted with a threaded aperture in combination with the side pieces of the front section, openings through each of the side pieces of said front section, said openings corresponding in size and location to the threaded apertures in the metallic plates secured to the side pieces of the back section, and screws passing through said openings and entering said threaded apertures rigidly holding the front and rear sections of the piano case together, substantially as described. 2nd. In a piano case, the side pieces of the back section plates secured to the inner sides of said side pieces, each of said plates fitted with a threaded aperture, guide blocks on the inner side of said side pieces, in combination with the side pieces of the front section, openings through each of the side pieces of said front section, said openings corresponding in size and location to the threaded apertures in the metallic plates secured to the side pieces of the back section, screws passing through said openings and entering said threaded apertures, and grooves or recesses on the outer side of the side pieces of the front section to receive said guide blocks, substantially as described. 3rd. A piano case consisting of the combination of a front section and a back section made independent of and separable from each other, and means for rigidly uniting said sections, substantially as described. 4th. In a piano case, the combination of a front section having two side pieces, and a back section having two side pieces which overlap the side pieces of the front section, and means for rigidly uniting said sections, substantially as described.

No. 37,523. Manufacture of Gas and Apparatus to be used Therefor. (*Fabrication du gaz et appareil pour cet objet.*)

John Henry Williams Stringfellow, London, England, 3rd October, 1891; 5 years.

Claim.—1st. The process of manufacturing gas, as above described, which consists in causing atmospheric air to pass firstly through or in contact with liquid hydro-carbon, and secondly, through or in contact with water, and without the application of heat, as and for the purposes set forth. 2nd. The process of manufacturing gas, as above described, which consists in the saturation of a hydro-carbon charged gaseous fluid with vapour of water at the normal temperature of the atmosphere, as and for the purpose set forth. 3rd. The

apparatus for making gas, and consisting essentially of a receptacle divided into two or more chambers connected with one another by pipes, two of the chambers at least containing each a porous dome (to be charged respectively with hydro-carbon and with water) beneath which are the inlets to the respective chambers, and suitable inlets and outlets to and from the receptacle for air and gas, substantially as described. 4th. A portable gas lamp constructed and arranged substantially as described and shown.

No. 37,524. Receiver for Telephones.

(*Récepteur téléphonique.*)

Frank Tiffin Tinning and William Kerr Sumner Tinning, both of Toronto, Ontario, Canada, 3rd October, 1891; 5 years.

Claim.—1st. A telephone receiver holder comprising a bracket A, having a friction disk B, formed on its end, thumb screw D, chain or cord *f*, connected at one end to the thumb screw D, and at the other end to the telephone hook, friction disk C, having sleeve J, formed integral, and extension arm F, secured in any position desired in the sleeve J, by the set screw K, all combined, substantially as and for the purpose hereinbefore set forth. 2nd. In a telephone receiver holder, the combination of extension arm F, having a socket in its outer end for holding spindle *g*, and cross bar G, having fingers for holding a receiver, and a spindle *g*, for holding the cross bar G, adjustable by set screw I, in its socket in arm F, substantially as and for the purpose hereinbefore set forth.

No. 37,525. Electrically Heated Oven.

(*Chauffage des fourneaux par l'électricité.*)

Butterfield Mitchell Electric Heating Company, Boston (assignees of Willis Mitchell), Malden, both in Massachusetts, U. S. A., 5th October 1891; 5 years.

Claim.—1st. An oven or heater provided with successive layers of non-conducting material, and a wire which forms part of an electric circuit and is wound in successive layers between said non-conducting layers, for the purpose set forth. 2nd. An oven or heater provided with successive layers of non-conducting material and a wire which forms part of an electric circuit and is wound between said layers and embedded therein, substantially as set forth. 3rd. An oven or heater provided with successive layers of asbestos or other non-conducting material arranged about it and a wire forming part of an electric circuit and wound between said non-conducting layers about said oven so as to form successive layers of wire having each coil or spiral insulated and separated by the material in which it is embedded, substantially as set forth. 4th. An oven or heater provided with successive layers of wire surrounding it and forming part of an electric circuit, said wire being coiled in spirals, each of which is sufficiently separated from all the others to heat the interior of the oven without depending on the heat produced by the resistance of the wire, substantially as set forth. 5th. The combination of a wire wound spirally in layers and forming part of an electric circuit with layers of non-conducting material interposed between said layers of wire and holding the spirals thereof in place, an outer casing A, and an interior lining C, the whole constituting an electrically heated oven, substantially as set forth.

No. 37,526. Electric Steam Generator and Heater.

(*Générateur de vapeur et calorifère électrique.*)

Butterfield Mitchell Electric Heating Company, Boston (assignees of Willis Mitchell), Malden, both in Massachusetts, U. S. A., 5th October, 1891; 5 years.

Claim.—1st. In a steam generator, the combination of a water reservoir with a heating device consisting of a series of layers alternating with water spaces, a wire forming part of an electric circuit and wound on said layers within said spaces, and inlet and outlet pipes connecting said heating device and reservoir, substantially as and for the purpose set forth. 2nd. In combination with reservoir B, the concentric, hollow layers *c*, having water spaces between them which are closed at the ends, the wire D, wound on said layers within said spaces and forming part of an electric circuit, the inlet pipes E, extending from one end of said reservoir independently to said spaces at one end of the heating device, and the outlet pipe F, having branches *f*, whereby the water passes from the other end of said heating device to the said reservoir, substantially as set forth. 3rd. A heating device consisting of a core or successive layers and a wire wound thereon, forming part of an electric circuit, the winding being such that each wire coil or spiral is separated considerably from the others and is located in a space about ten times its own width, more or less, according to the service required, in order that said wire may generate a heat in excess of the heat of resistance, substantially as set forth.

No. 37,527. Rack for Holding Pens, Pencils, etc.

(*Porte-plume, crayon, etc.*)

Lambert John Dopping Hepenstal, Halifax, Nova Scotia, Canada, 5th October, 1891; 5 years.

Claim.—A rack for pen handles, pencils, and similar articles, formed of spring wire or its equivalent, bent and shaped so as to form a pair of jaws J, J, and a holder S', substantially as shown and described.

No. 37,528. Tooth for Harrows.

(*Dent de herse.*)

George Monilaws and Neville J. Lindsay, both of Calgary, North West Territories, Canada, 5th October, 1891; 5 years.

Claim.—The spiral or curved tooth, as described above for the purposes hereinbefore set forth.

No. 37,529. Cutter Bar for Harvesters.

(*Porte-lames de moissonneuse.*)

Isaac F. Bassford and Adolph Docter, both of Milwaukee, Wisconsin, U.S.A., 5th October, 1891; 5 years.

Claim.—1st. The bar A, having a raised web or rib 3, at the back edge, and provided with a dovetail groove 2, in combination with a series of knife sections B, each having a dovetail bar I, fitting into said groove, the rear edge of said sections abutting against the web or rib, whereby the cutter bar and knife sections are reinforced, as set forth. 2nd. The cutter bar A, provided with a dovetail groove 2, and having a raised web or rib 3, along the back edge, and a channel C, intersecting said groove near one end of the bar, in combination with knife sections B, having a bar I, fitting into said groove, and a key D, fitting into said channel, and held fixedly by a screw 5, or other fastenings, for locking the knife sections together, as set forth. 3rd. The knife sections B, having a bar I, and provided with a hole or indentation E, as and for the purpose set forth.

No. 37,530. Clamp for Railway Tracks.

(*Crampon pour voies de chemin de fer.*)

John Fain Adams, Seddon, Alabama, U.S.A., 5th October, 1891; 5 years.

Claim.—A track clamp, consisting of two rods formed with fixed jaws having undercut recesses with flat upper bearing surface and separated screw-threads, both right and left hand, movable jaws movable upon one set of threads, set-nuts movable upon the same threads as the movable jaws, and a turn-buckle connecting the adjacent ends of the rods and movable upon the other set of threads, substantially as specified.

No. 37,531. Damper for Stove Pipes.

(*Clé de tuyaux de poêle.*)

Charles Eager Stewart, Hamilton, Ontario, Canada, 5th October, 1891; 5 years.

Claim.—1st. In a stove pipe damper, the combination of the perforated disk, formed with loops, and a combined handle, spring and holder, constructed substantially as and for the purpose specified. 2nd. In a stove pipe damper, the combination of a disk A, having perforated holes B, raised cast loops *e, f, i*, and a combined handle, spring and holder C, formed and secured as shown to the disk, substantially as and for the purpose specified.

No. 37,532. Manufacturing Steel and Iron.

(*Fabrication de l'acier et du fer.*)

James MacKintire, 27 Victoria Road, Broomhall Park, Sheffield, York, England, 5th October, 1891; 5 years.

Claim.—1st. The improvements in the manufacture of steel and iron, consisting in the manufacture and use of the combination of materials forming a powder composed of carbonate and phosphate of calcium, black oxide of manganese and tannic acid in the proportions referred to, substantially as set forth. 2nd. In the manufacture of steel and iron, the manufacture and use of a composition consisting of carbonate and phosphate of calcium, black oxide of manganese, tannic acid, tar and hot water, in the proportions specified, substantially as set forth. 3rd. The manufacture and use of the within-mentioned combination of materials in the form of an alloy, composed of pig-iron, carbonate and phosphate of calcium, black oxide of manganese, tannic acid, soot, animal charcoal tar and hot water, in the proportions as specified, substantially as set forth.

No. 37,533. Stretcher for Lace Curtains.

(*Métier à rideau de soie.*)

James Gilray, Buffalo, New York, U.S.A., 5th October, 1891; 5 years.

Claim.—The herein described curtain-stretcher, consisting of the combination of the cross bars, the clamps, the side bars, each of the latter divided midway of its length, and having its two parts united by a hinge applied to one side, and by a flanged plate *f*, secured to the opposite side, pins *d*, formed with flat-shaped point, and hinged legs *m*, attached to the frame, all constructed substantially as and for the purpose specified.

No. 37,534. Spark Arrester.

(*Arrête-etincelle.*)

George R. Anderson, Roanoke, Virginia, U.S.A., 5th October, 1891; 5 years.

Claim.—1st. In a spark-arrester, the boiler, and adjustable diaphragm having a flange 21, and means whereby the said diaphragm may be adjusted longitudinally within the said boiler dividing the exhaust compartment from the cinder-box, the size of the exhaust compartment being regulated by the adjustment of said diaphragm, the smoke-stack communicating with both the exhaust compartment and the cinder-box, the deflector in the smoke-stack to deflect the cinders and sparks as they ascend the smoke-stack from the exhaust compartment into the cinder-box, the pipe 33, arranged within the smoke-stack, the lower end of the said pipe opening into the cinder-box, and the upper end thereof being secured rigidly to the inner face of the smoke-stack and opening through the upper end of the same, so as to be inclosed by the latter, and to form an unobstructed outlet for all gases which may accumulate in the cinder-box, substantially as described. 2nd. In a spark-arrester, the boiler having an adjustable diaphragm dividing the exhaust compartment from the cinder-box, the smoke-stack communicating with the exhaust compartment and the cinder-box, the said smoke-stack

comprising an inclosing case opening into the cinder-box, a smoke-stack proper situated within the said inclosing case and communicating with the exhaust chamber, perforations 6 in the sides of the said smoke-stack proper, the deflector curved over the smoke-stack and provided with the perforations 13, and having its sides cut away, as shown at II, to allow the smoke and gases to pass upward, but to deflect the sparks and cinders down through the inclosing case into the cinder-box, substantially as described.

No. 37,535. Car Coupler. (*Attelage de chars.*)

Joseph Kormil, Goldendale, Washington, U.S.A., 5th October, 1891; 5 years.

Claim.—In combination with a car coupler constructed substantially as shown, having a chamber of sufficient size to receive the link and automatic pin-support, the chamber having a flat inclined floor, together with a link having end portions which extend beyond the apertures therein, and concave portions upon which the ball or pin-support will rest when the pin is in engagement with the openings in the link, substantially as set forth.

No. 37,536. Suspender, or Rack, for Drying Clothes. (*Appareil d'étendage ou sechoir à linge.*)

Solomon Roos, Hamilton, Ontario, Canada, 5th October, 1891; 5 years.

Claim.—In a clothes suspender for drying purposes, the combination of the upright support and guide, A, having regulating hand screw, C, the adjustable vertical post, B, provided with movable rings, E and H, the projecting arms, D, the braces, F, the pulley, J, the cords or rods, K, and the cord or chain, I, all arranged and devised, substantially as and for the purpose hereinbefore set forth.

No. 37,537. Wheel. (*Roue.*)

Andrew B. Starkey, Kearney, Nebraska, U.S.A., 5th October, 1891; 5 years.

Claim.—1st. In a wheel, the axle-box A, having its inner end enlarged and provided with a shoulder C and end screw-threads B, in combination with the spokes D, having T-headed inner ends E, the inner extremities of which heads are of the same thickness as said shoulder against which they abut, and sleeves F, F, screwed on said threads, and having flaring inner ends embracing the extremities of said T-headed ends, substantially as described. 2nd. In a wheel, the axle-box A, having threaded ends B, in combination with the spokes D, having T-headed inner ends E, whose faces stand in radial lines from the centre of said box, and sleeves F, F, screwed on said threads and having flaring inner ends embracing the extremities of said T-headed ends, substantially as described. 3rd. In a wheel, the axle-box A, having its inner end enlarged and provided with a shoulder C and end screw-threads B, in combination with the spokes D, having T-headed inner ends E, whose faces stand in radial lines from the centre of said box, the inner extremities of which heads are of the same thickness as said shoulder, against which they abut, and sleeves F, F, screwed on said threads and having flaring inner ends embracing the extremities of said T-headed ends, substantially as described.

No. 37,538. Garment Measure.

(*Mesure pour les vêtements.*)

William George Venner, Hamburgh, New York, U.S.A., 5th October, 1891; 5 years.

Claim.—1st. A device or conformator for retaining blanks for marking patterns, consisting of a series of sections, the edges of which sections are separable, and, having elastic connections, are movable toward and from each other, and springs for automatically adjusting the edges of the sections in relation to each other upon the object, and means for securing the blanks to the sections, substantially as described. 2nd. A conformator and a series of pattern blanks temporarily secured to the interior thereof, the edges of which are separable and movable toward and from each other, and said blanks being larger than their respective sections of the conformator, and having their adjacent edges overlapping between the adjacent edges of said sections of the conformator, and means for marking the outlines of two adjacent pattern sections at one end the same time, as for instance, a marking wheel, substantially as described.

No. 37,539. Center Bearing Plate.

(*Plaque central de coussinet.*)

The Solid Pressed Steel Company, (assignees of William Voos), all of Chicago, Illinois, U.S.A., 5th October, 1891; 15 years.

Claim.—1st. The pressed steel bearing plate A, composed of the flat base portion, and the interior annular portion, said annular portion being in radial section U shaped, the lower rounding curve of the U, forming the bearing, and the inner leg of the U, extending up to the flange of the base, substantially as described. 2nd. The pressed steel bearing plate B, composed of the flat base portion and the interior annular portion, said annular portion being in radial section S shaped, the inner curve of the S, forming the bearing portion and being substantially in the plane of the base, substantially as described. 3rd. The combination of the plate A, having the flat base and the annular portion with U-shaped radial section, with the plate B, having the flat base and the annular portion with S-shaped inner radial section, the rounding curve of the U, being adapted to fit within and bear upon the inner curve of the S, substantially as described.

No. 37,540. Car Heating Apparatus.

(*Appareil de chauffage des chars.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, (assignees of James Hale Sewall, Chicago, Illinois), U.S.A., 5th October, 1891; 5 years.

Claim.—1st. In a car heating apparatus, a system of circulating pipes within the car and two independent heaters, both in operative contact with said circulating system, adapted to be operated simultaneously or separately by heat imparted thereto, combined with a current direct or interposed at the junction or point of contact of the said heaters and circulating system, substantially as described. 2nd. In a car heating system, the combination, with a system of water circulating pipes within the car, of a suitable radiator in contact with said circulating system, mechanism for supplying the said radiator with steam as a primary means of heating said circulating system, and a secondary independent heater also in operative contact or connected with said circulating system and adapted to heat the same, combined with a current director, substantially as described, interposed at the junction or point of contact of the primary and secondary heaters, and the circulating pipes, substantially as described. 3rd. In a car heating system, the combination with a system of circulating pipes within the car and two independent heaters in operative contact with said circulating system, each having exposed radiating surfaces, one of the said heaters being adapted to contain a fire and the other to receive steam, combined with a current director, substantially as described, located at the point of contact or junction of the said heaters and circulating system, substantially as described. 4th. In a car heating apparatus, the circulating system located within the car and having an expansion drum, two independent receptacles containing the circulating pipes connected at each end with the circulating system, a steam receiving case inclosing one of the said receptacles, combined with a current director located at the junction of the upper end of the said receivers, and the circulating system, substantially as and for the purpose set forth.

No. 37,541. Sewing Machine.

(*Machine à coudre.*)

Charles Culley, John Hassard McBrien and Joseph Sanderson, all of Toronto, Ontario, Canada, 5th October, 1891; 5 years.

Claim.—1st. In combination, the grooved cam on the main shaft, the bell crank lever secured on the main frame and engaging said cam by its vertical arm, the connecting rod connected to the bell crank lever at one end and to the needle lever at its opposite extremity, the means in the said bell crank lever to adjust the throw of the needle lever, the needle lever supported to vibrate on its fulcrum pin in the main frame, and the needle support carried on the fulcrum pin with the needle lever saddled over it, substantially as shown and described. 2nd. In combination, the cam on the main shaft to operate the work piece, the lever supported on the main frame at its lower end, a spring to maintain the upper end of said lever engaged with said cam, the connecting bar secured at one end to said lever and to the work piece at its opposite end, the work piece dovetailed to slide on its bearing on the main frame, the front lever having the feed point at its lower extremity and pivoted in the main frame to operate with said work piece, the rear curved lever supported pivoted to the top of said work piece, and the presser foot carried by said lever, substantially as shown and described. 3rd. In combination, the grooved cam on the main shaft to operate the presser foot, the lever secured centrally to the main frame and engaging said cam at its upper end, the jointed connecting bar connected to the lower end of said lever, and said jointed connecting bar connecting said lever with the curved lever carrying the presser foot thereon, substantially as shown and described. 4th. In combination, the looper cam carried on the main shaft, and the looper lever supported medially by a swivel bearing on the main frame, the springs securing the upper end of said lever in contact with the cam and the looper on the lower end of said lever and having a hollow axis therein to carry the wire or thread, substantially as shown and described. 5th. In combination, the clutch cam on the main shaft and in the rear of the main frame, the vertical rod carried in bearings on said main frame and in contact at its upper end with said cam, the clutch lever pivoted medially to the main frame and adjustably connected to the lower end of said vertical rod, and the rest bar supported from the main frame and engaged by said clutch lever at its rear end and having a spring to actuate it as specified, and a rest on its front end, substantially as shown and described. 6th. In combination, with a machine, for the purpose specified, the fixed pulley supported on a shaft in rear of the machine, the loose pulley in juxtaposition with the fixed pulley on the same shaft, and the means as specified to operate the same by frictional contact by a foot lever, substantially as shown and described.

No. 37,542. Process Relating to the Saccharification and Fermentation of Amylaceous Matter. (*Procédé de saccharification et fermentation de matières amylicées.*)

Eugène Carez, Brussels, Belgium, 6th October, 1891; 5 years.

Claim.—1st. The process of preventing the development of injurious and destructive ferments in the manufacture of syrups, sugar, or alcohol, which consists in subjecting a wort of amylaceous substances to the action of hydrofluoric acid in about the proportions and manner described. 2nd. The process of preventing the development of injurious and destructive ferments in the manufacture of syrups, sugar, and alcohol, which consists in subjecting a wort of amylaceous substances to the action of diastase, mixed previously with hydrofluoric acid in about the proportions and manner described. 3rd. The process of preventing the development of inju-

ous and destructive ferments in the manufacture of syrups, sugar, or alcohol, which consists in subjecting a wort of amylaceous substances to the action of diastase and hydrofluoric acid, and subsequently adding yeast treated with hydrofluoric acid, substantially as herein set forth. 4th. In manufacturing diastase, the process of preventing the development of injurious ferment, which consists in making an infusion of malt, adding thereto hydrofluoric acid in about the proportions stated, and finally separating the dregs from the solution of diastase. 5th. The process of saccharifying amylaceous substances at a low temperature from 20° to 30° centigrade by means of an infusion of malt treated with hydrofluoric acid, substantially as and for the purposes set forth. 6th. In the process of saccharification or fermentation of amylaceous matter, the addition of the fluorine compounds herein specified to the material operated upon, instead of hydrofluoric acid, substantially as and for the purposes described. 7th. The use of hydrofluoric acid or the saline compounds of fluor for the preparation of natural or compressed yeast or barn. 8th. The employment of the acid or the compounds mentioned above in the germination of the grain with a view to its subsequent use in breweries or distilleries. 9th. The employment of hydrofluoric acid or saline compounds of fluor in breweries for the purpose of rendering fermentation uniform and of preventing injurious fermentation.

No. 37,543. Churn. (*Baratte*.)

Dennis O'Neill, Barrie, Ontario, Canada, 6th October, 1891; 5 years.

Claim.—1st. In a wooden churn or receptacle, the combination of sides, ends, bottom and top, with cover therein, having a corrugated metallic false bottom laying on inside bottom, knob to remove cover, plug to draw off contents therefrom, buttons to fasten said cover, handles to oscillate said receptacle, having longitudinal rockers with mortises supporting legs, extending up the sides of body of receptacle and projecting downward on the inside of said rockers, near the bottom having tenons to fit mortises, substantially as set forth. 2nd. In a wooden churn or receptacle, the combination as herein described, having bottom and top rails tracing and supporting said receptacle, pins or bolts to fasten legs and rockers together, having corrugated metallic movable false bottom laying on inside bottom, or for any other desired purpose, substantially as set forth.

No. 37,544. Method of Lining Vessels, Digestors, etc. (*Méthode de doubler les vaisseaux, digesteurs, etc.*)

Charles Kellner, Vienna, Lower Austria, Empire of Austria, 6th October, 1891; 5 years.

Claim.—1st. The process of making an acid-proof lining, said process consisting in cementing upon the surfaces which are intended to be lined, plates made of hard glass, substantially as and for the purpose described. 2nd. The process of making an acid-proof lining, said process consisting in cementing upon the surfaces which are intended to be lined, plates made of hard glass and provided with roughened surfaces, substantially as and for the purpose described. 3rd. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, glass plates having a rough surface, and in superposing upon the joints between the plates of a second layer of plates, and eventually of a third and fourth layer of such plates made of hard glass, substantially as and for the purpose specified. 4th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder and quartz powder, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 5th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, and chalk, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 6th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, and powdered slate, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 7th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, brick powder, and chalk, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 8th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, and powdered slate, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 9th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, brick powder, and powdered slate, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 10th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, brick powder, and powdered slate, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described. 11th. The process of making an acid-proof glass lining, said process consisting in cementing upon the surfaces which are to be lined, hard glass plates by means of a compound composed of glass powder, quartz powder, brick powder, and powdered slate, said compound being thoroughly mixed with a solution of soluble silicates (soluble glass) into a thick pulp, substantially as described.

No. 37,545. Mowing Machine. (*Faucheuse*.)

John Fletcher Steward, Chicago, Illinois, U. S. A., 6th October, 1891; 5 years.

Claim.—1st. The arms b^2 and b^3 secured to the shaft B, and supporting the gears b^4 and b^5 , and the pinion d^1 adapted to rotate upon the axle B and mesh into the said planet gears in combination with the internal gear C, adapted to rotate upon the same axis, and provided with suitable lugs, and the stop c^2 , substantially as described. 2nd. The axle B, the supporting arm or arms, the planet gear or gears, the pinion d^1 , adapted to rotate on said shaft B, the internal gear C, provided with lugs, and the stop c^2 pivotally secured to the main frame, and adapted to be thrown into and out of engagement with the lugs of the said wheel C, all combined, substantially as described. 3rd. The lifting and tilting chain A', the lever G, provided with the segment B', and the lever g , in combination with the toe latch g' , substantially as described. 4th. The combination of the shoe, the false shoe having inclined portions h , and the sliding piece j^1 , adjustably secured to the shoe. 5th. The combination of the main shoe, the sliding support j^2 , and the false shoe, the latter directed upward and recurved downward to pass through the sliding piece, substantially as described. 6th. The shoe A', having the lugs M and M', the coupling piece A', having the sleeve adapted to lie between the said lugs, the hinge pin l secured from rotation in the said coupling piece, and the grass rod O, bolted thereto, all combined, substantially as described. 7th. The shoe, the coupling piece A', and the coupling pin with a pod to which the gathering rod may be bolted, all combined, substantially as described. 8th. The combination of the hinge bar, the lifting spring supported thereon, mechanism mounted upon the said push bar and adapted to be operated by the said spring, the main frame, and suitable connecting mechanism as the rod h^2 , all combined, substantially as described. 9th. The hinge bar, as A', a suitable lever fulcrum, as h^1 , secured thereto, the spring supported by and adapted to move on the hinge bar, and suitable connecting mechanism adapted to receive the pressure of the spring and to transmit the same to the said lever h^1 at one end of said lever to the main frame, all combined, substantially as described. 10th. The hinge bar, as A', the spring H, mounted thereon, and the stop h , at one end of said spring and adapted to receive the lever h^1 , and suitable slide, as h^2 , adapted to receive the pressure of the spring, and suitably connected to one end of the lever h^1 , and a suitable link, as h^3 , connecting the main frame with the other end of the said lever, all combined, substantially as described. 11th. The hinge bar, the spring mounted thereon, the fulcrum pivot h^1 suitably secured thereto, the arm of the lever h^1 extending in one direction from said pivot, the spring extending along the said bar A' in the other direction, and mechanism such as described to receive the pressure of the free end of the said spring and transmit it to a lever, as h^2 , and a suitable link, as h^3 , connecting the other end of said lever to the main frame, all combined, substantially as described. 12th. In a mowing machine, the hinge bar, as A', the spring mounted thereon, a suitable mechanism whereby the stress of said spring may cause a downward movement in a suitable lever, a link, as h^3 , connecting said lever to the main frame, all combined, substantially as described. 13th. In a mowing machine, the hinge bar, as A', the spring mounted thereon, a suitable mechanism whereby the stress of said spring may cause a downward movement in a suitable lever, the link, as h^3 , connecting said lever to the main frame, the said link being adjustable in its length, all combined, substantially as described. 14th. In a mowing machine, a bar, as A', adapted to rise and fall with the cutting apparatus, a spring, as H, mounted thereon, a lever, as h^2 , pivoted thereon and suitably arranged and connected to be rocked in the direction of lifting the cutting apparatus by said spring, said lever connected to the main frame by means of slotted connections, as the link h^3 , and slotted eye, h^4 , all combined, substantially as described. 15th. The spring actuated lever h^4 , connected to the main frame by a suitable link, as h^3 , the said lever adapted to be drawn by the weight of the cutting apparatus to such a position that its fulcrum h^2 shall be depressed so far that the action of the spring cannot be exerted to move it in the direction of producing stress upon the link h^3 until the said lever has been raised by means of the lifting apparatus to such an extent that the relative downward thrust causes the said lever to be moved in the direction of the lifting until the said lever, h^2 , is moved so far above a line drawn through the axis of the lever as to unlock, and thus permit the spring to move it further in the direction of lifting the said cutting apparatus. 16th. The spring actuated lever, h^4 , mounted upon the hinge bar, in combination with the link h^3 , connected with the main frame, and of such length as to normally draw the said lever into a locking position, in combination with a lifting apparatus controlled by the attendant, and adapted to begin the upward movement of the cutting apparatus, and thus unlock the said lever, substantially as described. 17th. The spring actuated lever h^4 , mounted upon the hinge bar, in combination with the link h^3 , connected to the main frame, and of such length as to normally draw the said lever into a locking position, the said lever connected to the link by slotted or other suitable connections which permit movement of one part relative to the other, whereby a slight rising and falling of the said spring actuated lever, caused by the cutting apparatus in floating over the ground, is permitted without unlocking the said lever, substantially as described. 18th. The spring actuated lever h^4 , adapted to be locked into an inactive position, the link, h^3 , connecting the said lever to the main frame, the said link adjustable in its length, whereby the height at which the spring actuated lever may be unlocked is made adjustable at will, substantially as described. 19th. In a mowing machine, the spring lifting devices adapted to be locked by the falling movement of the cutting apparatus, and be unlocked by the upward movement of the cutting apparatus. 20th. In a mowing machine, a spring actuated lifting device adapted to be brought to an inoperative position by the downward movement of the cutting apparatus, and brought to an active position by the upward movement of the cutting apparatus, suitable mechanism connecting the said spring lifting devices with the main frame, adjustable in its length, whereby the height at which the locking

and unlocking of the said mechanism to this place is adjustable at will, substantially as described. 21st. The bar A^5 , the collar h^2 , provided with an anti-friction roller h^3 , and suitably connected to the main frame, whereby the stress of the spring is adapted to lift the cutting apparatus, substantially as described. 22nd. The combination of the knife head K , provided with the section of a hollow sphere k , the pitman provided with a bearing fitted to the concave side of said section of a sphere, and with a concave portion adapted to fit upon the convex portion of said section of a sphere, substantially as described. 23rd. The knife head K , provided with a section of a hollow sphere k , the pitman provided with the part k^1 , adapted to fit into the concave portion of said hollow sphere, and a concave portion adapted to fit upon the convex part of the said hollow sphere said two parts of the pitman adjustable in the distance asunder whereby lost motion may be taken up, substantially as described. 24th. The knife head provided with the section of a hollow sphere as k , the pitman having a concave recess adapted to fit upon the convex portion of said section of a hollow sphere, the yoke piece k^2 , adapted to form a bearing in the concave portion of the said hollow sphere, and provided with tangs and screw nuts, substantially as described. 25th. The combination with the main frame and cutting apparatus of the spring lifting device, and the foot controlled lifting device, substantially as described. 26th. In a mowing machine, the combination of the main frame, the cutting apparatus, the spring lifting device, the foot controlled lifting lever and the hand lifting lever, all combined substantially as described. 27th. The coupling frame having the parts A^3 and A^4 , the hinge piece A^7 , pivoted to the shoe, and adapted to rock on the bar A^6 , of the said coupling frame, and having a recess as that formed between the end of the horizontal sleeve M^2 , and the projection m^2 , all combined substantially as described. 28th. The coupling frame, consisting of the hinge bar A^6 , and the push bar A^5 , the coupling piece A^7 , pivoted to the shoe, and adapted to rock on the bar A^6 , the gag lever pivoted to the said coupling piece and adapted to engage the shoe to produce a gagging effect, and to be rocked upon its axis by contact with the bar A^6 , all substantially as described. 29th. The bars A^3 and A^4 , the hinge piece A^7 , pivoted on the bar A^6 , and provided with the tilting arm, the lever Q , pivoted thereon and adapted to engage the shoe and produce a gagging effect, its outer end adapted to be operated by coming in contact with the bar A^6 , all combined, substantially as described. 30th. The bar A^6 , and the hinge piece A^7 , pivoted thereon and pivoted to the shoe, the lever Q , pivoted to the said hinge piece and adapted to be rocked upon its axis by the action of the lifting chain, the shoe being provided with a depression l^1 , whereby the bar may be locked in an upright position, all combined substantially as described. 31st. The bar A^6 , the hinge piece pivoted thereon and provided with the tilting arm Q , the lever Q , pivoted thereon and adapted to engage the shoe and produce a gagging effect, its upper extremity adapted to engage and be operated by the bar A^6 , the lifting chain connected to the lifting arm and passing beneath the bar A^6 , and thence upward to the lifting lever and the bar A^6 , all combined substantially as described. 32nd. The bar A^6 , the coupling piece A^7 , pivoted thereon and to the shoe, the shoe being provided with the surface l^2 , the lever Q , pivoted to the said coupling piece and adapted to engage the said surface and to engage the bar A^6 , and means whereby the said lever Q is locked to prevent movement of the said coupling piece from rocking on the bar A^6 , all combined substantially as described.

No. 37,546. Holder for Nipples. (*Porte-tétine.*)

Henry B. Spencer and Arthur Michael Murphy, Catskill, New York, U.S.A., 6th October, 1891; 5 years.

Claim.—1st. A nipple holder comprising a hollow body threaded internally at one end, a head held to move within the body and provided with cutting edges, and means for moving the head longitudinally, substantially as described. 2nd. A nipple holder comprising a hollow body having an interior screw thread at one end, a plug secured in the body and provided with a squared hole, a tapering head having cutting edges and provided with a shank which moves in the plug, and means for moving the shank and head, substantially as described. 3rd. A nipple holder comprising a hollow body having one end internally screw threaded and having a plug therein adjacent to the threaded portion, the plug having a squared hole extending through it, a tapering head with cutting edges mounted in the threaded portion of the body and provided with a shank extending through the hole in the plug, and a screw mechanism for moving the shank and head, substantially as described. 4th. In a nipple holder, the combination, with a hollow body having a threaded end and a movable head and shank mounted in the body, of a screw spindle loosely connected with the shank and extending outward through the end of the body, substantially as described. 5th. In a nipple holder, the combination, with a body having one end threaded and a movable head and shank mounted in the body, the shank having a socket in its inner end arranged to enter the socket of the shank and held loosely therein and having its opposite end screw threaded and mounted in a threaded plug, said threaded end extending outward through the body, substantially as described.

No. 37,547. Sheet Metal Blank for Knobs.

(*Ebauche de métal en feuille pour boutons.*)

Edmund Converse, (assignee of William Alfred Turner), both of Worcester, U.S.A., 6th October, 1891; 5 years.

Claim.—The herein described blank for the base section of a sheet metal knob, the same being of greater length than width and bounded by convex curves at the ends of said greater dimension and concave curves at the ends of said lesser dimension, substantially as and for the purpose described.

No. 37,548. Bill File. (*Serre-papier.*)

Lawrence Merk, Rochester, and Frank A. Cleland, New York, both in the State of New York, U.S.A., 6th October, 1891; 5 years.

Claim.—1st. The combination, with the base or support and the arched transfer wire, of the removable receiving wire upon which the papers are directly impaled, having the laterally extending lower portion and a detachable catch on the base for securing the lower portion of said wire to the base, whereby the receiving wire and contained papers may be bodily removed from the base, substantially as described. 2nd. The combination, with the base or support and the arched transfer wires, of the two wires upon which the papers are received and held, connected by a laterally extending portion, and a detachable catch on the base co-operating with said connecting portion and securing the wires to the base, whereby the receiving wires and contained papers can be bodily removed from the base, substantially as described. 3rd. The combination, with the base and transferring wires, of the receiving wire having the two upwardly extended arms on which the papers are impaled and the connecting portion and the detachable catch co-operating with the connecting portion of said wire and holding it in position on the base, substantially as described. 4th. The combination, with the base, the pivoted transfer wires mounted thereon, the springs for opening them and the receiving wires, of a perforating device located between the receiving and transferring wires, a lever for causing the operation of the perforating device and a catch normally holding the transfer wires closed operated by the lever, substantially as described. 5th. The combination, with the base having the punch projections thereon, the perforated plates co-operating therewith and the springs of the pivoted transfer wires, the springs for opening them and the spring catch for locking the wires closed released by the operation of the lever, substantially as described. 6th. The combination, with the receiving wire upon which the papers are directly impaled, having a lower portion projecting at an angle therefrom, a base having a socket to receive said lower portion and a catch or clamp for connecting said receiving wire in the socket, of a transfer wire with which the receiving wire co-operates, substantially as described. 7th. The combination, with the base having the perforating device thereon, the pivoted transfer wires, each having the projection and the springs for moving them, of the lever for actuating the perforating device having the projection for co-operating with said projections and holding the transfer wires closed, and a spring for holding said lever in position with the transfer wires locked, substantially as described. 8th. The combination, with the base I , having the upwardly extending lugs, the arched transfer wires pivoted thereto and the receiving wires, of the casing having a cover pivoted near the level of the pivotal point of the transfer wires whereby the contents of the file may be turned over when the casing is opened, substantially as described.

No. 37,549. Fish Hook. (*Hameçon.*)

Albert Gallatin Mack, Rochester, New York, and Charles E. Felton, Chicago, Illinois, both in U.S.A., 6th October, 1891; 5 years.

Claim.—1st. A fish hook device having a pair of hooks rigidly united at their shank portions to extend in opposite directions and normally overlap each other at their curved hook portions, the fastening securing the hooks to maintain yieldingly the said normal relative positions of their hook portions and tend by their elasticity to return thereto when separated, substantially as described. 2nd. A fish hook device comprising hooks rigidly united in pairs at their shank portions to extend in opposite directions and normally overlap and mutually shield each other at their curved hook portions, the fastening adapting the hooks to maintain yieldingly the said normal relative positions of their hook portions and tend by their elasticity to return thereto when separated, and the said pairs being disposed at suitable angles one within another, substantially as described.

No. 37,550. Fish Hook. (*Hameçon.*)

Albert Gallatin Mack, Rochester, New York, and Charles E. Felton, Chicago, Illinois, both in U.S.A., 6th October, 1891; 5 years.

Claim.—1st. In combination, a fish hook and a springy protector B , rigidly connected at one end with the shank of the hook and expanded at its opposite end and normally extending at the expanded end to or about to the point of the hook slightly forward thereof and disengaged, in its normal protecting position, from said point, substantially as described. 2nd. In combination, a cluster of fish hooks united at their shanks and having their points extending toward a common center, and a protector B , having an expanded end p , shielding the points of the hooks in the cluster, substantially as and for the purpose set forth. 3rd. In combination, a cluster formed with fish hooks united at their shanks to extend in opposite directions and overlap each other at their curved and barbed portions and each there bent to project the point of the hook outward, and protectors B , secured to the hooks and provided with expanded extremities p , shielding the hook points, substantially as and for the purpose set forth.

No. 37,551. Bee Hive. (*Ruche.*)

Moses N. Ward, Butler, Indiana, U.S.A., and David Fisher, of the Township of Colborne, Ontario, Canada, 6th October, 1891; 5 years.

Claim.—The combination, in a double bee hive, of the elevated comb chambers having a floor provided with downward central openings, the inclined ways leading to said openings, the flaps or shutters with bottom entrance openings, the slides provided at their outer edges with the upwardly projecting lips or plates and the surplus comb chambers, all substantially as described and for the purposes hereinbefore set forth.

No. 37,552. Sewing Machine.*(Machine à coudre.)*

Felix Doucet, Montreal, Quebec, Canada, 7th October, 1891; 5 years.

Claim.—1st. The combination, of a rotary ring or case adapted to contain the lower thread and provided with hooks projecting outside of its periphery to engage the needle loop, a spreader for the needle loop, idle rolls supported in position to bear on and support the ring, and means for rotating the ring, as set forth. 2nd. The combination, of a rotary ring or case adapted to contain the lower thread, and provided with hooks projecting outside of its periphery to engage the needle loop, a spreader for the needle loop, means for rotating said ring, idle rolls bearing on the periphery of the ring, and a movable support for one or more of said rolls whereby the ring is adapted to be removed from the machine, as set forth. 3rd. The combination, of a rotary ring provided with hooks projecting outside of its periphery to engage the needle loop, a spreader for the needle loop, a shuttle removably inserted in said ring, idle rolls supported in position to bear on and support the ring, as set forth. 4th. The combination, of a non-rotating shuttle, a rotary ring surrounding said shuttle and provided with hooks projecting outside of its periphery to engage the needle loop, the positively rotated driving wheel engaged with the periphery of the ring, and idle rolls bearing on other portions of the periphery of the ring. 5th. The combination with a back gage and suitable stitch forming devices, of the feed dog formed to enter the channel in a sole, and provided with a penetrating spur and with a shoulder to limit the penetration of said spur into the between substance, and mechanism for operating said dog, as set forth. 6th. The combination with a back gage and lock stitch forming mechanism, substantially as described, of a feed dog, a hub or collar elevated above the feed dog and secured to the shank of said dog and mechanism for oscillating said hub and for moving it laterally on a support or bearing, as set forth. 7th. The combination with a back gage and lock stitch forming mechanism substantially as described, of a feed dog, a hub or collar elevated above the feed dog and secured to the shank of said dog, the toothed arm π 3, on said hub, the reciprocating rack engaged with said arm, and the oscillating lever ϵ , engaged with the hub, as set forth. 8th. The combination with a back gage and a feeding device or dog adapted to enter a channeled sole, of lock stitch forming mechanism including a rotary ring or case adapted to contain the lower thread and arranged with its axis substantially parallel with the feed movement, said ring or case being located back of the feeding device, as set forth. 9th. The combination with stitch forming mechanism, of a take up mechanism consisting of two parallel slides each having a thread engaging pulley, and mechanism for simultaneously reciprocating said slides in opposite directions, as set forth. 10th. The combination with stitch forming mechanism of the take up slides having thread engaging pulleys, and provided with rack teeth on their adjacent edges, the pinion located between said slides and engaged with the teeth thereof, and means for reciprocating one of said slides, as set forth.

No. 37,553. Saw Set. (Tourne-gauche.)

David E. Thompson, Vasey, Ontario, Canada, 7th October, 1891; 5 years.

Claim.—1st. In a saw set, the rod having an inclining face formed in each of the sides and inclining to correspond to the set to be imparted the saw tooth, substantially as shown and specified. 2nd. In a saw set, the combination, of the rod having an inclining face formed in each of its sides as specified, with the die tightly fitting said rod and having a notch in each side around the rod to direct the saw tooth against said inclining face on said rod, and within the die when in position, substantially as shown and specified.

No. 37,554. Car Mover. (Levier de mise en marche.)

Robert Waln Drinker, Kilbourn City, Wisconsin, U.S.A., 7th October, 1891; 5 years.

Claim.—1st. In a car mover, the combination of an upper and lower bar placed end to end in a right line in the same plane, and a rectilinear sleeve or tube having an opening in one side near the middle and provided with strong lugs or ears, a rack securely bolted and fastened to the upper side of said upper bar near its lower end, and the upper end of said lower bar being securely bolted into said sleeve or tube, the cogged segment secured between said lugs or ears by a bolt, the cogs upon the periphery of said segment being adapted to engage the rack upon said upper bar within said sleeve or tube, the lever securely bolted to said segment and by means of which said segment and said bars are actuated, the upper and lower joints or swivels, the hinge on the under side of the connecting jaws formed by the wrist, lugs, and bolt, the bifurcated foot, and the steel blades upon the inner edges of said foot, as and for the purposes set forth and described. 2nd. In a car mover, the combination of two rectilinear bars placed end to end in the same plane, and a sleeve or tube, a rack secured to the upper bar near its lower end, and the upper end of the lower bar being securely bolted into said sleeve or tube, said bars operating against each other longitudinally in the same line, said sleeve or tube having an opening on one side near the middle provided with strong lugs or ears by a securing bolt, the cogs upon the periphery of said segment being adapted to engage the rack on said upper bar within said sleeve or tube, the lever securely bolted to said segment and by means of which said segment is operated, the shoe provided with a socket embracing the lower end of said lower bar, the bifurcated foot having the spur or spindle securely fastened into said socket and forming a joint or swivel, the steel blades upon the inner edges of said bifurcated foot, the shoe provided with a socket embracing the upper end of said upper bar, the wrist provided with a spur or spindle and having a square shoulder resting upon the upper shoe, said spur or spindle being securely fastened into said socket and forming a swivel, the lugs upon the under side of the connecting jaws, said lugs and said wrist being connected by a securing bolt and forming a hinge, and the securing jaws actuated by the screw and wheel, as and for the purpose set forth and described.

3rd. In a car mover, the combination of the two rectilinear bars B^1 , and B^2 , placed end to end, and the sleeve or tube A, said bars operating longitudinally against each other through said sleeve in the same plane, the upper end of said lower bar B^1 , being bolted and securely fastened into the lower end of said sleeve or tube, and the lower end of said bar B^1 , being embraced and securely bolted into the shoe C, having a socket adapted to receive a spur or spindle from the shank of the bifurcated foot C^1 , having the square shoulder ϵ , said shoe resting upon said shoulder ϵ , and said socket and spur or spindle forming the swivel ϵ^1 , said bifurcated foot C^1 , being provided with the steel blades C^2 , the lugs B, on the side of an opening in the side of said sleeve or tube, said opening adapted to receive the cogged segment D, the lever D^1 , the rack d , the belt D^2 , the hinge B^3 , the wrist C^3 , the spur ϵ^2 , the shoes C, and C^2 , the joint or swivels ϵ^1 , and ϵ^2 , the connecting jaws E, the screw E^1 , and the wheel E^2 , as and for the purposes substantially as set forth and described.

No. 37,555. Car Replacer. (Appareil pour remettre les chars sur la voie.)

Elisha Newcomb and Erwin B. Newcomb, both of Cumberland Mills, Maine, U.S.A., 7th October, 1891; 5 years.

Claim.—1st. The combination of the guide piece with the lifting rail, having one end pivotally connected with said guide piece at the middle of its length, the said lifting rail being movable on its pivot to a position adjacent to either end of said guide piece, and the said guide piece projecting above the upper surface of the lifting rail, substantially as and for the purpose described. 2nd. The combination of the lifting rail adapted to be supported on the sleepers at the outside of the main rail and forming an inclined plane, which receives the tread of the wheel and raises the said wheel until its flange is brought above the top of the main rail, with the frog adapted to be supported between the rails, said frog comprising a guide piece that acts on the inner face of the wheel, and a lifting rail connected with the said guide piece, the said guide extending higher than the said lifting rail, whereby it may act upon an unflanged wheel, substantially as described. 3rd. The guide piece provided with a lateral projection at its middle point and one near each end adapted to engage with the main rail, the middle projection extending farther than the end ones, combined with a lifting rail connected with the middle projection of the said guide piece and adapted to engage with one of the end projections thereof between it and the main rail, while the other end projection is engaged with the main rail, substantially as described. 4th. The guide piece provided with a lateral projection at its middle point and one near each end adapted to engage with the main rail, combined with a lifting rail connected with the middle projection of said guide piece and adapted to engage with one of the end projections thereof, and a fastening by which said lifting rail is connected with said end projection of the guide piece, substantially as described. 5th. The guide piece and lifting rail pivotally connected at one end with the middle of said guide piece, said guide piece having transverse openings, combined with a brace having a projection that passes through one of the said openings of the guide piece and a shoulder that engages said guide piece at the side of the openings, substantially as and for the purpose described.

No. 37,556. Mill for Grinding and Amalgamating Gold and Silver Ores. (Moulin pour broyer et amalgamer les minerais d'or et d'argent.)

George Fraser, Auckland, New Zealand, 7th October, 1891; 5 years.

Claim.—1st. In a grinding and amalgamating mill, the combination with a fixed casing having an annular grinding surface, of a revolving muller mounted to turn in the said casing and supporting loosely grinding rollers grinding one against the other, and all on the said grinding surface of the receptacle, substantially as shown and described. 2nd. In a grinding and amalgamating mill, the combination with a receptacle containing a fixed grinding ring, of a revolvable muller mounted to revolve within the said casing and provided with an annular ring, and a series of rollers held loosely on the ring of the said muller, grinding one against the other, and all on the said rings of the muller and receptacle, substantially as shown and described. 3rd. In a grinding and amalgamating mill, the combination with a receptacle containing a fixed grinding ring, of a revolvable muller mounted to revolve with the said casing and provided with an annular ring, a series of rollers held loosely on the ring of the said muller, grinding one against the other, and all on the said rings of the muller and receptacle, and means for continually removing the tailings from the said receptacle, and charging the latter with quicksilver, substantially as shown and described. 4th. In a grinding and amalgamating mill, the combination with a fixed casing and a revolvable muller, of a silent overflow, substantially as described, and arranged in the said casing, as set forth. 5th. In a grinding and amalgamating mill, a silent overflow, comprising an inner and outer shell, a hopper into which discharges the said outer shell, and an outlet pipe leading from the said hopper, substantially as shown and described. 6th. In a grinding and amalgamating mill, a silent overflow, comprising an inner and outer shell, a hopper into which discharges the said outer shell, an outlet pipe leading from the said hopper, and an inclined bottom arranged in the said hopper and leading with its lower end to the said outlet pipe, substantially as shown and described. 7th. In a grinding and amalgamating mill, a silent overflow, comprising an inner and outer shell, a hopper into which discharges the said outer shell, an outlet pipe leading from the said hopper, and a movable regulator held in the discharge of the said two shells, substantially as shown and described.

No. 37,557. Envelope for Letters. (Enveloppe pour lettres.)

William Crichton, Toronto, Ontario, Canada, 7th October, 1891; 5 years.

Claim.—1st. An envelope consisting of a body provided with the usual lapels, the edges of one of said lapels meeting and forming a right angle, substantially as described. 2nd. An envelope consisting of a rectangular body and the usual lapels, the edges of the bottom lapel forming a right angle, substantially as described. 3rd. An envelope consisting of a body and the usual lapels, the bottom lapels when folded reaching to the top edge of the rear side of the envelope, substantially as described. 4th. An envelope consisting of a body and the usual lapels, the edges of the bottom lapel forming a right angle and reaching to the top edge of the rear side of the envelope, when said envelope is folded, substantially as described. 5th. An envelope consisting of a rectangular shaped body, two side lapels, the lower edges of which form with the lower folding crease of said top edge an angle of about one hundred and thirty-five degrees, the bottom lapels, the edges of which form with said folding crease, each an angle of forty-five degrees, and forming at their meeting point an angle of ninety degrees, and a top lapel, the edges of which meeting with the upper folding crease, which forms an angle of thirty degrees, and forming an angle at their meeting point of one hundred and twenty degrees, substantially as described. 6th. The herein described method of cutting envelope blanks, which consists of so forming the edges of one of the lapels that they will form at their meeting point an angle of ninety degrees, substantially as described.

No. 37,558. Chain Attachment.

(*Attache pour chaines.*)

The Bridgeport Chain Company, assignees of Richard Alvin Breul, all of Bridgeport, Connecticut, U. S. A., 7th October, 1891; 5 years.

Claim.—The herein described attachment for chains consisting of a cross-bar made from a single piece of wire, the end portions of the wire doubled back upon the central or body portion of the wire, the length of such doubled portions being greater than one half the length of the wire, and so that the ends of the said doubled portions project beyond each other, the said end portions returned and each bent to form an eye and adapted to receive a link of the chain, substantially as described.

No. 37,559. Safety Switch for Railways.

(*Aiguille de sûreté pour chemins de fer.*)

Henry N. Hopkins, Taunton, and Emery H. Bryant, Boston, both in Massachusetts, U.S.A., 7th October, 1891; 5 years.

Claim.—1st. The combination with the switch-stand, the switch-operating rod and target shaft, of an engaging device carried by the shaft, a yielding engaging device connected with the stand, and a lever and connections to relieve the target shaft from the strain of the yielding engaging device. 2nd. The combination with a switch rod and a switch-stand provided with a yielding cross-bar, of a vertically locking bar adapted to rest in the same horizontal plane with the yielding cross-bar when the parts are in a locked position, and means for elevating the said locking bar above the yielding cross-bar, substantially as and for the purpose set forth. 3rd. The combination with a switch-rod and a switch-stand provided with a yielding cross-bar, of a vertical spindle journaled in the frame, a movable locking-bar keyed to the spindle, a handle for elevating the locking-bar, and means for locking the handle in a depressed position, all of the above parts combined as described. 4th. The combination with a switch-rod and a switch provided with a yielding cross-bar adjustably secured thereto, of a vertical spindle journaled therein, a movable locking-bar keyed to the spindle, and provided with a roller adapted to bear against the cross-bar, and a handle for elevating the locking-bar above the yielding cross-bar, substantially as and for the purpose set forth. 5th. The combination with a switch-bar, and a switch-stand provided with a cross-bar, springs for holding the cross-bar in place, and nuts for regulating the tension of said springs, of a spindle mounted in the stand, a collar secured to the spindle, a locking-bar made vertically adjustable on the spindle, a handle pivoted to said collar, a link connecting the handle, a locking-bar, and provided with a hasp, and a lock for holding the handle on the link, said handle being adapted to the hasp, substantially as set forth. 6th. The combination with a switch-stand, its operating rod and target-shaft, of a yielding locking plate, an engaging device carried by the shaft and vertically movable to engage and disengage said locking plate, and means for operating the said engaging device with reference to the locking plate, substantially as set forth. 7th. The combination with a switch-stand, a switch operating rod and target-shaft, of an engaging device carried by the shaft, a spring actuated engaging device upon the stand and aiding to complete the movement of the switch, and means to engage and disengage said devices. 8th. The combination with a moving rod connected with the switch rails, of a spindle or crank-shaft adapted to operate said rod, a yielding locking plate checking the rotation of the spindle, and an engaging part rotating with the spindle and thrown out of connection with the yielding locking plate by the vertically moving lever, substantially as set forth. 9th. The combination of the standard of fixed parts, the spindle and switch operating rod with spring actuated engaging parts, one of which is carried by the spindle and the other by the stand so formed that the spring shall aid in the completion of the movement of the switch, and means whereby said switch or its lever may be relieved of the resistance offered by the spring engaging devices, substantially as set forth. 10th. The combination of the standard, the spindle and switch operating rod, with engaging devices which are brought together by a spring, and one of which is carried by the spindle and the other by the stand, and a vertically swinging lever adapted to disengage the engaging devices and permit the spindle to be freely revolved, substantially as set forth. 11th. The combination with a switch-stand, a switch operating rod, and a target-shaft, of a spring actuated engaging device to lock the switch in either of its positions and to complete the movement of the switch. 12th. The combination with a switch-stand, a target-shaft, and a switch-rod, of an arm extending laterally from the target-

shaft, and a yielding device arranged to engage the outer end of said arm on the target-shaft, and complete the movement of the target-shaft in either direction, substantially as set forth. 13th. The combination with a switch-stand, a rotary crank-shaft journaled therein, and a switch-rod connected with the crank of said shaft, of a spring actuated device for locking the switch in either of its positions and for completing the movement of the switch, substantially as set forth. 14th. The combination with a switch-stand, a switch operating rod, and a target-shaft, of a horizontally yielding engaging device to complete the movement of the switch in either direction, and a lever for operating and locking the switch. 15th. The combination with a switch stand, a switch-rod, and a target-shaft provided with a laterally projecting arm, of an engaging device for completing the movement of the switch, and a lever for raising and lowering the arm on the target-shaft, substantially as set forth. 16th. The combination with a switch stand, the switch operating rod, and the target-shaft, of an engaging device carried by the shaft, and a sliding spring actuated engaging device connected to the stand and moving transversely to and from the shaft, as and for the purpose set forth. 17th. The combination with the switch-stand, the switch operating rod, and the target-shaft having a crank, of an engaging device carried by the shaft, a yielding engaging device carried by the stand, and a lever and connections to engage and disengage said devices and to turn the shaft. 18th. The combination with the switch stand, the switch operating rod, the crank-shaft, an engaging device checking the rotation of the shaft, of an engaging device rotating with the shaft, said devices being disengaged by movement of one of them independently of the rotary movement of the shaft, as set forth. 19th. In a switch stand, the combination with the target-shaft, an engaging device carried by the shaft, and a yielding engaging device connected with the stand, of means for engaging and disengaging said devices, and means for varying the relative adjustment of said engaging devices, and thereby adjusting the throw of switch-rail, substantially as set forth.

No. 37,560. Pedal Piano. (*Pedal de piano.*)

Lawrence Alonzo Subers, Phoebus, Virginia, and Samuel Britton Coughlin, Philadelphia, Pennsylvania, both in U.S.A., 8th October, 1891; 5 years.

Claim.—1st. A pedal piano having in combination strings inclined from one lower corner of the instrument to the opposite upper corner, a hammer action concentrated at one side of the instrument and pedals having concentrating devices whereby each pedal is caused to act upon its proper element of the hammer action, substantially as specified. 2nd. A pedal piano in which are combined the pedals, the hammer action and a string scale having the treble notes at the left hand side and the bass notes at the right hand side of an observer facing the instrument, substantially as specified. 3rd. A pedal piano having a casing inclosing the string scale, its frame and the hammer action, and located at the rear of the performer's seat, a pedal frame and pedals located in advance of said seat, substantially as specified. 4th. The combination in a pedal piano, of the frame and strings inclined from one lower corner of the instrument to the opposite upper corner, a hammer action concentrated at one side of the instrument, the pedals and a bar serving to transmit the movement of each pedal to its proper element of the hammer action, said bars being angularly disposed in respect to the pedals, substantially as specified. 5th. A pedal piano, comprising a casing containing the string scale frame and hammer action, the pedals in advance of said casing, and a performer's stool secured to the front of the casing, substantially as specified. 6th. The combination of the pedal piano with a frame secured to and projecting forward beyond the pedal frame and having pins for acting upon the damper and hammer pedals of an ordinary instrument, in front of which the pedal piano is placed, substantially as specified. 7th. The within described radiating pedal scale for pianos and organs, said scale having the tops of the pedals arranged on a curve rising from the center toward each end of the series, substantially as specified. 8th. The radiating pedal scale having tongues of graduated length upon the pedals representing the sharps of the scale, the tongues being shortest at the centre of the series and gradually increasing in length toward each end of the series, substantially as specified. 9th. The combination of the frame with the string scale having all of the strings from the treble to bass running diagonally in the same direction from bottom to top of the frame, substantially as specified.

No. 37,561. Electric Elevator.

(*Elevateur électrique.*)

Otis Brothers & Company, New York, (assignees of Norton P. Otis and Rudolph C. Smith, both of Yonkers), all in New York, U.S.A., 8th October, 1891; 5 years.

Claim.—1st. The combination with the electro-motor of an elevator, of a current controlling device, constructed to both reverse and vary the current, and provided with a switch, means for automatically turning the switch to its normal position with the current cut-off, and means for operating said switch from the cage to carry it from its normal position in either direction, substantially as set forth. 2nd. The combination in an elevating apparatus of an electro-motor, controller provided with a switch, a shifter connected with said controller and with the cage to be operated therefrom, automatic means for carrying the shifter to one position, a detent for holding the shifter in another position, and a governor connected with said detent and driven from a moving part of the apparatus, substantially as set forth. 3rd. The combination with the cage and electro-motor of an elevator, of a controller provided with a switch, a shifter connected to be operated from the cage and also connected to said switch, means for carrying the controller to one position, a detent engaging with bearings upon the controller to hold it in another position in either direction, a governor driven from the armature and connected with said detent, the parts being arranged to release the shifter when the speed of the armature is reduced, substantially as set forth. 4th. The combination with the shifter

connected to be operated from the cage, and with the switch, of an alarm upon the cage, and a circuit breaker carried by the shifter to complete the circuit including the alarm when the position of the shifter is changed from one position to the other, substantially as set forth. 5th. The combination of the switch controlling the current to the motor of an elevator, of a circuit indicator, and a circuit breaker connected to move with said switch and in circuit with said indicator, substantially as described. 6th. The combination with the cage and electro-motor, of a resistance controlling the current to the motor, the switch or cut out of said resistance, a shifter connected to be operated from the cage and with said switch, automatic means for carrying the shifter to its mid-position, and a detent and governor controlling the same for holding the shifter in its extreme positions, substantially as set forth. 7th. The combination with the motor and cage of an elevator, of a regulating switch controlling the circuit to the motor through a series of resistances, a detent controlling the switch, and an electrical governor for the detent arranged in the main circuit and connected with the detent to release the switch when the main current becomes excessive to allow the switch to return to its normal position, substantially as set forth. 8th. The combination with an electro-motor, a switch controlling the current through the same and means for moving the switch to one position, a detent for holding it at the limit of its movement in either direction, of a timing device for releasing the detent, substantially as set forth. 9th. The combination with the switch and with the shifting devices connected with the elevator cage, of a detent for holding the switch constructed to yield under the action of the shifting device, substantially as described. 10th. The combination with an elevator cage and electro-motor connected to operate the cage, of a switch controlling the circuits to operate the motor in either direction, devices for carrying the switch to its normal position, a detent for locking the switch in its operating position, and automatic means for operating the detent, substantially as set forth. 11th. The combination with the cage and shifter bar and connections for moving it from the cage, of a switch and a lever connected with said bar and having a rack engaging a pinion on the switch shaft, substantially as set forth. 12th. The combination with the cage, motor, switch and yielding detent for holding the switch in one position, and a spring for shifting the switch, substantially as set forth.

No. 37,562. Trace Fastener for Whiffletrees. *(Embout de palonnier.)*

John Bogert Gundry and Charles Elliot, both of Denton, Michigan, U.S.A., 8th October, 1891; 5 years.

Claim.—A trace fastener, consisting of a yoke-shaped frame, embracing and pivoted to a whiffletree or draft bar, and formed with an elastic arm having a hook at its free extremity to enter into engagement with an eye or socket in the whiffletree or draft bar, substantially as described.

No. 37,563. Boiler Stay.

(Entretoise pour chaudières.)

Thomas Barrow and John B. Roach, both of Chester, Pennsylvania, U.S.A., 8th October, 1891; 5 years.

Claim.—1st. A boiler stay or brace, having one end provided with a tapering screw thread and the other end also provided with a screw thread and an intermediate smooth portion, substantially as and for the purposes hereinbefore set forth. 2nd. The combination with a boiler and its shell, of a stay tapered and screw threaded at intervals throughout its entire length, substantially as and for the purposes hereinbefore set forth. 3rd. The combination with a boiler provided with holes tapering from the inside and screw threaded, and its shell, of a stay tapered and having alternate smooth and screw threaded portions, whereby the stay is adapted to be inserted from the inside of the boiler, substantially as and for the purposes hereinbefore set forth.

No. 37,564. Wrench. *(Clé à écrou.)*

Oscar L. Dodge and George T. Dodge, both of Inwood, New York, U.S.A., 9th October, 1891; 5 years.

Claim.—In a wrench of the class described, the combination with the stock 1, terminating in the handle 2, and head 3, of the jaw 4, having the curved shank 5, terminating at its free end in a lug 6, and at its rear end in the toothed or notched head 7, pivoted at 8, to the head 3, the pawl 11, pivoted between its ends at 10, to the head 3, and the spring 12, secured to the stock 1, and serving to press the pawl into engagement with the teeth or notches, substantially as specified.

No. 37,565. Splice for Railway Rails.

(Enture pour rails de chemin de fer.)

David Cary Winn, Sycamore, Illinois, U.S.A., 9th October, 1891; 5 years.

Claim.—1st. A rail joint comprising a single sheet of drawn metal bent up to present the interior configuration of a rail base and web, having its bottom curved upward and having its cheeks flaring upward and provided with the longitudinal groove on its under side, substantially as described. 2nd. The combination, with the rails A, of the rail joint B, comprising a single sheet of drawn metal bent up to present the interior configuration of a rail base and web, and having its cheeks normally flaring and its bottom curved upward embracing the meeting ends of the rails at the web and base portion thereof and impinging against the under side of the head thereof, bolts passing through the cheeks and web, nuts on said bolts, and a nut lock comprising the metallic plate C, forked at one end to embrace a bolt under the nut, bent near its middle part to produce the shoulder shown and having its opposite square end impinging against the other nut, substantially as described.

No. 37,566. Pedal Attachment for Velocipedes. *(Attache pour pedales de velocipedes.)*

William Wheeler, Terrell, Texas, U.S.A., 10th October, 1891; 5 years.

Claim.—1st. The herein described safety attachment for the pedals of cycles, consisting of a bar adapted to be applied to the pedals and having its rear end extended beyond the same to form a heel support and its front end provided with an adjustable counterbalancing weight, substantially as specified. 2nd. The herein described safety attachment for the pedals of cycles, consisting of a bar adapted to be secured to the pedal, said bar having its front end terminating in a threaded shank and at its rear end bent to form a heel support, and a board and threaded weight mounted upon the shank and provided with a set screw for impinging thereon, substantially as specified. 3rd. The herein described safety attachment for the pedals of cycles, consisting of a bar adapted to be connected to the pedal and having its rear end curved to form a heel support, and a blade secured to the bent portion of the bar and at its rear end deflected from the same, whereby it is adapted to enter a recess formed in the front edge of the heel of a shoe, substantially as specified. 4th. The herein described safety attachment for the pedals of cycles, consisting of a bar adapted to be secured to the pedal and terminating in the rear of the pedal in a curved heel support, having a stud adapted to enter an opening formed in the heel plate of a shoe, and a rearwardly disposed blade secured to the bent portion of the bar, deflected at its rear end from said bent portion and terminating short of the stud, whereby it is adapted to engage an opening formed in the front edge of the heel of a shoe above the heel plate thereof, substantially as specified. 5th. The safety attachment for the pedals of cycles, consisting of a bar adapted to be connected to the pedal and extending rearwardly beyond the same to form a heel supporting terminal provided with an opening, a stud mounted in rear of the same, a spring blade connected to the terminal overlapping the perforation and deflected from the terminal, said stud and blade being adapted to engage the opening and the front edge respectively of a heel plate secured to the shoe, a shouldered latch located below the perforation of the terminal and a spring for normally withdrawing the latch, substantially as specified. 6th. The safety attachment for the pedals of cycles, consisting of a bar adapted to be secured to the pedal and bent rearwardly in rear of the same to form a curved heel supporting terminal having a perforation, a stud located in rear of the perforation, a spring blade secured to the terminal overlapping the perforation and terminating short of the stud, a curved spring secured to the rear end of the terminal and bent forwardly under the perforation, a stop for limiting the downward movement of the spring, and a shouldered latch mounted upon the free end of the spring and adapted to be passed through the perforation and wedged between the edge of the same and the flat blade, the stud and blade being adapted to enter a transverse slot formed in a heel plate and a recess above the heel plate formed in the heel respectively, substantially as specified. 7th. The safety attachment for the pedals of cycles, consisting of a bar adapted to be secured to the pedal and extended to form a rear curved terminal having a perforation, a headed stud mounted on the terminal in rear of the perforation and adapted to engage with a slot in the heel plate secured to the shoe, a spring blade secured to the terminal and terminating short of the stud and adapted to engage in a recess formed in a heel above the heel plate and devices for wedging between the rear end of the spring blade and terminal and elevating said terminal temporarily, substantially as specified. 8th. The safety attachment for the pedals of cycles, consisting of a bar adapted to be connected with the pedal rearwardly curved to form a heel support, having a perforation and in rear of the same provided with a stud, a spring blade secured to the terminal terminating above the perforation and short of the stud, a curved spring secured to the rear end of the terminal and forwardly bent under the perforation, an inverted L-shaped stop secured to the terminal and terminating under the end of the spring, a shouldered latch mounted on the end of the spring and adapted to pass through the perforation in the terminal, and a pair of guides located at the opposite sides of the spring and loosely embracing the terminals, substantially as specified. 9th. The combination, with the pedal of a cycle, comprising the opposite rubber rolls and the intermediate spindle of the herein described attachment, consisting of a bar having the perforations and extended in the rear to form a heel support, means for locking the support to the heel of a shoe, an inverted U-shaped clip straddling the spindle passing through the perforations of the bar, a securing plate U-shaped in cross section and receiving the bar, having its edges resting against the rubber rolls and perforated to receive the terminals of the clip, and binding nuts mounted upon said terminals, substantially as specified.

No. 37,567. Treatment of Paper Making Fibre Materials. *(Traitement du papier pour matières fibreuses.)*

James Johnston, of Peter Culter, County of Aberdeen, and George Johnston, of Denny, County of Stirling, both in Scotland, 10th October, 1891; 5 years.

Claim.—1st. The herein described process or system of cleaning or treating esparto grass or other paper making fibre materials, consisting in treating these with compressed air and circulating cold water or liquid after the first treatment, and strong and second lyes have been run off from the fibre and boiler, substantially as and in the manner set forth. 2nd. In a system or process for cleaning or treating esparto grass or other paper making fibre materials within a close boiler or vessel, the use of compressed air in combination with cold water or liquid, substantially as and in the manner herein described.

No. 37,568. Boom Dipper Dredge. (*Appareil pour mouvoir les seaux des dragueurs.*)

John Kennedy, Montreal, Quebec, Canada, 10th October, 1891; 5 years.

Claim.—1st. In a dredging or excavating machine, the combination of a graduated hoisting drum operated by an engine, intermediate connecting mechanism, a boom or crane supporting a dipper handle carrying a dipper, and a hoisting cable connected to and wound upon said drum and passing over sheave carried at upper end of boom and attached to dipper, all as herein set forth. 2nd. In a dredging or excavating machine, the combination of a graduated hoisting drum operated directly from a double engine, intermediate connecting mechanism friction clutches for throwing same in and out of gear, a boom or crane supporting a dipper handle carrying a dipper, and a hoisting cable connected to and wound upon said drum and passing respectively under and over drums E and F at inner and outer ends of boom, and attached to dipper, all as herein set forth.

No. 37,569. Multiplex Chart for Garments. (*Patron multiple pour tracer les vêtements.*)

May S. Schafer, Chicago, Illinois, U. S. A., 10th October, 1891; 5 years.

Claim.—1st. A multiplex waist-pattern consisting of sections, each section having defining lines for progressive measurements from the smallest to the largest size pattern, said defining lines varying by a differential ratio, substantially as described. 2nd. In a multiplex waist-pattern, a section of such pattern having defining lines for progressive measurements from the smallest to the largest size pattern, said defining lines varying in a differential ratio, substantially as described. 3rd. In a multiplex pattern for dress-waists, a section or division for the back, a section or division for the side body back, a section or division for the front, and a section or division for the side body front, each section or division having a defining edge and a series of defining lines for other edges, and having a varying ratio of progression for regular measurements whereby a multiplicity of patterns can be had on actual measurements taken, substantially as specified.

No. 37,570. Lock. (*Serrure.*)

Archibald Keir Leitch, Great Valley Estate, Deltotte, Ceylon, 10th October, 1891; 5 years.

Claim.—1st. The general construction and arrangement of the parts of box or mortise, locks or locking bolts having the bolt A reciprocated to and from its locking position by an eccentric or cam E, either directly or by employing an eccentric ring E', and rod E', or a bush or block F, all substantially as herein described. 2nd. The general construction and arrangement of the parts of box or mortise locks or locking bolts having the bolt A reciprocated to and from its locking position by an eccentric or cam E acting directly upon the bolt A, all substantially as herein described. 3rd. The general construction and arrangement of the parts of box or mortise locks or locking bolts having the bolt A reciprocated to and from its locking position by an eccentric or cam E connected to it by an eccentric ring E', and rod E', all substantially as herein described. 4th. The construction and general arrangement of the parts of box or mortise locks or locking bolts having the bolt A reciprocated to and from its locking position by an eccentric or cam E within a slot E' in the bolt A, either with or without a bush or block F, all substantially as herein described.

No. 37,571. Device for Catching Mail Bags.

(*Appareil à saisir les sacs postaux.*)

Eugene Morrison Van Hoesen, Preble, New York, U.S.A., 10th October, 1891; 5 years.

Claim.—The combination, with the cross-bar and the spring-arm secured thereto, of a cam lever engaging with the spring, and a hinge sectional brace hinged to the cross-bar and spring-arm.

No. 37,572. Force Pump. (*Pompe foulante.*)

Richard Bradley and Nathan Stevens Soher, both of Ashland, Wisconsin, U.S.A., 10th October, 1891; 5 years.

Claim.—1st. The pump cylinder heads having annular grooves, with outwardly beveled inner walls adapted to receive the ends of the cylinder, essentially as specified. 2nd. The combination, with the pump cylinder having circumferential hoops near its ends, of the heads having annular grooves with outwardly beveled inner walls to receive the ends of the cylinder, substantially as set forth. 3rd. The combination, with the pump cylinder provided with circumferential hoops near its ends, of the heads having annular grooves provided with outwardly beveled inner walls, and seats provided with circumferential sharp edged beads, substantially as set forth. 4th. The combination, with the levers 33 and 36, and piston rod of the pump, of the wire connections 37 between said levers on opposite sides of their fulcrum, essentially as described.

No. 37,573. Car Coupler. (*Attelage de chars.*)

Lucy Gaddis, Gold Hill, and Rufus B. Jones, Lordsburg, both in New Mexico, U.S.A., 10th October, 1891; 5 years.

Claim.—1st. The combination with the draw head, and the hinged plate thereon carrying the coupling pin, of the pivoted lever arranged to extend across the plate and bear thereon, substantially as and for the purpose specified. 2nd. The combination, with the draw head and the spring actuated hinged plate upon the upper face thereof, of the lever pivoted to the draw head and arranged to ex-

tend across the plate and bear thereon, substantially as specified. 3rd. The combination, with the draw head and the spring actuated hinged plate upon the upper face thereof, of the lever hinged to the draw head and extended across the plate and means for detachably engaging the said lever, as set forth.

No. 37,574. Thimble for Stove Pipes.

(*Dè de tuyau de poêle.*)

Michael McQuir, Syracuse, New York, U.S.A., 12th October, 1891; 5 years.

Claim.—1st. The herein described stove pipe thimble, consisting of a casing A, composed of telescopic sections or divisions a, a', a facing B, a rivet C, secured in said facing and soldered to said section, substantially as and for the purpose set forth. 2nd. A new article of manufacture, a stove pipe thimble consisting, essentially, of a casing A, composed of telescopic sections a, a', a facing B, provided with an opening b, and a rivet C, inserted into said opening b, after the form of the facing B, and soldered to said casing, substantially as and for the purpose specified. 3rd. The herein described thimble consisting of a casing A, composed of telescopic sections a, a', a facing B, a hook d, formed integral with the facing B, and a spring D, connected to said hook, substantially as and for the purpose set forth.

No. 37,575. Combined Nut and Pipe Wrench. (*Clé à tuyau et écrou combinées.*)

Adam Rémillard and Antoine Dusseault, both of Three Rivers, Quebec, 12th October, 1891; 5 years.

Claim.—1st. The combination, in a convenient nut and pipe wrench, with the jaws B, C, and shank A, of the sliding hollow shank E, the fixed jaw D, pivoted jaw H, and the cam K, substantially as set forth. 2nd. The combination, in a combined nut and pipe wrench, with a shank carrying a fixed jaw and handle of the sliding piece E, a pivoted jaw H, having shoulders i, teeth h, and nutpiece I, the spring J, cam K, pivoted to the said sliding piece, the said cam having a serrated surface L, and thumb piece M, substantially as set forth.

No. 37,576. Pea Harvesting Attachment for Mowers. (*Attache de machine à recoller les pois pour faucheuses.*)

Hugh Alexander McLaren, Wolfe Island, Ontario, Canada, 12th October, 1891; 5 years.

Claim.—1st. An attachment for or to the cutter bar of harvesters, comprising a bar B, having a series of parallel curved fingers C, of increasing length, the shorter finger approximately horizontal or parallel to the ground, and the longer fingers increasing in ascendancy, the termination of said fingers in line at about right angles to the bar A, and in rear of the harvester, as set forth. 2nd. An attachment to mowing machines, etc., comprising a bar B, secured parallel to the cutter bar A, of the machine, said bar B, having rearwardly and upwardly curved parallel fingers C, of increasing length, the longer fingers having an increased upward inclination, and nearer to the outer end of the cutter bar, said fingers terminating in alignment with the draft, as set forth. 3rd. The rod D, in combination with the fingers C, as and for the purpose set forth.

No. 37,577. Trap for Rats and Mice.

(*Souricière.*)

François Clément Esmonin, Outremont, Quebec, Canada, 12th October, 1891; 5 years.

Claim.—1st. The combination in a rat and mouse trap machine, of a tubed platform D, rotating on pivots C, C, and suspended bail hook G, passing through slot H, substantially as described. 2nd. The combination with the tubed platform D, and suspended bail hook G, of an india rubber stop U, and perforated hanging flap E, and hanging flap J, substantially as set forth.

No. 37,578. Buoy. (*Bouée.*)

Robert Walter Kydd, Montreal, Quebec, Canada, 12th October, 1891; 5 years.

Claim.—1st. In combination with a buoy, a rotary shaft provided with inclined vanes and carried by the buoy so as to be operated by the flowing water, signalling mechanism mounted on top of the buoy and connections for operating such mechanism from said rotary shaft, as set forth. 2nd. In combination with a buoy, a frame pivotally attached to the rear side of same, a shaft provided with inclined vanes and carried horizontally by such frame, signalling mechanism mounted on top of the buoy and gear, chain and shaft connections for operating such mechanism from said rotary shaft, as set forth. 3rd. In combination with a buoy, a rotary shaft provided with inclined vanes and carried by the buoy so as to be operated by the flowing water, a dynamo electric machine and electric lamp mounted or carried on top of said buoy, and connections for operating said dynamo from said rotary shaft, as set forth.

No. 37,579. Apparatus for Separating or Disintegrating Fibres in the Manufacture of Paper Pulp. (*Appareil de separation et de désagregation des fibres dans la fabrication de la pâte à papier.*)

Edward Partington, of Glossop, Derby, England, 12th October, 1891; 5 years.

Claim.—1st. In apparatus for separating or disintegrating fibres

in the manufacture of paper pulp, the combination with an internally toothed fixed cylinder, of an externally toothed roller revolving therein, the points of the respective teeth being at a distance of three quarters of an inch apart or thereabouts, and those of the internal revolving roller of cylinder being arranged in a spiral form and double the pitch, or thereabouts, of those of the external fixed cylinder, substantially as herein described and illustrated. 2nd. The combination with the exit aperture of the fixed cylinder, of a fibre separator or disintegrator, of an elbow pipe capable of being turned into a more or less vertical position so as to obtain more or less "head" or pressure of the material in the interior of the apparatus, substantially as hereinbefore described and illustrated by the drawings annexed.

No. 37,580. Mouse Trap. (*Suricidère*)

Edward Kennedy, Halifax, Nova Scotia, Canada, 12th October, 1891; 5 years.

Claim.—An animal trap having a rectangular body A, provided with an inclined path, B, at one end to an entrance C, a floor, D, from said entrance into the trap, a tilting platform, E, in connection with said floor, and a bait box or trough, G, contiguous to the platform and affixed to a door, H, hinged to the trap, as set forth.

No. 37,581. Cell Case. (*Boîte-cellule*.)

Elijah Charles Bower, Milwaukee, Wisconsin, U.S.A., 12th October 1891; 5 years.

Claim.—1st. The herein described cell case, comprising a plurality of strips or sections, each provided with a series of slots in one of its edges, and a slot at each of its ends formed in its opposite edge, and with a series of perforations adjacent to the inner ends of said slots, each of said slots being formed with a projecting shoulder upon one of its edges, the shoulders in said end slots being formed upon the inner edges of said slots, said strips or sections being arranged in two series arranged transversely to each other, and the projecting shoulder upon the edges of the slots in one series of strips being engaged with the perforations in the transversely arranged strip, substantially as and for the purpose described. 2nd. In a cell case, a series of strips, each having a series of slots in one of its edges, and at each end a slot extending from its opposite edge, with perforations in line with said end slots, and a shoulder projecting from the inner edge of each end slot toward the adjacent end to the said strip.

No. 37,582. Wire Fence. (*Clôture en fil de fer*.)

Mareus G. Winters, Onondaga, Michigan, U.S.A., 12th October, 1891; 5 years.

Claim.—A wire fence, composed of single wires C, D, at the bottom, a single wire L, at the top, a single wire J, intermediately of the double wires K, and H, and twisted to said wires, and the intermediate double wires E, F, G, H, said wires twisted together consecutively and reversely in diamond-shaped meshes and fastened to posts A, A, and a slat M, the whole constructed in the manner set forth.

No. 37,583. Telegraph Pole.

(*Poteau de télégraphe*.)

Charles M. Brush and Cornelius J. Waldron, both of Great Bend, Pennsylvania, U.S.A., 12th October, 1891; 5 years.

Claim.—1st. A telegraph pole consisting of a blank or corrugated metal rolled into tubular shape and having rings secured inside and bands outside to brace and hold the pole in shape, substantially as set forth. 2nd. A telegraph pole formed of sheet metal rolled into tubular shape and having rings secured inside and bands outside to brace and hold the pole in shape, and insulators located at intervals inside the pole for holding the wires out of contact with the pole, substantially as set forth. 3rd. A telegraph pole consisting of a corrugated metal blank having holes therein, said blank adapted to be rolled into tubular shape, substantially as set forth. 4th. The combination, with a corrugated metal pole, having perforations therein, and rings inside and bands outside to brace the pole and keep it in shape, of cross-arms mounted on the pole, and set screws for holding these arms adjustably in position, substantially as set forth.

No. 37,584. Heater for Tempering Grain.

(*Calorifère pour temperer les grains*.)

Frederick D. Zimmerman and Frank Beall, both of Minneapolis, Minnesota, U.S.A., 12th October, 1891; 5 years.

Claim.—1st. A steamer or heater for tempering wheat or other grain having in its discharge end a suspended valve regulator, and also having an inlet valve adapted to be more or less nearly closed by the descent of the regulator, as set forth. 2nd. A steamer or heater for tempering wheat or other grain having a lever pivoted between its ends, a rod extending downward from one end of the lever and sustaining a valve regulator somewhat above the discharge opening, and a second rod extending upward from the opposite end of the lever and carrying an inlet valve somewhat below the inlet, whereby the descent of the regulator causes the valve to more or less nearly close the inlet, as set forth. 3rd. A steamer or heater for tempering wheat or other grain having a lever pivoted between its ends, a rod extending downward from one end of the lever and sustaining a valve regulator somewhat above the discharge opening, a second rod extending upward from the opposite end of the lever and carrying an inlet valve somewhat below the inlet, and spiders having central openings acting as guide bearings for the rods. 4th. A steamer or heater for tempering wheat or other grain, a

lever pivoted between its ends, a rod extending downward from an end of the lever and carrying a valve regulator somewhat above the discharge opening, a second rod extending upward from the opposite end of the lever and carrying an inlet valve, and a threaded inlet tube adapted to be screwed more or less nearly in contact with the inlet valve whereby the supply may be regulated, as set forth. 5th. A steamer or heater for tempering wheat or other grain having a set of funnels and cones alternately arranged as set forth whereby the grain is scattered and subjected longer to the heat or steam.

No. 37,585. Ditching Machine.

(*Machine à fossoyer*.)

Robert Hunter, Chesaning, Michigan, U.S.A., 12th October, 1891; 5 years.

Claim.—1st. In a ditching machine, a cutter 1, provided with two removably connected vertical side plates 2 and 3, having cutting edges on their front ends, a downwardly and forwardly curved and slightly inclined mold board 7, and an angular plowshare 8, having a horizontal sharp point 9, at its forward end, a vertical knife or colter 10, and a cutting edge 11, which is inclined rearwardly and to the right, substantially as described. 2nd. In a ditching machine, the cutter 1, provided with the vertical right and left side plates 2 and 3, the latter being formed with the vertical cutting edge 4, for a portion of its height and the former with a full height rearwardly inclined cutting edge G, which projects forwardly of said cutting edge 4, the forwardly curved mold board 7, which is slightly inclined along its right edge, extended past said cutting edge 6, and abutted against the lower end of said cutting edge 4, the angular plowshare 8, having a sharp point 9, the vertical knife or colter 10, and the rearwardly inclined cutting edge 11, one or more screw bolts 12, for removably connecting said mold board and plowshare, and the cross braces 13, and the bolts or screws 14, for removably connecting said side plates, substantially as described. 3rd. In a ditching machine, an endless conveyor 30, composed of an inclined frame 26, sprocket wheels or rollers 27 and 28, an endless belt or chain 36, provided with a series of closely arranged buckets 31, which are formed of bent or right angled plates 34, and so arranged that their horizontal bottoms will fit closely against their vertical sides or walls and that their ends will be close to the sides of said frame, in combination with the slotted and adjustable hangers 53, secured to the sides of said inclined frame, and the spring pressed or yielding brush roll 55, journaled in the lower ends of said hangers, substantially as described. 4th. In a ditching machine, an endless conveyor 30, composed of an inclined frame 26, sprocket wheels or rollers 27 and 28, provided with a series of closely arranged buckets 31, which are formed of bent or right angled plates 34, and so arranged that their horizontal bottoms will fit closely against their vertical sides or walls and that their ends will be close to the sides of said frame, in combination with the slotted and adjustable hangers 53, secured to the sides of said inclined frame, and the brush roll 55, yieldingly journaled in the lower ends of said hangers, substantially as described. 5th. In a ditching machine, an endless conveyor 30, composed of an inclined frame 26, sprocket wheels or rollers 27 and 28, and an endless belt or chain 35, provided with a series of closely arranged buckets 31, which are formed of bent or right angled plates 34, and so arranged that their horizontal bottoms will fit closely against their vertical sides or walls and that their ends will be close to the sides of said frame, in combination with a similarly constructed and operated endless conveyor 32, which is geared to and operated from the conveyor first named and which is downwardly inclined and arranged at a right angle to and beneath the upper end of said first named conveyor, and the yielding journaled brush rolls 55, one being arranged beneath each of said endless conveyers, substantially as and for the purpose described. 6th. In a ditching machine, an endless conveyor 30, composed of an inclined frame 26, sprocket wheels or rollers 27 and 28, and an endless belt or chain 35, provided with a series of closely arranged buckets 31, which are formed of bent or right angled plates and so arranged that their horizontal bottoms will fit closely against their vertical sides or walls and that their ends will be close to the sides of said frame, in combination with a similarly constructed and operated endless conveyor 32, which is geared to and operated from the conveyor first named and which is downwardly inclined and arranged at a right angle to and beneath the upper end of said first named conveyor, the yielding journaled brush rolls 55, one being arranged beneath each of said endless conveyers, and a suitable plow or cutter 1, arranged at the lower end of and communicating with said first named conveyor, substantially as described. 7th. In a ditching machine, the combination, with a plow or cutter 1, and two endless conveyers 30 and 32, communicating therewith and arranged at right angles to each other, of means for imparting motion to said conveyor, the same comprising a traction wheel 38, having a sprocket wheel 39, on its side, a sprocket chain 40, connecting the same and another sprocket wheel 41, above, gearing intermediate of the same and the upper ends of said conveyers and the yieldingly journaled brush rolls 55, one being arranged beneath each of said endless conveyers, substantially as described. 8th. In a ditching machine, the combination, with a plow or cutter 1, and two endless conveyers 30 and 32, communicating therewith and arranged at right angles to each other, of means for imparting motion to said conveyers, the same comprising a traction wheel 38, having a sprocket wheel 39, on its side, a sprocket chain 40, connecting the same and another sprocket wheel above 41, gearing intermediate of the same and the upper ends of said conveyers, said gearing consisting of the shaft 42, the large gear wheel 43, the small gear wheel 44, having the beveled teeth 46, on its outer face or side, the bevel pinion 47, the shaft 48, and the yieldingly journaled brush rolls, one being arranged beneath each of said endless conveyers, substantially as described. 9th. In a ditching machine, the combination, with the horizontal beam 16, of the vertically adjustable support 23, the gage wheel 24, journaled in the lower ends thereof, and the two-armed scraper 25, which is pivoted to said beam in rear of said support and adapted to rest at its lower closed end upon the periphery of said wheel, substantially as described. 10th. In a ditching machine, the combi-

nation, with the frame work 36, provided with the rearwardly extending horizontal bar 58, and the screw bolt 62, of the scraper 59, which is forwardly curved for a portion of its length, formed with the slot 61, in its upper end and provided with the transverse leveling extension 60, substantially as described. 11th. In a ditching machine, the combination, with the frame work 36, provided with the rearwardly extending horizontal bar 58, and the traction wheel 38, journaled in said frame work, and provided with the pins or spuds 65, on its periphery, of the spring metal scraper 63, which is formed with a slight downward curve and the teeth 64, at its front end and with the slot 66, at its rear end and the clamp bolt or screw 67, substantially as and for the purpose described.

No. 37,586. Blank for Horse Shoes.

(*Ebauche de fer à cheval.*)

Charles Henry Perkins, Providence, Rhode Island, U.S.A., 12th October, 1891; 15 years.

Claim.—1st. A toe weighted horse shoe blank substantially uniform in thickness, having one straight edge, a wide toe portion, and narrow heel portions tapered in both directions from the centre of said toe portion, and provided with appropriate nail scores. 2nd. A blank bar containing toe weighted horse shoe blanks, in two series, separated from each other by a zig-zag groove, and each blank having appropriate nail scores. 3rd. A blank bar containing toe weighted horse shoe blanks, in two lines or series, separated by a zig-zag groove having variably beveled sides affording a wide beveled edge at the toe portion of each blank, and a narrow bevel at the heels, said toe portion being opposite the two heel portions of adjacent blanks. 4th. A straight edged blank bar containing toe weighted horse shoe blanks, said bar having on one side near both edges, appropriate nail scores, the nail points in the scores near one edge being diagonally opposite the laterally adjacent scores. 5th. A straight edged blank bar provided with nail scores near and parallel with both edges, and gauge marks which at one edge are diagonally opposite the adjacent gauge marks at the opposite edge, said marks defining the ends of blanks, and indicating a parting line from each gauge mark to the nearest gauge mark at the opposite edge of the bar. 6th. A toe weighted horse shoe blank bar, containing a single line of blanks, each having one straight edge and one edge reversely inclined from the middle toward the ends, and each provided with appropriate nail scores, substantially as described.

No. 37,587. Measure Spoon with Straight Edges. (*Cuillère pour mesurer les ingrédients.*)

Max Scheid, Wadgassen, Prussia, Germany, 12th October, 1891; 5 years.

Claim.—1st. The herein described improvements in measuring spoons, that is to say, a spoon provided with a measuring receptacle and an attached movable device for leveling off the contents of the measuring receptacle, as set forth. 2nd. The measuring spoon comprising the measuring receptacle *a*, handle *d*, frame *b*, and movable leveling device *c*, substantially as set forth and shown in the drawings, for the purpose specified.

No. 37,588. Means for Stopping Copying Presses. (*Moyen d'arrêter les presses à copier.*)

Max Scheid, Wadgassen, Prussia, Germany, 12th October, 1891; 5 years.

Claim.—A locking device for copying presses, consisting of a catch *b*, which is bevelled off at its front end, and is connected at its rear end with a bent leaf spring *d*, which is surrounded by a spiral spring *e*, the lower portion of the same being formed with a recess *f*, for the bit of a key, and said catch *b*, being arranged opposite to longitudinal grooves *a*, of the copying press spindle *A*, substantially as described.

No. 37,589. Coil Clasp. (*Agrafe pour serpentina.*)

Calvin Jackson, Jacksonwald, Pennsylvania, U.S.A., 12th October, 1891; 5 years.

Claim.—1st. A clasp or fastener consisting in two individual parallel oppositely wound spiral coils adapted to be pressed laterally together, and a removable connector to be passed through and removed from the space formed by the overlapping portions of the spiral coils when they are pressed together, substantially as set forth. 2nd. As an improved article of manufacture, a clasp or fastener consisting of an individual right and left hand round spiral coil adapted to be pressed laterally together throughout their lengths to overlap their coils, and a removable connector to be passed through and withdrawn from the central space formed by these overlapped portions to connect and disconnect the two coils, substantially as set forth. 3rd. The combination with the two individual spiral coils, and end caps having aligned openings or apertures, of a removable connector adapted to be passed through the space formed by the overlapping portions of the coils when the coils are pressed together and through the apertures or openings in the end caps, substantially as set forth. 4th. The combination with two individual spiral coils adapted to be pressed laterally together, and end caps inclosing the ends of said spirals and having aligned apertures or openings of a removable rod to be passed through and removed from the apertured end caps and the space formed by the overlapping portions of the coils, and means for locking the rod against longitudinal movement, substantially as set forth. 5th. The combination with the two individual spirals adapted to be pressed together laterally, and end caps inclosing the ends of said spirals and having apertures or openings, of a rod headed at one end and adapted to be passed through

the end caps and space formed by the overlapping portions of the coils when the spirals are pressed together, and a nut on the opposite end of the rod, substantially as set forth. 6th. The combination with the belt, bag, or other article and two individual spiral coils secured to the meeting edges or ends thereof, and strips extending longitudinally through the coils, said coils being adapted to be pressed together laterally, and a removable rod to be passed through the space formed by the overlapping portions of the coils, whereby the space within the coils will be practically closed and a tight joint formed, substantially as set forth. 7th. The combination with the belt, bag, or other article having ends or edges to be connected, said ends having a row of apertures, of individual spiral coils extending through said apertures whereby strips are formed within each coil, and a rod to be passed through and removed from the space formed by the overlapping portions of the said coils, substantially as set forth. 8th. The combination with a bag having a row of apertures parallel with and in rear of each edge of its mouth, of an individual spiral coil extending through said apertures and enclosing the strips formed above and beyond said apertures, said strips being curved upward and inward along the opposite sides of the coils, and the locking rod adapted to be passed through and removed from the space formed by the overlapping portions of the coils, whereby when the coils are pressed laterally together and the rod inserted the edges of the said strips will be held together to close the mouth of the bag.

No. 37,590. Scythe Handle. (*Manche de faux.*)

William Henry Dodge, Lenox, Massachusetts, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. The herein described improvement in scythes, consisting of the thole or handle secured to the snath or shaft so as to be free to revolve, as set forth. 2nd. The herein described improvement in scythes, consisting of the snath or shaft having a rod or bolt secured thereto, and the thole or handle loosely secured on said rod or bolt, as set forth. 3rd. The combination, with the snath or shaft, of the threaded rod or bolt secured thereto, the thole or handle having a central hole or opening, the tube or cylinder located therein, and the nut for holding the thole or handle, which latter is loosely secured on said rod or bolt, substantially as set forth. 4th. The combination, with the snath or shaft, of the threaded rod or bolt having an eye encircling said snath or shaft, the thole or handle having a central hole or opening, the tube or cylinder located therein, the end cap having a central slot, and the nut screwed on said rod, substantially as set forth, said thole or handle being loose on said rod, as stated.

No. 37,591. Molding Flask.

(*Châssis pour moulage.*)

Millard F. Richardson, sr., Liberty, Indiana, and Edward Boyer and Horace Greely Swope, both of Dayton, Ohio, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. In a flask, a drag having its sides and ends each composed of longitudinally slotted superimposed sections, and tie bolts passing through the slots of the sections and clamping the latter together, while enabling such sections to be adjusted longitudinally with relation to each other, substantially as described. 2nd. The combination, in a flask, of the drag and cope having their sides and ends each composed of longitudinally slotted superimposed sections, tie bolts passing through the slotted portions of the sections, and means for tightening the tie bolts to clamp the sections together, substantially as described. 3rd. The combination of a drag *A*, having its sides adjustable in length, longitudinally adjustable plate *F*, carrying the dowel *E*, and the cope *B*, adjustable similarly to the drag and provided with the adjusting socket plate *H*, substantially as described. 4th. In a molding flask, a drag having its sides, and ends each composed of two plates overlapping each other, and means whereby the overlapping portions of said sides and ends are adjustably clamped together, as and for the purpose described.

No. 37,592. Apparatus for Parlor Table Games. (*Appareil pour tables de jeu.*)

David Foster, Selby, York, England, 13th October, 1891; 5 years.

Claim.—1st. A portable frame or "fence" mounted on a table or surface, and used in combination with tools or implements for playing parlour table games, of cricket, football, lawn tennis, and other like games, substantially as hereinbefore described. 2nd. The combination of a handle with a miniature boot to form the "kinking" or striking instrument in the game of parlour football, substantially as and for the purposes hereinbefore described. 3rd. The combination, with a "fence," of the brass or other rods mounted and supported at each corner of the said "fence," and carrying or supporting netting *g* for parlour table games, substantially in the manner and for the purposes hereinbefore described.

No. 37,593. Billiard Table. (*Table de billard.*)

James Samuel Burroughs, assignees of Walter Buttery, both of London, England, 13th October, 1891; 5 years.

Claim.—1st. In the construction of a billiard table, fixing and straining the cloth over the cushion by means of a wedge entering the cloth into a horizontal groove or recess in any part of the cushion or its frame, substantially as described. 2nd. The recess *C* on the rubber block *A*, in combination with the wedge *D*, securing the cloth *B*, substantially as described and illustrated, figure 2 of the drawing. 3rd. The recess *C* on the metal plate *E*, in combination with the wedge *D* securing the cloth *B*, substantially as described and illustrated, figures 3 and 4 of the drawing.

No. 37,594. Combined Fare Receipt and Register. (*Récepteur et registre de billets combinés.*)

William Thomas Wood, Nashville, Tennessee, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. A fare receipt and register comprising a receipt for the fares, provided with a movable portion, and a movable register arranged adjacent to the receipt, the register being provided with printing faces, a surface upon which the printing is to be done and a connection between the movable portion of the receipt and the register, whereby, when the movable portion is displaced, the printing faces of the register is brought against a surface designed to receive an impression, substantially as described. 2nd. A combined fare receipt and register comprising a fare receipt having a movable portion permitting displacement to allow of the removal of the fares, a way of passage leading to the receipt, a lever provided with a projection or projections extending into the way or passage, and serving to regulate the introduction of fares, a register connected with the lever in such manner as to be operated by the lever, the register being movable, and a connection between the movable portions of the receipt and the register, substantially as described. 3rd. A combined fare receipt and register comprising a fare receipt provided with a movable portion permitting the removal of the fares, a register placed adjacent to the receipt, and a connection between the movable portion and the register, a printing surface consisting of a strip of paper or the like, a locking device for the movable portion between the parts of which the strip of paper is introduced, the parts being so arranged that the strip of paper or the like is injured in the act of releasing the locking device, substantially as described. 4th. A combined fare receipt and register comprising a fare receipt having a movable portion permitting displacement to allow of the removal of the fares, a way of passage leading to the receipt, a lever provided with a projection or projections extending into the way or passage, and serving to regulate the introduction of fares, a bell and a projection from the lever engaging the hammer of the bell, and a register connected with the lever, substantially as described.

No. 37,595. Barrel Washer.

(*Appareil pour laver les barils.*)

George Alvin Bidwell, Pittsfield, Massachusetts, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. A barrel washer comprising a hollow shaft mounted to rotate and adapted to connect at one end with a steam and water supply and at its other end forming a support for the barrel, a branch pipe leading from the said hollow shaft to discharge into the barrel, and an adjustable support for the barrel, arranged in line with the said shaft, substantially as shown and described. 2nd. A barrel washer comprising a hollow shaft mounted to rotate and adapted to connect at one end with a steam and water supply, and at its other end forming a support for the barrel, a branch pipe leading from the said hollow shaft to discharge into the barrel, and an adjustable support for the barrel, arranged in line with the said shaft, and means, substantially as described, for imparting a forward and backward motion to the said shaft to rotate the barrel in opposite directions, as set forth. 3rd. In a barrel washer, the combination, with a hollow shaft mounted to turn in one direction, of a fixed pipe leading into one end of the said hollow shaft and connected with a water and steam supply, a branch pipe leading from the said hollow shaft and adapted to discharge into the barrel to be washed, and a longitudinally adjustable shaft forming with the said hollow shaft bearings for the barrel, so as to turn the latter, substantially as shown and described. 4th. In a barrel washer, the combination, with a hollow shaft mounted to turn in one direction, of a fixed pipe leading into one end of the said hollow shaft, and connected with a water and feed supply, a branch pipe leading from the said hollow shaft and adapted to discharge into the barrel to be washed, a longitudinally adjustable shaft forming with the said hollow shaft bearings for the barrel, so as to turn the latter, a longitudinally adjustable frame supporting the said shaft, and means for locking the adjustable frame, substantially as shown and described. 5th. In a barrel washer, the combination, with a longitudinally adjustable frame, of a sleeve mounted to slide therein, a shaft connected with the said sleeve and free to revolve therein, but sliding with the said sleeve, and a barrel bearing adapted to be engaged by the outer end of the said shaft, substantially as shown and described. 6th. In a barrel washer, the combination, with a longitudinally adjustable frame, of a sleeve mounted to slide therein, a shaft connected with the said sleeve and free to revolve therein, but sliding with the said sleeve, a barrel bearing adapted to be engaged by the outer end of the said shaft, and a hollow shaft mounted to rotate and connected with a barrel bearing opposite the first named shaft, substantially as shown and described.

No. 37,596. Pot for Tea or Coffee.

(*Théière ou cafetière.*)

John W. De Atley, Blue Springs, Missouri, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. An improved coffee or tea pot, provided with a perforated flange in the upper part of its interior and extending upwardly from the inner surface of the body of the pot, substantially as set forth. 2nd. An improved coffee or tea pot, provided with a condensing chamber located upon its top, and having a pouring shield or guide in the upper part of its interior, said guard or shield having a straight or inner margin extending across the interior of the chamber, substantially as set forth. 3rd. An improved coffee or tea pot, provided with a condensing chamber located upon its top, a pouring guard or shield located in the upper part of the chamber and having a straight inner edge extending across the interior of the chamber, a concavo-convex cover for the condensing chamber, pro-

vided with a central opening, and a tube united at its upper end to the inner margin of the guard, and extending downward through the bottom of the said chamber, the lower end of the tube being perforated, and its upper end registering with the opening in the cover, substantially as set forth. 4th. An improved coffee or tea pot, provided with a perforated flange extending upwardly and inwardly from the upper part of the inner surface of the body of the pot, a support of approximately Z-form in cross section, and a sack having a wire inserted into its upper edge and resting on the lower flange of the support, substantially as set forth. 5th. An improved coffee or tea pot, provided with a perforated flange extending upwardly and inwardly from the upper part of the inner surface of the body of the pot, a support of approximately Z-form in cross section and having an elongated frusto-conical and closed body portion, and a sack having a wire inserted into its upper edge and resting on the lower flange of the support, substantially as set forth.

No. 37,597. Pocket Protector.

(*Protecteur de poches.*)

Louis F. Robare, Ausable Forks, New York, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. In a pocket protector and supporter, a single flat piece of flexible material provided with a longitudinal slot so arranged that it completely surrounds the mouth of the pocket, substantially as described. 2nd. In a pocket protector and supporter, a piece of thin flat material composed of spring steel, or other equivalent material, and provided with a longitudinal slot forming the mouth of the pocket, the upper part of said attachment having less resiliency or stiffness than the lower part, as set forth. 3rd. A pocket protector and supporter, consisting of a thin flat piece of resilient metal, or similar material, having a longitudinal slot whereby the metal wholly surrounds the mouth of the pocket and lies in a plane, substantially parallel with the exterior of the garment, in the manner and for the purpose substantially as set forth. 4th. A pocket protector and supporter, consisting of a flat piece of resilient metal, having a longitudinal slot, whereby the metal completely surrounds the mouth of the pocket, said piece having plane sides free from projections, as and for the purpose set forth.

No. 37,598. Apparatus for Coiling Metal Rods. (*Appareil à rouler le métal en barre.*)

Henry Roberts, Pittsburg, Pennsylvania, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. In metal coiling apparatus, a rotary coiling cone having a longitudinal rib with a lateral flange, substantially as and for the purposes described. 2nd. In metal coiling apparatus, a rotary coiling cone having two longitudinal ribs with lateral flanges, substantially as and for the purposes described. 3rd. In a metal coiling apparatus, a rotary coiling cone having an exposed outer surface along which the rod travels, a hollow collar, and driving gear, substantially as and for the purposes described.

No. 37,599. Apparatus for Coiling Rods.

(*Appareil pour rouler les barres.*)

Henry Roberts, Pittsburg, Pennsylvania, U.S.A., 13th October, 1891; 5 years.

Claim.—1st. In apparatus for conveying coiled rods from a rod coiler, the combination of a track or way, adjacent elevated rails 15, on which the coils may ride in an inclined position, said rails having an intermediate slot, and an endless chain having spurs projecting between the rails, substantially as and for the purposes described. 2nd. In apparatus for conveying coiled rods from a rod coiler, the combination of a track or way on which the coils may ride, an endless connecting chain having spurs for engaging and conveying the coils, driving wheel for the chain, and a downwardly inclined chute at the final driving wheel, substantially as and for the purposes described.

No. 37,600. Dress Chart. (*Mesure pour robes.*)

Julia Penley, of Boston, Massachusetts, U.S.A., re-issue of Patent No. 33,104, 14th October, 1891; 5 years.

Claim.—1st. In a dress chart, the combination of a shoulder scale C, graduated by numbers thereon, a neck scale B, the latter being composed of a series of intersecting lines and numbers at the intersections of said lines, and connecting lines between the numerals on scale B and C, whereby a measurement of the neck of a garment being laid off by number on the neck scale, the number on the shoulder scale connected thereto indicates the proper shoulder measure, substantially as set forth. 2nd. The combination with the sleeve scale A, of the separate scales P, P¹, said scales being graduated by numbers, the numerals on the scale P corresponding with those on the scale A, and the numerals on the scale P¹ corresponding with similar numbers on the scale P, whereby when a certain number on the scale P is applied in the manner set forth in the specification to its equivalent number, said number having been ascertained by measurement, the same numeral on the scale P¹ indicates the extreme point of the upper end of the under part of a dress sleeve, as set forth. 3rd. In a dress chart, the waist scale F consisting of a series of regularly spaced horizontal lines extending from front to back of the waist portion of the chart and bearing graduated numbers, a series of perpendicular lines intersecting said horizontal lines, also bearing graduated numbers, and waist gores I, I, all arranged substantially as shown and for the purposes set forth. 4th. The combination with a body chart, of a sleeve chart forming an integral part of the body chart at the base thereof and constituting the lowermost or hip portion of same while retaining its identical sleeve shape.

No. 37,601. Roof Paint. (*Peinture pour toitures.*)

Jacob B. Zook, Xenia, Indiana, U.S.A., 15th October, 1891; 5 years.

Claim.—A paint composed of the following elements, namely: coal tar, oxide of iron, slate, chip rubber, asbestos, polish composed of rosin, benzine, crude carbonic acid, lamp black, and asphaltum, creosote, benzine, and turpentine, which are mixed in substantially the proportions specified.

No. 37,602. Water Tube Steam Boiler.*(Chaudière à vapeur à tuyau d'eau.)*

John A. Cadwell, Bay Ridge, New York, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. In a water tube steam boiler header, the combination of four tubes, communicating therewith with two nipples inserted and fastened in the top and bottom portions, for the purpose of joining it to its fellows above and below it, so as to form a portion of the water legs of said boiler, substantially as and for the purpose set forth. 2nd. In a steam boiler header, the combination of four tubes communicating therewith with two nipples inserted and fastened in the top and bottom portions, said nipples being of practically the same diameter as the said tubes, as and for the purpose set forth. 3rd. In a water tube steam boiler, the combination, with a box or header having tubes communicating with the same and an opening giving access to the said tubes, of a cover, Q, adapted to close the said opening and bolted to the said box from the outside by means of bolts held in said box at points intermediate to the location of said tubes, substantially as and for the purpose set forth. 4th. In a water tube steam boiler, the combination, with a box or header having tubes communicating with the same, and an opening giving access to the said tubes, and having exterior pockets adapted to receive and retain bolts, F, of a cover to close the said opening, and having openings at its edge in front of the said pockets and bolts, F, held by their heads in the said pockets and passing through the said openings in the said cover for the purpose of tightening the latter against the box, substantially as specified. 5th. In a water tube steam boiler containing a series of tubes, the combination of said tubes with fire brick or other material spanning or bridging substantially each alternate space between said tubes, substantially as and for the purpose specified. 6th. In a water tube steam boiler containing a series of tubes, the combination of said tubes with blocks of fire brick or other material spanning or bridging substantially each alternate space between the tubes, said blocks having corrugated edges, substantially as and for the purpose set forth. 7th. In a water tube steam boiler containing a series of tubes, the combination of said tubes with removable blocks of fire bricks or other fire resisting material placed at intervals for the purpose of controlling or equalizing the draught, substantially as specified.

No. 37,603. Process and Apparatus for the Distillation and Rectification of Alcohols. (*Procédé et appareil pour la distillation et rectification de l'alcool.*)

Flore Haecq, Brussels, Belgium, (administratrix of the estate of Francois Haecq, in his life time of Brussels aforesaid), 15th October, 1891; 5 years.

Claim.—1st. The process hereinbefore described of distillation and rectification of alcohols of every origin which consists: (a) In separating from the raw must or wort the matters which are in suspension therein. (b) In extracting from the filtered must or wort the matters called bad head flavours (aldehydes ordinary ether and acetic ether) by raising successively the temperature of the must or wort to the degree required for obtaining the successive evaporation of these various matters. (c) In extracting from the filtered must or wort the matters called bad tail flavours (propylic alcohol, butylic alcohol and amylic alcohol) by preventing their return to the boiler containing the must or wort after they have been carried out of it by the vapours resulting from the heating of the said must or wort. (d) In extracting from the must or wort freed from the matters called bad head and tail flavours, ethylic alcohol concentrated to a high degree by raising the temperature of the said must or wort to the degree required for obtaining the evaporation of the ethylic alcohol and by ridding the vapours of the ethylic alcohol from those matters of which the degree of evaporation is higher. (e) In extracting in certain cases from the phlegm which forms the residue of the preceding operations, brandies of great aromatic richness by continuing the distillation of this phlegm by naked fire. (f) In eliminating from the ethylic alcohol and the brandy produced by the two last operations the poisonous gases which they contained by prolonged heating in the water bath. 2nd. For the purpose of separating from the raw must or wort the matters therein held in suspension—the use of a series of superimposed filters in which that part constituting the filter properly so called is formed of a stuff bag lined on the inside with paper pulp, substantially as hereinbefore described and illustrated. 3rd. For the extraction from the filtered must or wort of the matters called bad head flavours (aldehydes ordinary ether and acetic ether) and the matters called bad tail flavours (propylic acid butylic acid and amylic acid), the use in combination with a boiler containing the filtered must or wort, and connected with a steam generator of the apparatus or parts of apparatus herein after referred to under heads "a," "b," "c." (a) A distilling column enclosed in a water chamber which is connected with a cold water reservoir and with the steam generator, this column being traversed by pipes communicating with the water chamber, the lower part of the said column being divided into compartments by discs having apertures formed in them which permit of the ascent of the vapours passing from the boiler and provided with pipes which permit of the descent of the matters which separate themselves from the vapours by condensation in the column. (b) A refrigerating condenser apparatus communicating with the top of the distilling column, in which condenser the vapours passing from the said column are condensed by

passing first between two cylinders, with conical bases placed one within the other and thence into a zig-zag pipe which conveys them to a collector. (c) An arrangement for preventing the return to the boiler of the matters called bad tail flavours which have been drawn into the column, which arrangement consists of a pipe running from the bottom of the column to a pair of receivers, communicating with each other at the top and at the bottom, and also communicating at the bottom with the boiler, and at the top with a collector, or into which the matters called bad tail flavours pass, and in which the said matters collect, the whole substantially as above described and shown. 4th. The use of apparatus constructed, substantially as hereinbefore described and illustrated, for the extraction from the must or wort which has been freed from the matters called bad head and tail flavours of ethylic alcohol concentrated to a high degree and in certain cases of brandy of great aromatic richness, that is to say, the use in combination with a boiler connected with a steam generator and containing the must or wort to be operated upon, of a column surrounded by a water chamber, and of a refrigerating condenser with a collector for receiving the ethylic alcoholic and the brandy, and of a discharge pipe for conveying the matters condensal in the column from the bottom of the said column into a receiver connected with the boiler, the said column and chamber and condenser being of the same general construction as the column, the chamber and the refrigerating condenser referred to in the previous claim but of larger dimensions. 5th. The use for the purpose of eliminating the poisonous gases contained in the ethylic alcohol and in the brandy produced by the preceding operation, of an apparatus consisting essentially of a vessel for containing the matters to be operated upon, which vessel is placed in a second vessel containing water and connected with the steam generator, the top of the inner vessel communicating by means of a pipe with refrigerating condenser, substantially as hereinbefore described and illustrated. 6th. The use, in combination, with the filters referred to in the second claim, of the distilling apparatus referred to in the third claim, and the apparatus for the production of ethylic alcohol referred to in the fourth claim, and the apparatus referred to in the fifth claim, for the purpose of eliminating the poisonous gases contained in the ethylic alcohol and in the brandy produced by the preceding operations.

No. 37,604. Bed Bottom. (*Sommier elastique.*)

Elias Adelbert Clearceland, Belvidere, Illinois, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. In combination, a spring bed bottom composed of spiral springs and elevated head and foot supports, and flexible lacings laced alternately through the rows of springs and secured at each end of the supports, substantially as set forth. 2nd. In combination, a spring bed bottom composed of spiral springs and elevated head and foot supports, and flexible lacings laced alternately through the rows of springs and adjustably secured to the supports, substantially as set forth. 3rd. In a bed bottom, the combination with the spiral springs, of spring connections between said springs, and flexible lacings laced alternately through the springs and connected to elevated head and foot supports, substantially as set forth. 4th. In a bed bottom, the combination with the spiral springs, of spring connections between said springs, and flexible lacings laced alternately through the spiral springs and adjustably connected to elevated head and foot supports, substantially as set forth. 5th. In combination, the spring bed bottom, and lacings laced alternately through the rows of the springs of said bottom and secured at each end to a stationary support, substantially as set forth. 6th. In combination, a spring bed bottom, and lacings laced alternately through the rows of the springs of said bottom and adjustably secured to a stationary support, substantially as set forth.

No. 37,605. Fastening Device.*(Appareil pour assujétir.)*

George Albert Weld, Winchester, Massachusetts, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. In a fastening device, the plate B, formed with two parallel arms, the extremity of said arms adapted to be turned back, forming the integral bearings b, b, and with the projections b', b', adapted to form stops for the tongue when turned back with the said bearings, in combination with the tongue A, said tongue provided with the rounding integral pintles a', a', adapted to be inserted and used in bearings b, b, and the integral cam part a, formed narrower than the body of said tongue at the junction adjacent to the said pintles, and all adapted and arranged to operate in connection with a suitable spring plate to be secured to plate B, substantially as and for the purposes set forth. 2nd. In a fastening device, the combination of the spring plate C, formed with the spring parts c, c, adjacent to a slot formed in said plate, and with the openings c', c', the plate B, provided with the bearings b, b, and stops b', b', all integral with said plate, and the tongue A, having the cam part a and all adapted to operate substantially as and for the purposes set forth. 3rd. The fastening device herein described, consisting, essentially, of the plate B, having the bearings b, b, and stops b', b', formed as described, the plate C, having the spring parts c, c, and the apertures c', c', to receive the bearings b, b, and the stops b', b', the tongue A, having the rounding pintles a', a', and the cam part a, formed as described, and the take-up D, having the openings d, and all arranged substantially as and for the purposes set forth.

No. 37,606. Fastener for Boxes.*(Fermeture pour boîtes.)*

Jephth Lauron Matson, Dunbarton, Wisconsin, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. The combination, with a crate having the cleat, of its cover provided with a circular recess, and a spring catch con-

structed of wire and bent to form a circular head or loop 8, adapted to engage the circular recess, and having its sides secured to the cleat of the body, substantially as described. 2nd. The combination of a grate consisting of the body provided with a cleat 2, having a central vertical recess 5, and a cover having a cleat provided with a circular recess and with a slot forming a mouth for the recess, and a spring catch constructed of wire and comprising the circular loop or head adapted to engage the circular recess, and the L-shaped sides having vertical portions arranged in the vertical recess, and horizontal portions secured to the bottom of the cleat of the body, substantially as described.

No. 37,607. Light Emitter or Illuminant for Electric and Other Lamps.

(Composition pour jeter la lumière ou lumineuse pour lampes électriques ou autres.)

James Clegg, Westminster, England, 15th October, 1891; 5 years.

Claim.—1st. The production of an electric incandescent or other lamp by the process hereinbefore described, of encasing carbon or other electric conducting material with a metallic oxide or oxides by electrically heating the electric conductor whilst it is immersed in a metallic solution, or immersed in a liquid in which a metallic compound or compounds is or are suspended, and by completing the encasement when desired, by electrically heating the electric conductor, either whilst it is immersed within, or suspended within a vacuum over either a vaporizable carbon compound, or a vaporizable metallic carbon compound as hereinbefore described. 2nd. I claim the process of preparing and producing an illuminant of an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in a solution of a metallic compound and electrically heating it therein in order to derive an encasement or deposition thereof, as herein described. 3rd. I claim the process of preparing and producing an illuminant of an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in a solution of two or more of metallic compounds and electrically heating it whilst therein in order to derive an encasement or deposition thereof, as herein described. 4th. I claim the process of preparing and producing an illuminant of an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in a liquid in which a metallic compound is suspended and of electrically heating it whilst therein in order to derive a deposition or an encasement thereof, as herein described. 5th. I claim the process of preparing and producing an illuminant for an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in a liquid in which two or more metallic compounds are suspended and electrically heating it whilst therein in order to derive a deposition or an encasement thereof, as herein described. 6th. I claim the process of preparing and producing an illuminant for an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in a solution of one or more metallic compounds in which an excess of the same or other compound or compounds is or are suspended and of electrically heating it whilst therein in order to derive an encasement or deposition thereof, as herein described. 7th. I claim the process of preparing and producing an illuminant for an electric or other lamp by submerging an electric conducting and heating medium of an illuminant in one or more of the herein mentioned or indicated metallic compound or compounds in order to derive a deposition or encasement thereof, as herein described. 8th. I claim the process of preparation and production of an illuminant for electric or other lamps by submerging an electric conducting and heating medium of an illuminant in an organic compound combined or mixed with one or more of the herein mentioned inorganic compound or compounds in order to derive a deposition or encasement thereof, as indicated and herein described. 9th. I claim the process of preparing and producing an illuminant for electric and other lamps by submerging an electric conducting and heating medium of an illuminant in one or more of the herein mentioned or indicated metallic compounds in order to derive a deposition or encasement thereof, as herein described. 10th. I claim the preparation or production or both of an illuminant for an electric or other lamp by submerging two electric conducting and heating media of illuminants in one or more metallic solutions of the herein mentioned or indicated metals and causing an electric current to pass from the one acting as anode to the other acting as cathode in order to derive an encasement or deposition of a metallic compound upon one of them, as herein described. 11th. I claim the preparation and production of an illuminant for electric or other lamps by submerging two electric conducting and heating media of illuminants in one or more metallic solutions of the herein mentioned or indicated metals and electrically heating them in order to derive an encasement or encasements or deposition thereof, as herein described. 12th. I claim the preparation and production of an illuminant for an electric lamp by suspending or submerging an electric conducting and heating medium in a metallic solution formed by dissolving one or more of the aforementioned metals or oxides in organic or inorganic acids or solvents or in a solution of any salt of the same in order to derive a deposition or encasement thereof, as herein described. 13th. I claim the preparation or production or both of an illuminant for an electric lamp by saturating an electric and heating medium of an illuminant with a re-agent and then submerging it in a metallic solution formed by dissolving one or more of the aforementioned metals or oxides in organic or inorganic acids or solvents or in a solution of any salt of the same in order to derive a deposition or encasement thereof, as herein described. 14th. I claim the preparation or production or both of an illuminant for an electric lamp by submerging an electric conducting and heating medium of an illuminant in a metallic solution formed by dissolving one or more of the aforementioned metals or oxides in organic or inorganic acids or solvents or in a solution of any salt of the same and afterwards dipping it in a re-agent in order to derive an encasement or deposition thereof, as herein described. 15th. I claim the preparation or production of an illuminant for an electric lamp by submerging or suspending with or without a vacuum an electric con-

ducting and heating medium of an illuminant in or over a vaporizable metallic solution formed of one or more of the aforementioned metals or oxides or both treated with chlorine bromide or iodine or two or more of them with a volatile carbon compound and electrically heating it whilst so suspended or surrounded in order to derive an encasement or deposition therefrom as herein described. 16th. I claim the preparation and production of an illuminant for electric lamps by submerging without a vacuum or suspending an electric conducting and heating medium of an illuminant in a vacuum over a metallic solution combined and mixed with a volatile carbon compound in order to derive an encasement or deposition therefrom, as herein described. 17th. I claim the preparation or production of an illuminant for electric lamps by submerging without a vacuum or suspending an electric conducting and heating medium of an illuminant in a vacuum over a vaporizable solution formed by combining either chlorine bromide or iodine or two or more of them with one or more volatile carbon compounds such as either benzine or alcohol in order to derive an encasement or deposition therefrom, as herein described.

No. 37,608. Wire Cable. (Câble en fil de fer.)

Thomas Midgley, Beaver Falls, Pennsylvania, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. A wire cable composed of spirally wound and intermeshed helices secured together by continuous supplemental spiral coils in the intermeshed portions of the adjacent helices, substantially as described. 2nd. A wire cable composed of spirally wound, elongated and intermeshed helices secured together by continuous supplemental spiral coils in the intermeshed portions of the helices, substantially as described.

No. 37,609. Composition for Roofing, Paving, etc. (Composition pour toitures, pavés, etc.)

Joseph H. Farr and John M. Sparrow, both of Toronto, Ontario, Canada, 15th October, 1891; 5 years.

Claim.—The herein described composition of matter to be used for paving, roofing, etc., and consisting of petroleum tar mixed while hot with pine pitch, resin, or any other gummy substance, with or without slacked or powdered lime, substantially in the proportions and in the manner herein set forth.

No. 37,610. Hose Coupling and Clamp.

(Joint et agrafe de tuyau.)

William Yerdon, Fort Plain, New York, U.S.A., 15th October, 1891; 5 years.

Claim.—1st. A hose coupling band having a groove or recess in its inner face on one side of the opening and a single broad tongue extending across from the other side into said groove, so as to cover the said opening, substantially as set forth. 2nd. A double hose coupling band consisting of two bands or bars having a slot between them, but united near their ends, substantially as set forth. 3rd. A hose clamping band provided with external shoulders, in combination with an adjustable clamp bearing against the said shoulders to tighten the said clamp on the hose, for the purpose set forth. 4th. A hose coupling band provided with external shoulders, in combination with an adjusting clamp bearing against the said shoulders, and devices for holding the band in position after being tightened on the hose by the action of a vise on said adjusting clamp, substantially as set forth. 5th. An adjusting clamp for a hose coupling band consisting of two arms hinged together and provided with jaws and adapted to be held in a vise, substantially as and for the purpose set forth. 6th. A hose coupling band provided with perforated lugs and external shoulders, in combination with a pair of hinged clamping bars having jaws adapted to be forced by a vise against the said shoulders and a bolt passing through said lugs to hold the said band as thus adjusted.

No. 37,611. Speaking Tube and Indicator.

(Porte-voix et indicateur.)

Hahnemann Adolphus Cutmore, London, England, 15th October, 1891; 5 years.

Claim.—1st. In speaking tube apparatus, the combination with two or more tube terminals G, of an adjustable switch plate or disc, substantially as described and illustrated. 2nd. In speaking tube apparatus, the combination with two or more tube terminals G, and an adjustable switch plate or disc, of a mouth-and-ear-piece carrying branch, substantially as described and illustrated. 3rd. In speaking tube apparatus, the combination with two or more tube terminals G, and fixed plate F, of a rotatable plate or disc D, having recesses D', adapted to receive a spring controlled check ball E', substantially as described and illustrated. 4th. In speaking tube apparatus, the combination with two or more tube terminals G, of a switch plate or disc and a mouth-and-ear-piece carrying branch, substantially as described and illustrated. 5th. In speaking tube apparatus, the combination with two or more tube terminals G, switch plate or disc and mouth-and-ear-piece carrying branch of a signalling device, substantially as described and illustrated. 6th. In speaking tube apparatus, the combination with two or more tube terminals G, and adjustable switch plate or disc of a mouth-and-ear-carrying branch and swivel joint, substantially as described and illustrated. 7th. In speaking tube apparatus, the combination with a tube terminal G, of a hinged or pivoted door, such as H, substantially as described and illustrated. 8th. In speaking tube apparatus, the combination with a tube terminal of a door, such as H, and audible signal device, substantially as described and illustrated. 9th. In speaking tube apparatus, the combination with a tube terminal of a door, such as H, and spring H', substantially as described

and illustrated. 10th. In speaking tube apparatus, the combination with a tube terminal of a door, such as H, and indicator, such as H¹, substantially as described and illustrated. 11th. In speaking tube apparatus, the combination with a tube terminal and door, such as H, of a removable mouth-and-ear-piece carrying branch, substantially as described and illustrated. 12th. In speaking tube apparatus, the combination with a recessed tube terminal socket I, of a door H, adapted to fold back into said recess, substantially as and for the purpose described and illustrated. 13th. In speaking tube apparatus, the combination with a tube terminal and door of a mouth-and-ear-piece carrying branch and a signalling device, substantially as described and illustrated. 14th. In speaking tube apparatus, the combination with a tube terminal of a removable mouth-and-ear-piece carrying branch, such as C, C², substantially as described and illustrated. 15th. In speaking tube signal apparatus, the combination with a collapsible ball B, having a tube extension B², of a divided casing B¹, and signal carrying tube B³, substantially as described and illustrated. 16th. A signal call consisting of a free or beating reed K, so arranged as to be sounded by the puff of air sent from the distant station, substantially as described and illustrated. 17th. In a signal call, the combination with the tube B⁴, of a free or beating reed K, substantially as described and illustrated.

No. 37,612. Cutting and Preparing Wood for Ornamental and Decorative Purposes. (*Méthode de couper et préparer le bois pour ornementation et décoration.*)

Lewis Washington Murch, Medora, North Dakota, U.S.A., 15th October, 1891; 5 years.

Claim.—The method, herein described, of cutting and treating wood for ornamental and decorative purposes, which consists in cutting or sawing a log or limb, with the bark on, obliquely into blocks or pieces, the bark remaining on each block or piece, and finally shaping the blocks or pieces and removing the bark at one and the same operation, thereby avoiding the necessity of slabbing or barking the log prior to its reduction into blocks or pieces, substantially as set forth.

No. 37,613. Machine for Washing Dishes and Plates. (*Laveuse de vaisselle.*)

A. Leroy Burke, Hamilton, Ontario, Canada, 15th October, 1891; 5 years.

Claim. 1st. In a machine for washing plate, an elongated receptacle A, having its inner lower part of an obtuse angle, the supports B, the hinged lid D, having plate glass *d* inserted therein in combination with the crank J, gear wheels K and L, water distributor I, and the series of spring wire coils secured to said receptacle and attached to each other by the wire-work *c*, substantially as and for the purpose specified. 2nd. In a machine for washing plate, an elongated receptacle A, the interior metallic lower part being of concave obtuse form, provided with the adjustable spring trays E and F pivoted at F and E, the series of spiral springs C provided with spring wire-work *c* at required places in combination with the bladed water distributor I, propelled by means of the spur wheels K and L, and crank J, all formed, arranged and devised, substantially as and for the purpose specified. 3rd. In a machine for washing plate, the receptacle A, having the wheels K and L engaged in their recess, the projection *a* extending downwards to receive the faucet M, the four-bladed water distributor I, the adjustable spiral springs C, secured to the sides of the interior, the adjustable spring trays E, in combination with a hinged lid D, provided with inserted glass *d*, substantially as and for the purpose specified.

No. 37,614. Washing Machine. (*Machine à blanchir.*)

Peter Young and John Young, both of Almonte, Ontario, Canada, 15th October, 1891; 5 years.

Claim.—1st. In washing machines of the kind described, arms *d* having forks *c* securely attached thereto above the top of the body of the machine, and scrubber *f* pivotally attached to the lower end of said arms, so that said scrubber may tilt while being moved to and fro over uneven articles being washed, substantially as and for the purpose hereinbefore set forth. 2nd. In a washing machine of the kind described, a scrubbing-block having its top bearing roller surface convexly in the direction of the length of the body of the machine, the highest point or part on said convex upper surface being nearest the operator, so that, as the operator moves arms *d* and scrubber *f* forward, and arms *d* and scrubber *f* are drawn down by bar *d*, the downward circular motion given to the scrubber *f* may be met by the convex surface of the said scrubbing-block, substantially as and for the purpose hereinbefore set forth.

No. 37,615. Car Door. (*Porte de chara.*)

Andrew G. Gray, Saint John, New Brunswick, Canada, 16th October, 1891; 5 years.

Claim.—1st. The combination with a door adapted to fit into the opening in the car, of a shaft supporting the said door, and crank arms mounted to swing on the outside of the car, and carrying the said shaft, substantially as shown and described. 2nd. The combination with a door, and grooved pulleys carried by the said door, of a shaft on which the said grooved pulleys are mounted to travel, crank arms supporting the said shaft, and means substantially as described for swinging the said crank arms, substantially as set forth. 3rd. In a car door, the combination with crank arms, and a shaft supported by the said crank arms and adapted to carry the door proper, of links pivotally connected with the said crank arms, a second set of crank arms pivotally connected with the said links, and a second shaft carrying the said second set of crank arms and

mounted to turn, substantially as shown and described. 4th. In a car door, the combination with crank arms, and a shaft supported by the said crank arms and adapted to carry the door proper, of links connected with the said crank arms, a second set of crank arms pivotally connected with the said links, a second shaft carrying the said second set of crank arms and mounted to turn, and a handle formed on one of the crank arms of the second set of crank arms, substantially as shown and described. 5th. In a car door, the combination with the door proper provided with grooved pulleys, of a shaft on which the said pulleys are mounted to travel, crank arms carrying the said shaft and mounted to swing on the outside of the car, links pivotally connected with the said crank arms, a second set of crank arms pivotally connected with the said links, and a second shaft carrying the said second set of crank arms and mounted to turn on the outside of the car, substantially as shown and described. 6th. In a car door, the combination with the door proper provided with grooved pulleys, of a shaft on which the said pulleys are mounted to travel, crank arms carrying the said shaft and mounted to swing on the outside of the car, links pivotally connected with the said crank arms, a second set of crank arms pivotally connected with the said links, a second shaft carrying the said second set of crank arms and mounted to turn on the outside of the car, and an arm or handle hung on the said door and extending to the rear of the said second shaft, substantially as shown and described. 7th. In a car door, the combination with the door proper provided with grooved pulleys, of a shaft on which the said pulleys are mounted to swing on the outside of the car, links pivotally connected with the said crank arms, a second set of crank arms pivotally connected with the said links, a second shaft carrying the said second set of crank arms and mounted to turn on the outside of the car, an arm or handle hung on the said door and extending to the rear of the said second shaft, and a stop pin held on the said arm adapted to engage the said door, substantially as shown and described. 8th. In a car door, the combination with the door proper provided with grooved pulleys, of a shaft on which the said pulleys are mounted to travel, crank arms carrying the said shaft and mounted to swing on the outside of the car, links pivotally connected with the said crank arms, a second set of crank arms pivotally connected with the said links, a second shaft carrying the said set of crank arms and mounted to turn on the outside of the car, and means substantially as described for turning the second shaft, substantially as set forth.

No. 37,616. Game. (*Jeu.*)

James Carpenter, Montreal, Quebec, Canada, 16th October, 1891; 5 years.

Claim.—1st. A game comprising a field A, one or more movable objects, enclosures wherein such movable objects are temporarily held and hidden, means for detaining such objects and an open space towards one end of such field across which such objects may be propelled or allowed to travel, and a gun having a swivelling support at the opposite end of the field and furnished with suitable projectile, as set forth. 2nd. A gun for use in playing games, having a circular boss forming a projection at the outer end of and beneath the barrel so as to allow of a swivelling movement of said gun when placed within a circular opening in a support or when pressed against such support.

No. 37,617. Fire Proof Cement. (*Ciment à l'épreuve du feu.*)

Richard Judson Doyle, Sarawak, Grey, Ontario, Canada, 16th October, 1891; 5 years.

Claim.—The herein described composition of matter forming a non-flammable cement and consisting of vinegar, lime water, salt, and white vitriol, linseed or other drying oil, and dried and ground soft unctuous clay containing from twenty-five to eighty per cent of silicate, substantially in the proportions and in the manner hereinbefore set forth.

No. 37,618. Art of Making Baskets. (*Art de fabriquer les paniers.*)

William Fowler and George Fowler, both of Galt, Ontario, Canada, 16th October, 1891; 5 years.

Claim.—1st. In combination with a basket formed of wooden staves and wooden bottom, one or more double wires twisted and secured around the staves, as described. 2nd. In combination with a basket formed of wooden staves and wooden bottom, having the staves secured together at their upper ends with wire or otherwise, the wire *e*, looped around the nails at the bottom, as described.

No. 37,619. Door Bell. (*Timbre de porte.*)

Philip Mutter, Hamilton, Ontario, Canada, 16th October, 1891; 5 years.

Claim.—In a door gong or bell, the combination of the bouncing hammer B, suspended and working on a pivot E, in the case D, with the gravity lever C, spindle G, and button L, to operate said hammer B, to strike the gong A, as set forth, the gravity action being an equivalent for springs in operating the hammer B.

No. 37,620. Method of Connecting Railway Rails. (*Méthode de lier les rails de chemin de fer.*)

William Atkins, John Connor, Alexander McMullen, and George Selfridge, all of Saint John, New Brunswick, Canada, 16th October, 1891; 5 years.

Claim.—The combination of the fish plates B, with railroad rails, bolts C, having gravity heads D, nuts E, having one side resting on the flange of the rail, and washers F, all substantially as and for the purpose hereinbefore mentioned and set forth.

No. 37,621. Cremation Closet.*(Cabinet à crémation.)*

The Smead Dowd Warming and Ventilating Company of Toronto, Ontario, Canada, assignees of Isaac David Smead, Toledo, Ohio, U.S.A., 16th October, 1891; 5 years.

Claim.—1st. The method or process of treating fecal matter and the gases and odors arising therefrom, which consists first in subjecting said matter to the action of a current of air and heat, and second, in consuming or burning the odors and gases arising from said matter by conducting them into or through a fire. 2nd. A furnace for dry closets, provided with a desiccating chamber arranged to receive the deposit from one or more closets, with means, substantially as shown, for securing the passage of a continuous current of air through said chamber, and a fire chamber underneath the desiccating chamber, the said chambers being connected by pipes or flues arranged to conduct the air and gases from the desiccating chamber to the fire in the heating chamber, substantially as and for the purpose set forth. 3rd. In combination with one or more closets, a furnace arranged to receive the deposits direct from the closets, said furnace being provided with a desiccating chamber in which the deposits are subjected to the evaporative action of a continuous current of air, and a second chamber or compartment containing a fire box or grate, said chambers being connected by tubes or flues, substantially as shown and described, whereby the air for supporting combustion is made to pass through the desiccating chamber, and it, together with the gases from said chamber, is delivered to the fire in the other chamber, as set forth. 4th. In a furnace for closets having an upper desiccating chamber and a lower heating chamber, a pan arranged to receive and retain the fluids and deposits in the desiccating chamber, where they can be subjected to the joint action of the current of air passing through said chamber and of the heat in the combustion chamber, substantially as shown and described. 5th. In a furnace for closets having a separate desiccating chamber, with a pan located therein to receive and retain the deposits from the closets while being subjected to the joint action of a current of air and heat, means, substantially as shown and described, for transferring the residue from the pan to the fire chamber below. 6th. The combination, in a closet furnace, of a desiccating chamber having an air inlet at one end and an outlet for the air and gases at its opposite end, with a fire chamber arranged to heat the desiccating chamber, and having a separate outlet for the smoke and products of combustion, substantially as shown and described. 7th. In combination with a closet and a furnace constructed to operate, substantially as described, a direct draft flue connecting the desiccating chamber with the vent stack, said draft flue being provided with damper and means, substantially such as described, for operating said damper by the opening and closing of the closet lids, substantially as and for the purpose set forth. 8th. In a furnace arranged to receive the deposit from a closet, the pan or receptacle D, having its bottom inclined, substantially as shown, whereby the fluid contents are caused to accumulate at the end nearest the fire, as and for the purpose set forth. 9th. In combination with a pan or receptacle D, a scraper S, with means, substantially such as described, for moving the same to and fro therein. 10th. In combination with a furnace having a desiccating chamber connected to the fire chamber by a return flue, a direct draft flue leading from the desiccating chamber, said flue being provided with an automatically closing valve or damper arranged to be opened by the opening of either of the furnace doors, substantially as and for the purpose set forth.

No. 37,622. Method of Preserving Grain Fodder. *(Méthode de préserver le fourrage.)*

Christian Beurle, Wabring, Lower Austria, and Rudolf Ritter Von Gunesch, Vienna, Austria, 16th October, 1891; 5 years.

Claim.—The herein described method of preserving grain fodder with simultaneous reduction of its volume, consisting in cleaning and crushing the said fodder, mixing it with a suitable binding agent, such as a hydro-carbon as described, and then pressing it under great pressure into the form of cakes or tablets which are then dried.

No. 37,623. Heating Drum. *(Pötte sourd.)*

Arthur Wellington Brock and Isaac Newton Shepherd, both of Shepherd, Michigan, U.S.A., 16th October, 1891; 5 years.

Claim.—1st. In a heating drum, the combination with a vertical flue, an inlet connection therein, heating chambers connecting with the top and bottom of said flue, a damper and independent air flues in both said upper and lower chambers, substantially as described. 2nd. In a heating drum, the combination with the flues B, chambers C, D, connecting flues F, air flue G, air heating chamber H, having inlet I, and outlets J, substantially as described. 3rd. In a heating drum, the combination with the casing of flues extending through the casing, the flanges a, sleeve b, having flange c, and rivets d, substantially as described.

No. 37,624. Horse Collar. *(Collier de cheval.)*

Silas T. Marlette and Hazard J. Sheldon, both of Niagara Falls, U.S.A., 16th October, 1891; 5 years.

Claim.—1st. An improved horse collar, provided at the ends of its sides with connection-pieces C, and D, the connection D, being provided with a socket g, and a hook E, and the connection C, being provided with a projection G, to enter socket g, and with a bearing F, for engagement by the hook E, all substantially as and for the purposes set forth. 2nd. In a horse collar, the combination of the connection piece C, provided with a bearing F, the connection piece D, and the fastening bar pivoted to said piece D, and provided with a hook E, and side lugs e, substantially as set forth. 3rd. In a horse

collar, the combination of the connection piece D, having a socket g, and connection piece C, having a bearing F, and a projection G, to enter the socket g, the fastening bar pivoted to the piece D, and having a hook E, side lugs e, and handle H, and the spring catch I, all substantially as and for the purposes set forth. 4th. In a horse collar, the combination of the side pieces A, the hames, the cap piece, and the bolts hinged at their inner ends to the cap piece, extended thence outward through the hames and secured, all substantially as and for the purposes set forth.

No. 37,625. Metallic Facing for Buildings.*(Façade métallique pour bâtiments.)*

Longley Lewis Sagendorph, Philadelphia, Pennsylvania, and Charles N. Harder, Philmont, New York, both in U.S.A., 16th October, 1891; 5 years.

Claim.—1st. A metallic finishing plate made up of rectangular blocks or figures A, each of which is surrounded with a groove having therein a brad C, convex with the outer face of said blocks, for the purposes set forth. 2nd. A metallic finishing plate made up of blocks A, each block being surrounded by the angular sides and ends a, the metal between said sides and ends being formed into a corrugated brad C, as set forth. 3rd. A metallic finishing plate made up of figures A, each of which is surrounded by a beaded groove, said groove consisting of the angular sides a, acute angles B, B, and convex brad C, substantially as and for the purposes specified.

No. 37,626. Metallic Lathing.*(Lattage métallique.)*

Longley Lewis Sagendorph, Philadelphia, Pennsylvania, and Charles N. Harder, Philmont, New York, both in U.S.A., 16th October, 1891; 5 years.

Claim.—1st. A metallic lath having rectangular ribs A, across its face with apertures in the sides of said ribs, the surplus metal a, from said apertures being bent upward at an angle to the vertical sides of the ribs, as and for the purposes set forth. 2nd. A metallic lath having rectangular ribs A, to one face, with burrs or tongues a, cut and forced outward from the vertical sides b, of each rib integral therewith, for the purposes specified. 3rd. A metallic lath provided with raised ribs A, to one face, with burrs or tongues a, cut and forced outward from the vertical sides b, of said ribs, said lath having suitable apertures C, between said ribs, for the purposes set forth.

No. 37,627. Clasp for Connecting Timbers.*(Lien pour bois de construction.)*

William Henderson Gulliford, (assignee of Harold Arthur Salisbury), both of Winson, Oregon, U.S.A., 16th October, 1891; 15 years.

Claim.—1st. A clasp of the character described, consisting of upper and lower parallel horizontal stirrups and a single vertical stirrup located beneath the lower horizontal stirrup, substantially as and for the purpose specified. 2nd. A clasp of the character described, consisting of upper and lower horizontal spaced stirrups connected at their rear ends, the upper stirrup being open at the said rear end and the lower stirrup provided with a table partially closing the same, and a vertical stirrup projected downward from the rear under portion of the lower horizontal stirrup, as and for the purpose specified.

No. 37,628. Metallic Lathing.*(Lattage métallique.)*

The Metallic Roofing Company of Canada, Toronto, Ontario, assignees of George Hayes, New York, State of New York, U.S.A., 16th October, 1891; 5 years.

Claim.—1st. A metallic lath corrugated throughout and having through each slope of each corrugation a row of apertures, the metal of which is not removed from the sheet, but turned outward to one face of the lath, and with a backward bend over from the aperture, and left standing as a tongue, hook, or barb to grasp plaster, essentially as shown and described. 2nd. A metallic lath of corrugated sheet metal having within the ridges of the corrugations to one face rows of apertures, each aperture having at one side the metal turned outward in forming the aperture left standing with a backward bend from the aperture, as a tongue, hook, or barb to grasp plaster, essentially as shown and described.

No. 37,629. Metallic Lathing.*(Lattage métallique.)*

The Metallic Roofing Company of Canada, Toronto, Ontario, assignees of George Hayes, New York, State of New York, U.S.A., 16th October, 1891; 5 years.

Claim.—1st. A sheet metal lath having at intervals throughout apertures, each having a tongue or portion of the edge metal of the cuts made in the operation of forming the apertures turned outward and forward above the opening, essentially as shown and described. 2nd. A sheet metal lath having at intervals throughout apertures, each having two tongues of the edge metal bent outward in forming the aperture, the tongues raised above the plane of the sheet, and with a forward bend over the opening, so that their free ends approach each other, essentially as shown and described. 3rd. A sheet metal lath having at intervals apertures of rectangular shape, and each aperture having a portion of the metal forced or turned outward in forming the aperture standing above the plane of the sheet, with a forward bend over the aperture, essentially as shown and described. 4th. A sheet metal lath having oblong apertures at inter-

vals throughout, each aperture having two tongues of the edge metal turned outward and forward to partially cover the aperture above the plane of the sheet, and two tongues of the edge metal turned outward and backward from the opening, essentially as shown and described.

No. 37,630. Combined Gas Generator and Heater. (*Générateur à gaz et chauffeur combinés.*)

Edwin A. Doty, Lookport, New York, U.S.A., 16th October, 1891; 5 years.

Claim.—A combined gas generator and heater consisting of a boiler having a gas retort located within the boiler in such a manner that the smoke and heated gases passing from the furnace to the boiler must surround the retort, substantially as and for the purpose specified.

No. 37,631. Rotary Engine. (*Machine rotative.*)

Charles Wies, Faulkton, South Dakota, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. The herein described rotary engine, substantially as described. 2nd. In combination, a pedestal having the two pairs of induction and exhaust ports, the two cylinders into which said pairs of ports respectively open, an abutment for each cylinder, a shaft in the two cylinders having a piston head in each cylinder, the two heads being oppositely arranged. 3rd. A rotary engine comprising the two cylinders, and the single engine shaft having the oppositely arranged piston heads in said cylinders. 4th. In combination, the pedestal, the two separate cylinders, a live steam chamber in the pedestal opening into each chamber exhausts from each chamber, each chamber having a rocking abutment at the inner end of its induction port, as set forth, and the engine shaft having the piston heads in said cylinders. 5th. A rotary engine having rocking abutment between its induction and exhaust ports, and arranged to swing into a recess at the inner end of the induction port and close the same when the piston head passes. 6th. The combination of the pedestal, the two cylinders, the separating plate, cylinder heads, the shaft having the opposite piston heads, the rocking abutments and induction and exhaust ports for each cylinder. 7th. A rotary engine having the tapered ends in the stuffing boxes, and the tapered packing rings and adjusting means. 8th. A rotary engine having the steel or hard packing, blocks or rings pressed out by springs. 9th. A rotary engine having its piston heads provided with movable packing blocks in its edges pressed out by springs. 10th. A rotary engine having movable packing rings in its sides yieldingly held against the rotating disk on the engine shaft. 11th. A rotary engine having two separate cylinders, and the single engine shaft passing therethrough, and having opposite piston heads therein. 12th. A rotary engine having separate steam chambers or cylinders, and the single engine shaft having piston heads in such cylinders, whereby a continuous pressure and rotation of the shaft is produced.

No. 37,632. Hand Seed Sower.

(*Semoir à bras.*)

William L. Kling, St. Cloud, Minnesota, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. In a hand seed-planter, the combination with the case provided with slots in its sides, of the plunger provided with the inclined projection on its face, the seed-slide of less width than said slots and reciprocating therein, the spring-plate provided with a bar at its upper end for holding the seed-slide in engagement with the said projection, and the transverse rod for keeping the spring-plate and its bar in position, substantially for the purpose set forth. 2nd. In a hand seed planter, the combination, with the case provided with slots in its sides, and the plunger provided with the inclined projection on its face, of the thin plate provided with lugs for engaging with the case sides, a long notch for clearing the said projection, a thin seed-slide reciprocated above the said thin plate by the said projection, said plate and slide being removable and of less width than the slots in the case, and a removable bar for holding the said plate and slide in their working positions, substantially as set forth. 3rd. In a hand seed-planter, the combination, with a case provided with a back piece, a seed reservoir at its upper part, and slots in its sides below said reservoir, of the plunger behind the back piece, the guide-plates behind the plunger, the removable seed-slide reciprocating in said slots in the case, the plate below the seed-slide, the inclined projection on the plunger for reciprocating the seed-slide, the spring-plate provided with a bar at its upper end for retaining the removable seed-slide in gear with the said projection, and the transverse rod for holding the spring-plate in position with its lower edge pressing against the lower guide-plate below the raised plunger, substantially as and for the purposes set forth.

No. 37,633. Mower. (*Faucheuse.*)

Robert H. Dixon, Stillwater, Minnesota, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. A mower frame supported on the driving wheels, a rocking coupling piece pivoted to said frame, substantially in line with the finger bar and provided with longitudinal and transverse bearings for the shafts of the knife operating gearing, said gearing being driven by connection made outside the pivot of said coupling piece to the main frame, and a finger bar pivoted to the inner end of the coupling piece, whereby the finger bar can be raised vertically and tilted upward and downward in unison with the knife operating gearing, substantially as described. 2nd. In a mowing machine, the combination of a rocking coupling piece pivoted to the

mower frame, substantially in line with the finger bar, said rocking coupling piece provided with bearings for the knife operating gearing, and a finger bar pivoted to the inner end of said coupling piece, said gearing located on the end of the coupling piece outside of the pivot of said coupling piece to the mower frame and opposite the finger bar, whereby the weight of the gearing shall operate to counterpoise the weight of the finger bar, operating substantially as set forth. 3rd. In a mowing machine, the combination of a frame supported on the driving wheels, a rocking coupling piece pivoted to said frame, substantially in line with the finger bar, said pivot placed between the two ends of the coupling piece and adapted to permit of a vertical and rocking movement of the ends of said coupling piece, on the outer end of which is located the knife operating gearing, and to the inner end the finger bar is pivoted, whereby the finger bar can be raised and tilted in unison with the coupling piece, substantially as specified. 4th. The combination of the mower frame A, the rocking coupling piece A', pivoted to said frame substantially in line with the finger bar, the knife operating gearing located on said coupling piece outside the pivot to the frame A, the push bar E, pivoted to the frame and rocking coupling piece A', the finger bar C, pivoted to the coupling A', and a lifting and a tilting device whereby the finger bar can be lifted and tilted in unison with the knife operating gearing, substantially as set forth. 5th. In a mowing machine, the combination of the frame A, the rocking coupling piece A', pivoted thereto substantially in line with the finger bar, the longitudinal shaft D', on which are the sprocket wheels K', and bevel gear L, provided with bearings on the outer end of said coupling piece, and the transverse shaft M', on which are the bevel pinion M, and the crank wheel M', provided with transverse bearings in proper relation to said longitudinal shaft and gearing, the sprocket wheel K, and driving chain K', the whole operating to drive the knife and to permit the finger bar and coupling piece with its superimposed gearing to tilt in unison, substantially as set forth.

No. 37,634. Thermo Electric Generator.

(*Générateur thermo-électrique.*)

Harry Barringer Cox, Hartford, Connecticut, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. In a thermo electric generator, the combination with the fire pot, or furnace open at the top, of a cylindrical thermo pile around and extending above the open top of said fire pot forming an upward continuation of the same, so that the heat is applied direct to the elements of the pile. 2nd. A thermo pile consisting of couples secured together having their inner ends or surface with which the heat comes in contact coated with fireproof substance, as set forth. 3rd. In a thermo electric generator, the combination of the fire pot, the cylindrical thermo pile extending up from the same and provided with an exit at the top, and a vertical series of horizontal circular deflectors located in said pile above the fire pot, the deflectors of said series increasing in diameter upwardly, for the purpose set forth. 4th. In a thermo electric generator, the combination with the hollow thermo pile, a furnace at one end of the same of which the pile forms a continuation, and a water jacket surmounting the exterior of the pile, substantially as described. 5th. A thermo pile enclosing a vertical heating chamber, a source of heat at the bottom of said chamber, and a series of deflectors in said chambers arranged therein so as to evenly distribute the heat throughout the length of the pile, as and for the purpose set forth.

No. 37,635. Steam Generator.

(*Générateur à vapeur.*)

Darwin Almy, Providence, Rhode Island, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. In a steam generator, the combination with a water chamber connected by pipes with the steam chamber and exposed to the heat of the furnace, of a steam dome connected with the steam space by a spiral passage ending in a central space opening into a horizontal cylinder below the steam dome, and connections between the said horizontal cylinder and the water chamber below the furnace constructed to separate the steam from the water, as described. 2nd. In a steam generator, the combination with the manifold 6 and manifold 17, of the pipes 7, 8, 19, 21, 23, and 24, constructed to form a loop extending over the furnace, as described. 3rd. In a steam generator, the combination with the manifold 6 and manifold 17, and the side pipes formed in a loop and extending over the furnace and connected with both manifolds, of the rear pipes 9, 10, 25, 26 and 27, connected with both manifolds, the steam dome 30, and the horizontal cylinder 34, connected with the manifold 6, as described. 4th. In a pipe steam generator, the combination with a water chamber below the furnace, a steam chamber and pipes connected with both the water and steam chambers, a steam and water separator connected with the steam space and with the water chamber, of the check valve 12, constructed to close the inlet, as and for the purpose described. 5th. In a steam generator, the combination with the manifold 6 and manifold 17, the side pipes formed in a loop extending over the furnace and connected with both manifolds, the end pipes connected with the horizontal pipes 25, 26 and 27, and with the front of the manifold, the steam and water separator connected with the manifold 17 and the manifold 6, of the feed water heater consisting of the pipes 35, connected together and with the rear end of the manifold 6, as described. 6th. The combination with the manifold 6 and manifold 17, of the pipes 7, 8, 19, 21, 23 and 24, constructed to form the sides of the furnace an extending over the same, the pipes 9, 10, 25, 26 and 27 connected with the rear water space and with the front steam space, the pipes 37, 38, 41 and 29, connected with the water space, and the steam dome 3', provided with the spiral passage 31, and connected with the upper and lower manifolds, as described. 7th. The combination with the steam space of a pipe steam generator of a steam dome connected with the steam and water chambers, the spiral passage 31, the projecting partition 32, and water outlet 33, constructed to separate the water from the steam, as described. 8th. In a steam generator, the combination

with the water and steam chambers, of the pipes 7, 8, 19, 21, 23 and 24, the pipes 9, 10, 25, 26 and 27, the pipes 37, 38, 41 and 29, the steam dome 30, the horizontal cylinder 34, and connections 35, 36 and 11, as described. 9th. The combination with the manifold 6, the manifold 17, the side pipes extending over the furnace in a loop, the rear pipes connected with the pipes 25, 26 and 27, and with the front of the manifold 17, the steam dome 30, the horizontal cylinder 34, connected with the manifold 6, and the sediment chamber 13, provided with the blow-off pipe 14, as described.

No. 37,636. Fish Trap. (*Parc de mer.*)

Milo Covell, Chicago, Illinois, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. The combination with a seine or drag net, of a trap, connected thereto, and the contracted passages, leading into the trap from said seine, substantially as and for the purpose set forth. 2nd. The combination with a seine or drag net, of one or more bags, connected thereto, the contracted communicating passages therebetween, and a bottom apron like extension attached to and moving in advance of said seine, substantially as and for the purpose set forth. 3rd. The combination with a seine or drag net, of a trap or traps, attached to the rear part of the seine, the communicating passages, and the floating tenders or boats, connecting with the respective ends of said seine, and provided with means for handling the same, substantially as and for the purpose set forth. 4th. A fish trap, seine or drag net, provided with a safety or snag line, connected therewith by weights or shoes C, and provided with an apron E², and a bag or trap E, and funnel shaped passage ways F, leading into such bag or trap, in combination with a tender and means for propelling the same, as and for the purpose set forth.

No. 37,637. Process of Manufacturing Moulded Articles. (*Procédé de fabrication d'objets moulés.*)

Ludwig Grote, Dresden, Germany, 17th October, 1891; 5 years.

Claim.—In the manufacture of moulded or turned articles of paper, the process of intimately mixing the paper pulp, with a paste made from 1 part of starch, water glass, and 5 to 20 parts of a suitable fatty substance, subsequently moulding or turning the mass and finally dipping it in a solution of 25 parts of sugar, 10 parts of slacked lime, and 65 parts of water, substantially as described.

No. 37,638. Water Heater. (*Calorifère à eau.*)

The Consolidated Car Heating Company, (assignees of James Finney McElroy), all of Albany, New York, U.S.A., 17th October, 1891; 5 years.

Claim.—1st. In a car heating apparatus, of the kind described, a water heater located outside the car, and the steam supply pipe in contact therewith, substantially as described. 2nd. In a car heating apparatus of the kind described, a water heater located outside the car, a steam chamber formed in said heater, and the steam supply pipe connected with said steam chamber, substantially as described. 3rd. In a car heating apparatus, of the kind described, a water heater, located outside the car, a steam chamber formed in said heater, a steam supply pipe connected with said steam chamber, and the overflow pipe in contact with said steam chamber, substantially as described. 4th. In a car heating apparatus, of the kind described, the combination with the water heater located outside the car, the chambers i, and j, in said water heater, and the pipes F¹, and D, connected with said chamber, substantially as described.

No. 37,639. Portable Plaster Slab and Mold Therefor. (*Barre et moule portatifs pour plâtrer.*)

Thomas Curran, New York, State of New York, U.S.A., 20th October, 1891; 5 years.

Claim.—1st. The mold for making grooved portable slabs or sections of plaster for walls, ceilings, etc., which consists in a flexible frame and molding sheet provided with longitudinal ribs, as and for the purposes set forth. 2nd. A mold for making grooved portable plaster slabs, which consists in a frame for containing the plaster, a flexible molding sheet provided with raised ribs inserted in the face thereof, said ribs being removable on their edges so as to produce dove tailed grooves or openings in the plaster slab, as and for the purposes set forth. 3rd. The method of making grooved portable plaster slabs, which consists in introducing the plaster while in a plastic form into a molding frame having at the bottom thereof a flexible molding sheet provided with raised ribs and after said plaster is hardened of removing the said flexible molding sheet, as set forth.

No. 37,640. Air Tube for Preserving Fruits and Vegetables. (*Tuyau à air pour préserver les fruits et végétaux.*)

Adam Lloyd Bayley, North Sydney, Nova Scotia, Canada, 20th October, 1891; 5 years.

Claim.—In a barrel box or receptacle for the transport of fruit or other perishable substances, the perforated tube Q, having perforations a, as shown and described for the purposes set forth.

No. 37,641. Button Hole Sewing Machine.

(*Machine à coudre les boutonnières.*)

Arthur Helwig, Kentish Town, County of London, England, 20th October, 1891; 5 years.

Claim.—1st. For a button hole sewing machine, a looper having two oppositely arranged hooks 5, and 6, adapted when said looper is

oscillated or reciprocated as set forth, to engage alternately with loops formed by the needle in the manner and for the purpose specified. 2nd. In a button hole sewing machine, the combination with a needle having both an endways movement, and a swinging or side to side movement for sewing with a single thread, and mechanism for imparting these movements to said needle, of a looper having two oppositely arranged hooks adapted to engage alternately with loops formed by said needle, and mechanism for imparting to said looper movements in directions at right angles to each other or approximately so, substantially as herein described for the purpose specified. 3rd. In a button hole sewing machine, the combination with a needle having both an endways movement, and a swinging or side to side movement for sewing with a single thread, and mechanism for imparting these movements to said needle, of a looper having two oppositely arranged hooks, a lever carrying said looper, means for oscillating said lever and looper in a plane transverse to the direction in which said needle reciprocates, and means for periodically imparting an endways motion to said lever and looper, substantially as herein described for the purpose specified. 4th. In a button hole sewing machine, the combination with a needle having both an endways movement, and a swinging or side to side movement for sewing with a single thread, and mechanism for imparting these movements to said needle, of a looper having two oppositely arranged hooks, a lever carrying said looper and pivoted by a pin and slot connection to the underside of the machine bed, a reciprocating rod jointed to said lever, means for reciprocating said rod, a second lever jointed to said looper lever by a pin and slot connection, and means for periodically oscillating said second lever, substantially as herein described for the purpose specified. 5th. In a button hole sewing machine, the combination with a needle having both an endways movement, and a swinging or side to side movement for sewing with a single thread, and mechanism for imparting these movements to said needle, of a looper 4, having oppositely arranged hooks 5 and 6, a lever 7, carrying said looper and jointed to the underside of the machine bed by a pin and slot connection, a sliding rod 13, carrying an extension 12, a link connecting said lever and extension, a rotary plate 15a, formed with a cam groove 15, for reciprocating said rod, a lever 22, connected at one end by a pin and slot connection to said lever 7, a rotary plate formed with cam projections 26a, and 26b, adapted to move said lever 22, in one direction, a spring 25, to move said lever 22, in the opposite direction, and a shaft 20, driven from the driving shaft of the machine and to which said cam plates are secured, substantially as herein described for the purposes specified.

No. 37,642. Method of Obtaining and Treating Primary Battery Fluids. (*Méthode d'obtenir et traiter les fluides de pile électrique.*)

Joseph Brown Gardiner, Wyach, New York, U.S.A., 20th October, 1891; 5 years.

Claim.—1st. The method comprising the following steps, separating a salt into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained in a battery fluid, treating the "spent" depolarizing fluid so as to recover the metal consumed, and combining the remainder of the "spent" depolarizing fluid with the unused part of the salt obtained in the first step. 2nd. The method comprising the following steps, separating a salt into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination with an acid or acid salt in a battery fluid, treating the "spent" depolarizing fluid so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" depolarizing fluid with the unused part of the salt obtained in the first step. 3rd. The method comprising the following steps, treating a salt with an acid so as to separate it into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination with an acid or acid salt in a battery fluid, treating the "spent" depolarizing fluid so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" depolarizing fluid with the unused part of the salt obtained in the first step, to recover the original salt employed. 4th. The method comprising the following steps, treating a salt with an acid so as to separate it into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination, with an acid or acid salt in a battery, treating the "spent" depolarizing fluid with an alkali, alkali carbonate or alkali salt, so as to recover the metal employed, or the oxide of that metal, and combining the remainder of the "spent" depolarizing fluid with the unused part of the salt obtained in the first step to recover the original salt employed. 5th. The method comprising the following steps, treating a salt with an acid so as to separate it into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" depolarizing fluid with an alkali, alkali carbonate or alkali salt, drying and igniting, and treating so as to recover the metal employed, or the oxide of that metal, and combining the remainder of the "spent" depolarizing fluid with the unused part of the salt obtained in the first step, to recover the original salt employed. 6th. The method comprising the following steps, treating a chromate of lead, or other chromate, with an acid, so as to separate it into two parts, one of which contains chromic acid, using the chromic acid thus obtained alone or in combination with an acid or acid salt in a battery fluid, treating the "spent" chromic acid so as to recover the metal employed, or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the unused part of the chromate of lead or other chromate obtained in the first step, to recover the original chromate of lead or chromate employed. 7th. The method comprising the following steps, treating a chromate of lead or other chromate with an acid so as to separate it into two parts, one of which contains chromic acid, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" chromic acid

with an alkali, alkali carbonate or alkali salt, so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the unused part of the chromate of lead or other chromate obtained in the first step to recover the original chromate of lead or chromate employed. 8th. The method comprising the following steps, treating a chromate of lead or other chromate with an acid so as to separate it into two parts, one of which contains chromic acid, using the chromic acid thus obtained alone or in combination with an acid or acid salt in a battery fluid, treating the "spent" chromic acid with an alkali, alkali carbonate or alkali salt, drying and igniting, and treating so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the unused part of the chromate of lead or other chromate obtained in the first step to recover the original chromate of lead or other chromate employed. 9th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt in a battery fluid, treating the "spent" chromic acid so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the sulphate of lead or other sulphate obtained in the first step, in order to recover the original chromate of lead or other chromate employed. 10th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid, and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" chromic acid with an alkali, alkali carbonate or alkali salt, so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the sulphate of lead or other sulphate obtained in the first step, in order to recover the original chromate of lead or other chromate employed. 11th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid, and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" chromic acid with carbonate of potash, so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the sulphate of lead or other sulphate obtained in the first step, in order to recover the original chromate of lead or other chromate employed. 12th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" chromic acid with carbonate of potash, drying, igniting and treating so as to recover the metal employed or the oxide of that metal, and combining the remainder of the "spent" chromic acid with the sulphate of lead or sulphate obtained in the first step, in order to recover the original chromate of lead or other chromate employed. 13th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, treating the "spent" chromic acid with carbonate of potash, drying, igniting and treating so as to recover the metal employed or the oxide of that metal, combining the remainder of the "spent" chromic acid with the sulphate of lead or other sulphate obtained in the first step, to recover the original chromate of lead or other chromate employed, and to leave sulphate of potash as a residuum, and finally precipitating the sulphate of potash with carbonate of lime, to obtain sulphate of lime and carbonate of potash. 14th. The method comprising the following steps, treating a chromate of lead or other chromate with sulphuric acid so as to separate it into two parts, one containing chromic acid and the other sulphate of lead or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or an acid salt, in a battery fluid, treating the "spent" chromic acid with carbonate of potash, drying, igniting and treating so as to recover the metal employed or the oxide of that metal, combining the remainder of the "spent" chromic acid with the sulphate of lead or other sulphate obtained in the first step, to recover the original chromate of lead or other chromate employed, and to leave sulphate of potash as a residuum, and finally precipitating the sulphate of potash with carbonate of lime, to obtain sulphate of lime and carbonate of potash. 15th. The method of recovering the zinc consumed in a primary battery, consisting of combining the "spent" depolarizing fluid with an alkali, alkali carbonate, or alkali salt, drying, igniting and separating out the zinc or its oxide. 16th. The method of recovering the zinc consumed in a primary battery, consisting of combining the "spent" depolarizing fluid with carbonate of potash, drying, igniting and separating out the zinc or its oxide. 17th. The method of recovering the zinc consumed in a chromic acid battery, consisting of combining the "spent" chromic and other acids with carbonate of potash, drying, igniting and separating out the zinc or its oxide. 18th. The method comprising the following steps, treating a salt with an acid, so as to separate it into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination with an acid or acid salt, in a battery fluid, and treating the "spent" depolarizing fluid with an alkali, alkali carbonate or alkali salt, or with the unused part of the salt obtained in the first step, and separating out the metal employed or the oxide of the metal, to recover the original salt employed. 19th. The method comprising the following steps, treating a salt with an acid, so as to separate it into two parts, one of which contains the depolarizing element, using the depolarizing element thus obtained alone or in combination with an acid or acid salt, in a battery fluid, and treating the "spent" depolarizing fluid with an alkali, alkali carbonate or alkali salt, or with the unused part of the salt obtained in the first step, drying and igniting, and separating out the metal employed or the oxide of that metal, to recover the original salt employed. 20th. The method comprising the following steps, treating a chromate of lime, or other alkali chromate,

with an acid, so as to separate it into two parts, one of which contains chromic acid, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, and treating the "spent" chromic acid with an alkali, alkali carbonate or alkali salt, or with the unused part of the chromate of lime or other alkali chromate obtained in the first step, and separating out the metal employed, or the oxide of that metal, to recover the original chromate of lime or other chromate employed. 21st. The method comprising the following steps, treating a chromate of lime or other alkali chromate with sulphuric acid, so as to separate it into two parts, one of which contains chromic acid, and the other sulphate of lime or other sulphate, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, and treating the "spent" chromic acid with an alkali, alkali carbonate, or alkali salt, or with the sulphate of lime or other sulphate obtained in the first step, and separating out the metal employed, or the oxide of that metal, to recover the original chromate of lime or other chromate employed. 22nd. The method comprising the following steps, treating a chromate of lime with sulphuric acid so as to separate it into two parts, one of which contains chromic acid and the other sulphate of lime, using the chromic acid thus obtained alone or in combination with an acid or acid salt, in a battery fluid, and treating the "spent" chromic acid with carbonate of lime, drying and igniting, and separating out the metal employed, or the oxide of that metal, to recover the chromate of lime originally employed.

No. 37,643. Method of Manufacturing Fuel and of Obtaining Tar Products from Coal Slack and Similar Substances. (*Fabrication de combustible et méthode d'obtenir les produits du goudron des agglomérés combustible de charbon et autres substances similaires.*)

John Bowling, Tilbury, Essex, England, 20th October, 1891; 5 years.

Claim.—1st. Effecting the mixture of coal or coke or lignite or other similar substances and tar, shale oils or other similar substances, by treating the coal or other similar substances, when wet and in the presence of tar or other similar substance, to the action of steam, substantially as described. 2nd. The recovery of the products from tar, shale oil and similar substances by passing steam through a wet mixture of coal, coke or lignite or other similar substance and tar, shale oil or other similar substance, substantially as described.

No. 37,644. Boarded and Wainscoted Ceiling. (*Lambris de plafond.*)

Friedrich Wilhelm Adels, Oldenburg, Duchy of Oldenburg, German Empire, 20th October, 1891; 5 years.

Claim.—The hereinbefore described method of producing ceiling and wall coverings, consisting in the production of the pattern from separate single panels, the mouldings or edge bands of which are grooved and in the grooves are fitted leathers or keys, the whole being held together by means of screws *c* and washers *d*, and can be finished, decorated and painted before hand in the workshop.

No. 37,645. Pulley and Bracket for Clothes Lines. (*Poulie et support pour lignes d'étendage.*)

Oscar Lund, Long Island City, State of New York, U.S.A., 20th October, 1891; 5 years.

Claim.—1st. The combination with the pulley block or frame of its supporting bracket, the said pulley block and supporting bracket being provided, the one with pintles and the other with sockets in which the pintles may be removably seated, substantially as set forth. 2nd. The combination with the pulley block or frame provided with ears projecting from its sides, of a bracket or support provided with flanges or ears projecting outwardly from its back, the said flanges or ears being provided with sockets, and pintles extending laterally from the ears on the block and removably secured in the sockets in the supporting bracket, substantially as set forth.

No. 37,646. Composition for the Manufacture of Journal Bearings, etc. (*Composition pour la fabrication des coussinets de tourillon.*)

Philip Henry Holmes, Gardiner, Maine, U.S.A., 20th October, 1891; 15 years.

Claim.—A molded and hardened composition for bearings, etc., and consisting essentially of plumbago, wood or other vegetable fiber, and a drying oil, the plumbago being in excess, substantially as described.

No. 37,647. Centrifugal Liquid Separator.

(*Séparateur centrifuge de liquide.*)

Philip M. Sharples, West Chester, Pennsylvania, and David Townsend Sharples, Elgin, Illinois, both in U.S.A., 21st October, 1891; 5 years.

Claim.—1st. The improvement in the process of creaming milk by centrifugal force, which consists in increasing the temperature of the portion of the liquid in the rotating separator vessel which is farthest from the centre of rotation, substantially as and for the purpose set forth. 2nd. The improvement in the process of cream-

ing milk by centrifugal force, which consists in heating the wall of the separator vessel during its operation, whereby the heavier outer portion of the liquid is made warmer than the lighter inner portion, substantially as and for the purpose set forth. 3rd. The method of operating centrifugal separators by means of a jet, as of steam, acting directly upon the vessel to be rotated, substantially as and for the purpose set forth. 4th. The method of operating centrifugal liquid separators, which consists in suspending the separator vessel, substantially as described, and rotating the same by means of a steam jet or jets operating upon said vessel on the same horizontal plane as the centre of suspension, substantially as set forth. 5th. In a centrifugal machine, a separator vessel suspended at the centre of gravity of the loaded vessel upon a fixed bearing, in combination with the means for applying rotating power at the periphery of said vessel, substantially as set forth. 6th. In a centrifugal machine, the combination with the casing provided with an exhaust outlet or outlets, and with the receptacle supported thereon, of a separator vessel suspended within said casing and provided with a series of peripheral projections located above said exhaust outlet and arranged at an angle to the axial plane, substantially as described, and a nozzle arranged to direct a jet, as of steam, against said projections, substantially as set forth. 7th. In a centrifugal machine, the separator vessel suspended upon a fixed bearing, in combination with means for applying rotating power to the periphery of said vessel upon the same horizontal plane as the centre of suspension, substantially as set forth. 8th. In a centrifugal separator, the combination with a suspended rotary vessel operated directly by steam, substantially as described, of a casing provided with a central exhaust outlet, as a^1 , and an intermediate perforated plate forming an exhaust chamber b^1 , and a central support, as b , for said vessel substantially as set forth. 9th. In a centrifugal machine, the combination with a suspended separator vessel and a steam nozzle located at the periphery thereof, substantially as described, of a casing provided with an exhaust outlet below said vessel, liquid receptacles supported on said casing above said nozzle, and a non-conducting annular partition, as h , between said nozzle and receptacles, substantially as set forth.

No. 37,648. Process of Manufacturing Heating and Illuminating Gases.
(*Procédé de fabrication du gaz de chauffage et d'éclairage.*)

Thomas Littlehales, Hamilton, Ontario, Canada, 21st October, 1891: 5 years.

Claim.—The art or process of making a heating and an illuminating gas by the chief agency of pure or practically pure oxygen, in a simplified form, wherein the stream of oxygen itself generates the heat for continuous gas making, and forms a portion of the body or bulk of the gas itself, and at the same time generates sufficient continuous heat k , decompose steam, the products of which also enters into and forms a portion of the body or bulk of the gas, or in other words, using a gas to make a gas, substantially as and for the purpose specified.

No. 37,649. Surgical Chair.
(*Chaise de chirurgie.*)

Aaron P. Gould, Canton, Ohio, U.S.A., 21st October, 1891: 5 years.

Claim.—1st. In combination, a tilting back section, a seat section having a swinging movement independent of its tilting support, a swinging leg rest section, connections between the back seat and leg rest sections which communicate the movements on the back section to the seat and leg rest sections, and a support common to the several sections and having a tilting movement backward of a vertical line, substantially as set forth. 2nd. In combination, a tilting back section, a seat section having a swinging movement independent of its tilting support, a swinging leg rest section, connections between the back seat and leg rest sections which communicate the movements of the back section to the seat and leg rest sections to throw the several sections into substantially a horizontal plane, and a support common to the several sections and having a horizontally rotary adjustment and a forwardly and backwardly tilting adjustment, the backward tilt extending backward of a vertical line, substantially as set forth. 3rd. In combination, a tilting back section, a seat section having a swinging movement independent of its tilting support, a swinging leg rest section, connections between the back section and the seat and leg rest sections, which communicate the movements of the back section to the seat and leg rest sections, a swinging frame for adjusting the seat section, a swinging frame actuating device independent of the back section, and the support common to the several sections and having a horizontally rotary adjustment and a forwardly and backwardly tilting adjustment, substantially as set forth. 4th. In combination, a tilting back section, a seat section having a swinging movement independent of its tilting support, a connection between the back and seat sections through which the back section controls the movements of the seat section, and a support common to the two sections and having a tilting adjustment backward of a vertical line, substantially as set forth. 5th. In combination, a tilting back section, swinging seat and leg rest sections controlled in their movements by the back section, and a support common to the several sections and having a horizontally rotary adjustment, a forwardly and backwardly tilting adjustment, and a vertical adjustment, substantially as set forth.

No. 37,650. Hinge. (*Penture.*)

Jonathan D. Davis, Bridgeport, Connecticut, U.S.A., 21st October, 1891: 5 years.

Claim.—1st. A flush hinge formed of a pair of plates, a connecting piece hinged to one of the plates and arranged to slide in a slot formed in the other plate in a plane parallel with the face thereof, and lugs projecting from one plate at opposite edges and near op-

posite ends and entering recesses in the other plate, substantially as specified. 2nd. A flush hinge, comprising two plates fitted for attachment to the parts to which the hinge is to be applied, one plate being provided with notches in opposite edges and the other with a recess in its rear face, and a connecting plate pivoted in one of the notches of one plate, sliding in the recess of the other plate, and having an outwardly bent end, substantially as described. 3rd. In a flush hinge, the combination of the plate A , having ears a, a , the plate C , the recessed plate D , the angled plate B , adapted to slide in the recess of the plate D , and pivoted between the ears a, a , and the spring F , placed between the plate D , and angled plate B , substantially as specified. 4th. In a flush hinge, the combination of the plate A , having ears a, a , the plates C, D , and the pivoted spring pressed plate B , substantially as specified.

No. 37,651. Dog for Work Benches.
(*Clameau d'établi.*)

Luigi d'Auria, Philadelphia, Pennsylvania, U.S.A., 21st October, 1891: 5 years.

Claim.—1st. In a bench dog, the use of a dog of any suitable form adapted to revolve in such manner that it may be projected to a greater or less extent above the face of the work bench or be brought flush therewith, or dropped slightly below said face. 2nd. A bench dog comprising a cylinder having biting edges or teeth, and adapted to revolve eccentrically on or in bearings, in combination with a suitable support adapted to be secured to the work bench. 3rd. A bench dog, comprising a cylinder having formed on one or both faces, a peripheral biting or holding edge or teeth, suitable bearings on or in which said dog is adapted to revolve eccentrically and on or in which it is adapted to be held in any desired position by friction or otherwise, in combination with a suitable support adapted to be secured to the work bench. 4th. A bench dog, consisting of a cylinder provided on one or both faces with a biting or holding edge, or teeth, a spindle upon which said dog is adapted to revolve eccentrically, said spindle being saw threaded at one end, a support provided with bearings for said spindle and adapted to be secured to the work bench, and a locking nut fitted upon the screw-threaded portion of the spindle to lock the dog into any desired position thereon, as set forth.

No. 37,652. Portable Fence. (*Clôture portative.*)

Charles Edward Harris, Winnipeg, Manitoba, Canada, 21st October, 1891: 5 years.

Claim.—1st. A main post for portable fences, consisting of a bed beam, a plate or block attached transversely to the bed beam and having slots produced near its ends, and apertures between the series of slots, and a body section secured to the plate or block and bed beam, having recesses near its upper end, as and for the purpose specified. 2nd. A main post for portable fences, consisting of a bed beam, a plate or block attached transversely to the bed beam and having slots produced near its ends, and apertures between the series of slots, and a body section, secured to the plate or block and bed beam and provided with a cover plate at said end containing apertures registering with the recesses, and a movable cap plate covering the apertures, as and for the purpose set forth. 3rd. A post for portable fences, consisting of a bed beam having inwardly beveled ends, diagonal apertures near said ends, a plate or block transversely secured to the beam and provided with slots near opposite ends, a body section secured to the block or plate and bed beam, the said body section being provided at its upper end with a series of recesses, a plate covering the said end, having apertures produced therein registering with the recesses, and an angular movable cap secured upon the plate and covering said apertures, as and for the purpose set forth. 4th. In a portable fence, the combination with a post, the body portion whereof has attached to its lower end a plate or block provided with a series of slots and the upper end of the post body being provided with a series of recesses, of a fence section or panel, the end post or rail whereof is provided with a tongue adapted to enter one of the slots in the plate or block and with a recess in its upper end, and a staple, one member of which is made to enter the recess in the post and the other member the recess in the end rail or post of the panel, as and for the purpose specified. 5th. In a portable fence, the combination, with a post consisting of a bed beam, a plate secured to the bed beam, having slots near its ends and apertures between the series of slots, and a body section attached to the plate provided with recesses in its upper end, the plate attached to said end having apertures registering with the recesses, and a movable cap covering the apertures in the plate, of a fence section or panel, the inner post or rail whereof is adapted to enter one of the slots in the plate or block and provided at its upper end with a recess, and a staple, one member of which is entered into the recess of the panel post and the other member in a recess of the main post, as and for the purpose specified.

No. 37,653. Feed Box for Horses and Cattle.
(*Crèche pour chevaux et bestiaux.*)

James Flurey and Arthur O'Leary, both of Lindsay, Ontario, Canada, 21st October, 1891: 5 years.

Claim.—The combination feed box consisting of the compartment B , the feed box A , connected therewith, the grate C , having an inside, all formed arranged and combined as and for the purpose hereinbefore set forth.

No. 37,654. Clothes Drying Reel.
(*Rouet à sécher le linge.*)

William James Coulter, Chesley, (assignee of John E. Merriam, Harristown), both in Ontario, Canada, 21st October, 1891: 5 years.

Claim.—The combination with the clothes reel, comprising the hub or spindle B , the arms A , and braces C , for carrying clothes

drying lines or wires, and pivoted to rotate on the top of a supporting stem E, of the guide posts F, E, and connecting strips H, H, the lever J, pivoted at one end to near the top of said stem, and the lever K, pivoted at one end to one of the posts F, and the other end to lever J, as set forth.

No. 37,655. Fire Place. (*Foyer.*)

George Randolph Scates and Elbert S. Rogers, both of Knoxville, Tennessee, U. S. A., 21st October, 1891; 5 years.

Claim.—1st. In a double fire place, the combination with the wall between two rooms and the chimneys in said rooms, all being provided with a single transverse opening, of a hot air chamber H, supported by the supporting plates P, at the top of said opening, registers R, in the ends of said chamber, projections Y, in its top communicating through the hot air flues with the rooms above, a base plate A, resting upon the hearths and having an opening O', beneath the similar opening O, in the bottom of the air chamber and above a cold air chamber a, main side plates M, secured to the sides of the opening through the wall and standing across the edges of said openings O, and O', fire back pieces B, standing across the ends of said openings and forming a vertical air passage, side plates S, beneath the sides of said hot air chamber and detachably connected to the edges of said main plates, a grate G, in each fire place thus formed, front plates N, tubular pipes T, through said hot air chamber above each fire place and communicating with a flue in each chimney, a damper D, in each of said pipes, and a handle d, therefor extending through said front plate, substantially as described. 2nd. In a double fire place, the combination with the wall between two rooms and the chimneys in said rooms, all being provided with a single transverse opening, of a hot air chamber H, supported by supporting plates P, at the top of said opening, registers R, in the ends of said chamber, projections Y, in its top communicating through the hot air flues with the rooms above, the bottom of said hot air chamber having an opening O, above a cold air chamber a, located between the two hearths, main plates M, secured to the sides through the opening of the wall beneath said opening O, fire back pieces B, connecting the edges of said main plates and thereby forming a vertical air passage, side plates S, at the sides of said fire back pieces, detachably connected to the edges of said main plates, a grate G, in each fire place thus formed, front plates N, tubular pipes T, through said hot air chamber above the fire places, each communicating with a flue in its chimney, a damper D, in each of said pipes, and a handle d, therefor extending through the said front plate, substantially as described. 3rd. In a double fire place, the combination with the wall between two rooms, and the chimneys in said rooms, all being provided with a single transverse opening, of a hot air chamber H, supported by supporting plates P, at the top of said opening registers R, in the ends of said chamber, its top being provided with holes communicating through hot air flues with the rooms above, and its bottom at the center being provided with a cold air opening O, fire back pieces B, standing across said opening in the wall and beneath the ends of said opening O, in the hot air chamber, thus forming the vertical air passage between them, side plates S, at the sides of said fire back pieces, a grate G, in each fire place thus formed, front plates N, tubular pipes T, through said hot air chamber above the fire places, each communicating with a flue in its chimney, and a damper in each of said pipes, substantially as described. 4th. In a double fire place, the combination with the wall between two rooms and the chimneys in said rooms, all being provided with a single transverse opening of a hot air chamber H, supported by the supporting plates P, at the top of said opening, registers R, in the ends of said chamber, the latter being provided with a cold air opening O, in its bottom, and with holes communicating through hot air flues with the rooms above, a fire place beneath each end of the hot air chamber, each fire place comprising a vertical fire back B, removable side plates S, and a grate between said plates, the tubular pipes T, through said hot air chamber above the fire places and communicating with flues in the chimneys, and dampers in each of said pipes, substantially as described. 5th. In a double fire place, the combination with the wall between two rooms, and the chimneys in said rooms, all being provided with a single transverse opening, of brick supporting plates P, and P', across the ends of said opening near its top, a hot air chamber H, removably inserted between said plates and provided with holes communicating through hot air flues with the rooms above and also with a cold air opening O, registers R, in the ends of said chamber, tubular pipes T, through said chamber near its ends, the upper end of each pipe communicating with a flue in its chimney, a damper in each pipe, a fire place substantially as described, beneath each end of the chamber, and a front plate of any preferred construction in each room and covering one end of said chamber, as set forth. 6th. In a double fire place, the combination with the wall between two rooms and the chimneys in said rooms, all being provided with a single transverse opening, of a hot air chamber, substantially as described, supported at the top of said opening and having smoke pipes T, through it near its ends, main side plates M, secured to the sides of the opening through the wall, removable side plates S, beneath said hot air chamber detachably secured to the edges of said main plates, front plates N, detachably secured to the front edges of said removable side plates, a grate G, between each pair of removable side plates, thus forming two fire places, and a fire back piece B, between said fire places, as set forth. 7th. In a double fire place, the combination with the wall between two rooms and the chimneys in said rooms, all being provided with a single transverse opening, of a hot air chamber, substantially as described, supported at the top of said opening, registers opening into said chamber, said chamber having an opening O in its bottom at the center, a base plate A, resting upon the hearths and having a central opening O' beneath that in the chamber and above a cold air chamber a, main side plates M, secured to the sides of the opening through the wall and standing across the edges of said openings O and O', fire back pieces B, standing across the ends of said openings and forming a vertical air passage, side plates S, detachably connected to the edges of said main plates, a grate G, in each fire place thus formed, and smoke pipes T, leading from said fire place, as set forth. 8th. In a fire place, the combination with a

grate, side plates at the ends thereof, and a fire back in rear thereof, of a hot air chamber above said grate having aligned openings O³, and O⁴, the former provided with an upwardly projecting flange 10, a tubular smoke pipe T, within said chamber, its ends respectively standing outside the lower flange and inside the upper, a damper for said pipe, and air inlet and outlet openings in said chamber, substantially as described. 9th. In a double fire place, the combination with a hot air chamber H, having an opening O through its bottom surrounded by a depending flange 1, main side plates M, at the edges of said opening said plates having inwardly projecting flanges 2, and a base plate A, having an opening O', below that in the chamber which opening has flanges 4, at its sides embracing said main plates and also has flanges 3 across its ends, of removable fire back pieces B, resting against said flanges 1, 2, and 3, side plates S, detachably connected to said main plates, a grate G, between each pair of removable side plates, and a smoke pipe T, leading from each fire place thus formed, substantially as described. 10th. In a double fire place, the combination with a hot air chamber H, having an opening O through its bottom surrounded by a depending flange 1, and main side plates M, at the sides of said opening, said plates having inwardly projecting flanges 2, and forwardly projecting vertical flanges 8, of removable fire back pieces B, resting against said flanges 1 and 2, front plates N, removable side plates S, detachably connected at their front edges to the front plates and their rear edges resting against said vertical flanges 8, buttons Q, pivoted to the outer faces of said side plates and engaging said flanges, a grate G, between each pair of removable side plates, and a smoke pipe T, leading from each fire place thus formed, substantially as described. 11th. In a fire place, the combination with a hot air chamber H, main side plates M, depending from the sides of said chamber and having inwardly projecting flanges 2, and forwardly projecting vertical flanges 8, a removable fire back piece B, resting against said inward flanges, and a front plate N, having an inwardly projecting flange 6, around its fire place opening, with lugs L, adjacent thereto, of removable side plates S, their front edges detachably seated between said flange and lugs and their rear edges resting inside said vertical flanges, buttons Q, pivoted to the outer faces of said side plates and engaging the vertical flanges, a grate G, between the pair of plates, and a smoke pipe T, leading from the fire place thus formed, substantially as described. 12th. In a fire place, the combination with a fire back B, main side pieces M, having forwardly projecting vertical flanges 8, and a removable front plate N, detachably connected to the face of the chimney and having an inwardly projecting flange 6, around its fire place opening with lugs L, adjacent thereto, of removable side plates S, having openings O', through their bodies and provided with inwardly bent edges I, their front edges being detachably seated between said flange and lugs and their rear edges resting inside said vertical flanges, buttons Q, pivoted to the outer faces of said side plates and engaging the vertical flanges, and a grate G, detachably secured in the fire place, thus formed, substantially as hereinbefore described.

No. 37,656. Electric Clock. (*Horloge électrique.*)

Edward Payson Cramm, Boston, assignee of William Soule Seales, Everett, both in Massachusetts, U. S. A., 21st October, 1891; 5 years.

Claim.—1st. A train, a step-by-step driving mechanism therefor, combined with an impelling arm for the regulating member, which carries a co-operative part of the driving mechanism, substantially as described. 2nd. A train, a step-by-step driving mechanism, combined with an impelling arm for the regulating member, which carries a co-operative part of the driving mechanism, an electro-magnet and its armature, for moving said impelling arm in one direction, substantially as described. 3rd. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, and a latch carried by it, which engages said impelling arm, substantially as described. 4th. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, a latch carried by it which engages said impelling arm, means for releasing said latch operated by the regulating member, substantially as described. 5th. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, a latch which engages said impelling arm, means for releasing said latch governed by the regulating member and two circuit contacts, substantially as described. 6th. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, a latch which engages said impelling arm, means for releasing said latch governed by the regulating member and circuit contacts 2, 3, one of which is borne by the impelling arm, and the other of which is moved by the regulating member, substantially as described. 7th. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, a latch which engages said impelling arm, means for releasing said latch governed by the regulating member and two circuit contacts and a stop, as 4, substantially as described. 8th. A train, a step-by-step driving mechanism, combined with an impelling arm, an electro-magnet and its armature, a latch which engages said impelling arm, means for releasing said latch governed by the regulating member and two circuit contacts, the arms carrying them being arranged on different centers, substantially as described.

No. 37,657. Folding Packing Box or Trunk.

(*Boîte ou valise d'emballage brisées.*)

Bendeza J. Behrend, assignee of Henry Johnson, both of Washington, District of Columbia, U. S. A., 21st October, 1891; 5 years.

Claim.—1st. The combination, with the sides and ends B, C, D, E, of the lugs I, and notches i, substantially as and for the purpose described. 2nd. The packing receptacle, comprising folding sections A, B, C, D, E, F, hooks G, hook-holding plates b, f, slotted strengthening plates g, g', and lugs I, substantially as and for the purpose described. 3rd. The packing receptacle, comprising fold-

ing sections A, B, C, D, E, F, hooks G, hook-holding plates *b*, *f*, slotted strengthening plates *g*, *g*¹, lugs I, and pins J, substantially as and for the purpose described. 4th. The packing receptacle, comprising folding sections A, B, C, D, E, F, hooks G, hook-holding plates *b*, *f*, slotted strengthening plates *g*, *g*¹, fastening K, *k*¹, and wire *k*, substantially as and for the purpose described. 5th. The combination, with the front board B, and top portion F³, of hooks G, pin J, and a fastening K, *k*¹, for a wire *k*, substantially as and for the purpose described.

No. 37,658. Process and Apparatus for Preserving Articles of Food.

(*Procédé et appareil pour conserver les substances alimentaires.*)

Leopold Bregha, Oberdöbling, and Franz Breza, Krems, both in Lower Austria, Austria, 21st October, 1891; 5 years.

Claim.—1st. A process of preserving articles of food intended to be kept in a fresh condition, said process consisting in subjecting the bodies which are to be preserved to the action of vapours of glacial acetic acid, in a closed and perfectly air-tight vessel, from which the air has previously been driven out entirely by the said vapours of glacial acetic acid, substantially as described. 2nd. For carrying out the process indicated in the foregoing claim, an apparatus, consisting substantially of an air-tight and hermetically closing vessel *a*, provided with a double bottom and with a hermetically fitting cover, said cover *g*, being provided with an exhaust valve or cock *k*, in order to let the air contained in the vessel *a*, escape from the same in the same measure, as this vessel is filled with vapours of glacial acetic acid emanating through the apertures of the perforated upper bottom plate *d*, of the vessel *a*, substantially as described and shown.

No. 37,659. Seat. (*Siège.*)

George W. Pepple, Auburn, Indiana, U.S.A., 23rd October, 1891; 5 years.

Claim.—In a seat, the combination with a support having cups provided with concave centers and balls placed therein, of a movable seat, vertical spiral springs which have their ends secured respectively thereto, and horizontal spiral springs placed lengthwise and crosswise the said support, and having their ends and centers secured respectively to the seat and support, substantially as shown.

No. 37,660. Telephone Relay.

(*Relais téléphonique.*)

S. Lloyd Wiegand, Philadelphia, Pennsylvania, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. In an electrical apparatus, the combination, with two electrodes, one arranged to be actuated by gravity, of an expandable magnetizable core, a helix encircling the core, and devices connecting the core with one of the electrodes, the parts being so arranged that on the expansion of the core by the action of the current flowing around it, the contact of the electrodes will be diminished and subsequently increased by the gravitation of the free electrode, substantially as set forth. 2nd. In an electrical apparatus, the combination, with two electrodes, of an expandable magnetizable core, a helix encircling the core, and devices connecting the core with one of the electrodes, the parts being arranged so that on the expansion of the core by the action of the current flowing around it, the contact of the electrodes will be diminished and will be again increased by a force independent of that exerted by the core, substantially as set forth.

No. 37,661. Electric Bell. (*Timbre électrique.*)

Walter Hay, Chicago, Illinois, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. The combination with a bell and a hammer operating device, of an adjustable hammer mounted upon said device, substantially as described. 2nd. The combination of the bell B, frame A, having the lugs *a*¹, *a*², the helix G, the strip D, stamped from a single sheet of metal bent into substantially the form shown, the screw *c*, uniting the lug *a*¹, the end of the strip D, and the helix C, and suitable contact devices, substantially as described. 3rd. The combination in an electric bell, with suitable operating devices, of a hammer adjustably mounted upon said device, substantially as described. 4th. The combination with the frame A, the bell B, the helix C, and suitable contact devices, of the strip D, bent substantially as shown, and having the screw S, threaded to its free end, substantially as described.

No. 37,662. Thill Coupler. (*Armon de limonière.*)

Anton Niekamp, Maria Stein, Ohio, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. In a thill coupling, the combination with a hollow body provided with a longitudinal slot in its upper face and a diametrical opening in its front face intersecting the upper slot and a clip secured at the rear of the body, of a thill having its rear end horizontal and provided with a head extending beyond the sides of the iron and adapted to enter the chamber of the body, a lock bar closing the slot in the body above the head of the thill iron, a sleeve held to slide upon the thill iron to an engagement with the body, and locking devices, substantially as described, for securing the lock bar in place and likewise the sleeve, as and for the purposes set forth. 2nd. In a thill coupling, the combination, with a tubular body having a clip secured to its rear side having a longitudinal slot in its outer face and circumferential opening in its front face lead-

ing into said slot, of a thill, the outer end whereof is horizontal and provided with a head circular in cross section extending beyond opposite sides of the iron and adapted to enter and turn in the interior of the body, a lock bar adapted to close the outer slot of the body, the said bar being provided with a recess in its forward edge constituting the upper wall of the body opening, a sleeve held to slide upon the horizontal member of the thill iron having its rear section curved to correspond to the radius of the body, said section being adapted for engagement with said body, a set screw carried by the sleeve, and a similar screw carried by the body and adapted to enter the lock bar, as and for the purpose set forth.

No. 37,663. Method and Means of Attaching Knobs to their Shanks.

(*Méthode et moyen d'attacher les boutons à leurs queues.*)

Sherman Pomeroy Cooley, New Britain, Connecticut, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. The herein described knob and shank attachment, consisting of the cast metal knob shank and the wrought metal butt secured thereto for attaching to the knob with soft metal, substantially as described, and for the purpose specified. 2nd. In a knob attachment, a cast metal knob shank and a separately formed butt having two legs which form a continuation of two sides of the spindle socket, substantially as described, and for the purpose specified.

No. 37,664. Packing. (*Garniture.*)

John Thompson Smith, San Francisco, California, U.S.A., 23rd October, 1891; 5 years.

Claim.—The combination with the body of a packing of soft, pliable and elastic material, such as india-rubber or cork, thicker at the center of its larger surfaces than at the edges thereof, of insulating bands of soft, pliable, but inelastic and incombustible substance, placed over each of the larger surfaces of the body of the packing, upon the opposite faces, so as to leave the edges of said packing free, substantially as set forth.

No. 37,665. Apparatus for Use in the Electrolytic Decomposition of Metallic Salts. (*Appareil pour la décomposition électrolytique des sels métalliques.*)

Isaiah Lewis Roberts, Brooklyn, New York, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. In an apparatus for the decomposition of metallic salts, the combination with the electrodes, of an electrolytic diaphragm or partition, substantially non-porous or impervious to the solutions, as set forth. 2nd. In an apparatus for the decomposition of metallic salts, the combination with the electrodes, of an electrolytic diaphragm or partition amorphous in structure, as set forth. 3rd. In an electrolytic cell or apparatus, the combination with the electrodes, of two or more electrolytic partitions of non-porous substances, forming compartments for the electrodes, and one or more electrolytic bodies interposed between the partitions, as set forth. 4th. In an electrolytic cell, the combination with the electrodes, of an intermediate partition or diaphragm having a relatively high electrolytic resistance, as set forth. 5th. In an electrolytic cell, the combination with a cathode and an anode not decomposable by electrolytic action, of a non-porous partition of a high electrolytic resistance interposed between the electrodes, as set forth. 6th. A composite diaphragm or partition for electrolytic cells composed of supporting or containing walls with an intermediate filling, as set forth. 7th. An electrolytic apparatus, consisting of a tank or vat divided by an electrolytic diaphragm or partition into two compartments containing conductors or electrodes, one of said compartments being adapted to contain the solution to be decomposed, and the other compartment filled with a finely divided substance not decomposable by the electrolytic action, as set forth. 8th. In an electrolytic apparatus, the combination with a cathode, of an anode packed or imbedded in a material such as powdered anthracite coal or its equivalent. 9th. In an electrolytic apparatus, the combination with a cathode, of an anode packed or imbedded in powdered anthracite coal contained in a receptacle in the tank or vat, as set forth. 10th. A sealed tank or vat for electrolytic decomposition provided with an outlet for gas and an overflow for fluids, both leading from the anode compartment, as set forth. 11th. The combination with a closed cathode compartment, of a closed anode space or compartment, a gas discharge, and an overflow pipe for water leading from the anode compartment and above the level of the solution in the cathode chamber, as set forth. 12th. The combination, with a closed iron vessel or receiver constituting the cathode, of the bag or receptacle extending into the same, the carbon anode contained in said bag and the filling of coal dust surrounding the anode, as set forth. 13th. The combination, with the iron tank or receiver and the cover having the flanged opening or neck, of the bag or receptacle surrounding the neck, the carbon anode and the filling of coal dust surrounding the same, and contained in the bag. 14th. The combination, in a closed tank or vat with an anode surrounded by a substance such as coal dust, a gas chamber or space above the same filled with granulated carbon or other non-decomposable granular substance and a pipe leading therefrom for conveying off the gas, as set forth. 15th. In a sealed tank or vat for electrolytic decomposition, the combination with the anode imbedded in or surrounded by a substantially non-porous electrolytic body, of an impervious cylinder around the anode extending below the level of the solution, a layer of granulated carbon or its equivalent between the anode and the impervious cylinder above the level of the solution, and an outlet pipe extending from the same. 16th. In a sealed tank or vat for electrolytic decomposition, the combination with an anode and a

cathode and a substantially non-porous electrolytic diaphragm separating the same, of an impervious cylinder around the anode extending down below the level of the solution, and an outlet pipe for gas and water extending therefrom above the level of the solution in the tank or vat, as set forth.

No. 37,666. Fence. (*Clôture.*)

Lawson S. Newman, Peoria, New York, U.S.A., 23rd October, 1891; 5 years.

Claim.—In a fence, the combination, with two supporting posts, of a series of longitudinal wires secured to said posts, the uppermost and lowermost wires being intertwined with the second next wire therefrom centrally between the posts, while each remaining wire is intertwined with the third next wire therefrom centrally between the posts, and the several wires being again twisted together near the posts where they cross each other, substantially as set forth.

No. 37,667. Sanitary Closet. (*Cabinet sanitaire.*)

William S. Ross, Madisonville, Kentucky, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of a revoluble horizontal shaft 20, a ratchet wheel 23, mounted thereon, an engaging pawl 24, pivoted outside of said chamber, and connecting devices 21 and 25, between said shafts and lids for alternately opening and closing the latter and holding the same in position, substantially as described. 2nd. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of a revoluble horizontal shaft 20, provided with a series of sprocket wheels 21, and a series of sprocket chains 25, connecting said lids and sprocket wheels for alternately opening and closing said lids simultaneously, substantially as described. 3rd. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of a skeleton frame 14, mounted and secured upon said chamber and provided with a series of seats 7, a revoluble horizontal shaft 21, journaled in said frame and connecting devices between said shaft and lids for alternately opening and closing the latter simultaneously, said connecting devices consisting of a series of sprocket wheels 21, secured to said shaft and a series of sprocket chains 25, connecting said lids and sprocket wheels for alternately opening and closing said lids simultaneously, substantially as described. 4th. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of skeleton frame 14, mounted and secured upon said chamber and provided with a series of seats 17, having the vertical cast iron plates 15, the hinged metallic seat plates 17, formed with openings 18, and the hinged wooden covers 19, of a revoluble horizontal shaft 20, and connecting devices 21 and 25, between said shaft and lids for alternately opening and closing the latter simultaneously, substantially as described. 5th. In a sanitary closet, the combination, with a deposit chamber 8, provided with a hinged lid 13, and a frame 14, mounted and secured above said chamber and provided with a seat 7, having a hinged cover 19, of locking and unlocking devices 29 and 31, connecting said hinged lid and cover, substantially as described. 6th. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, and a frame 14, mounted and secured upon said chamber and provided with a series of seats 7, having hinged covers 19, and seat plates 17, formed with openings, of locking and unlocking devices 29 and 31, connecting said hinged lids and covers, substantially as described. 7th. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of a skeleton frame 14, mounted and secured upon said chamber and provided with a series of seats 7, having hinged covers 19, a revoluble horizontal shaft 20, journaled in said frame, connecting devices between said shaft and lids, consisting of a series of sprocket wheels 21, secured to said shaft and a series of sprocket chains 25, connecting said lids and sprocket wheels for alternately opening and closing said lids simultaneously, and a series of locking and unlocking devices 29 and 31, connecting said hinged lids and covers, substantially as described. 8th. In a sanitary closet, the combination, with a metallic deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, of a skeleton frame 14, mounted and secured upon said chamber and provided with a series of seats 7, having hinged covers 19, a revoluble horizontal shaft 20, journaled in said frame, connecting devices between said shaft and lids, consisting of a series of sprocket wheels 21, secured to said shaft and a series of sprocket chains 25, connecting said lids and covers, substantially as described. 9th. A sanitary closet, comprising a pit or vault 1, having walls 2, formed with spaces 3, containing cement or concrete 4, with recesses 27, and with a cement or concrete bottom 5, a metallic casing 6, arranged within said vault and having a deposit and furnace chamber 8, provided with a series of hinged metallic lids 13, a skeleton frame 14, mounted and secured upon said chamber and provided with a series of seats 7, having hinged covers 19, locking and unlocking devices connecting said hinged lids and covers 29 and 31, a revoluble horizontal shaft 20, journaled in said frame, and connecting devices between said shaft and lid for alternately opening and closing the latter simultaneously, said connecting devices consisting of a series of sprocket wheels 21, secured to said shaft, and a series of weighted sprocket chains 25 and 26, connecting said lids and sprocket wheels for alternately opening and closing said lids simultaneously, substantially as described.

No. 37,668. Curry Comb. (*Etrille.*)

Thomas K. Foster and William McLeod, both of Hamilton, Ontario, Canada, 23rd October, 1891; 5 years.

Claim.—In a curry comb, the combination of an oval plane base A, having handle B, and a series of projected metallic corrugations C, secured thereto on a contour with the oval line of said base, substantially as and for the purposes hereinbefore set forth.

No. 37,669. Electric Safety Switch.

(*Commutateur de sûreté électrique.*)

George Lewis Hall, Lowell, Massachusetts, U.S.A., 23rd October, 1891; 5 years.

Claim.—1st. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, electric contact terminals normally in closed circuit with and between the poles of said generator and said main line, and automatic means for electrically separating said terminals upon rupture of the main line, as and for the purpose specified. 2nd. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith and having outgoing and incoming lines, an electro-magnet in circuit with said main line, a circuit breaking armature within inductive relation to said magnet, and terminal contacts at or near and connected electrically to the respective terminals of said generator and to the terminals of said circuit breaking armature, for the purpose, as hereinbefore described, of electrically destroying the electric generation or charge upon each and both of the outgoing and incoming lines, as and for the purpose specified. 3rd. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, electric contact terminals, normally in closed circuit with and between the poles of said generator and said main line, and automatic means for electrically separating said terminals upon rupture of the main line, as and for the purpose specified. 4th. The method of operating a system of electrical distribution embodying an electric generator in circuit with a main line consisting in automatically electrically separating the poles of the generator from the main line when the latter becomes ruptured, as and for the purpose specified. 5th. The combination in a closed electric circuit, of a movable double switch, consisting of two movable switches, one arranged in the line out and the other in the line in, said switches being insulated from each other but mechanically connected to each other, an electro-magnet arranged in the same circuit, and its armature secured to one of said switches said magnet being arranged to hold said switches closed when the current is uninterrupted and at other times to allow said switches to be opened and the current to be broken in two places, as and for the purpose specified. 6th. The combination, in a closed circuit, of a switch consisting of two levers, the free end of one of said levers overlapping and resting upon the free end of the other of said levers, an electro-magnet in said circuit, and its armature secured to the last named lever to hold said levers in contact while the current is uninterrupted, said levers upon an interruption of the current being adapted to fall and separate from each other, as and for the purpose specified. 7th. The combination in a closed electric circuit, of a switch consisting of two levers, the free end of one of said levers overlapping and resting upon the free end of the other of said levers, an electro-magnet in said circuit, its armature secured to the last named levers to hold said levers in contact while the current is uninterrupted, said levers upon an interruption of the current being adapted to fall and separate from each other, and means, substantially as described, for retarding the falling of said levers in order that said switch levers may not be separated by a momentary failure of the current and may be restored to position by the attraction of said magnet, as and for the purpose specified. 8th. The combination in a closed electric circuit, of a switch consisting of two levers, the free end of one of said levers overlapping and resting upon the free end of the other of said levers, an electro-magnet in said circuit, its armature secured to the supporting lever, a dash-pot cylinder, its piston and piston rod, said piston rod being joined to said supporting lever to retard the falling of said levers and to prevent the instantaneous opening of said switch upon a momentary failure of the current and to enable said levers to be restored to position by the attraction of said magnet, as and for the purpose specified. 9th. The combination, in a closed electric circuit, of a movable switch, an armature secured thereto, an electro-magnet in said circuit, arranged to attract said armature and to hold said switch closed when the current is uninterrupted and at other times to allow said switch to be opened, another circuit arranged to be closed by the opening of said switch, and alarm devices arranged in said last named circuit and operated upon the closing thereof, as and for the purpose specified. 10th. The combination, in a closed electric circuit, of a switch consisting of two levers, the free end of one of said levers overlapping and resting upon the free end of the other of said levers, an electro-magnet in said circuit, its armature secured to the supporting lever to hold said levers in contact while the current is uninterrupted, said levers upon an interruption of the current being adapted to fall and separate from each other, and a stop to prevent said overlapping lever from falling out of the arc of its supporting lever, whereby restoring said supporting lever to position will also restore said overlapping lever to position, as and for the purpose specified. 11th. The combination, in a closed electric circuit, of a switch consisting of two levers, the free end of one of said levers overlapping and resting upon the free end of the other of said levers, an electro-magnet in said circuit, its armature secured to the supporting switch lever, and a retaining lever arranged to be turned under said supporting lever, to close said switch and to be retained in said position by the weight of said supporting lever thereon until said supporting lever is raised by the attraction of said magnet and said retaining lever is overset by its weight, as and for the purpose specified.

No. 37,670. Extension Ladder.*(Echelle à rallonge.)*

Rodrique Colleret, Montreal, Quebec, Canada, 23rd October, 1891; 5 years.

Resumé.—1o. La combinaison des engrenages *f, f*, et du cylindre *g*, avec les cables *h, h*, et les leviers *i, i*, assis sur les roulettes *l, l*, ces leviers voyageant dans les orniers *k, k* et crans *j, j*, et supportant, à la tête, les chevaux *b, b*, tel que décrit et pour les fins indiquées. 2o. La combinaison des engrenages *m, m*, avec les cables *h', h'*, attachés au bas des deux sections *b, et c*, supérieures de l'échelle, les cables passant sur les poulies *p, p*, et s'enroulant sur les cylindres *o', p'*, tel que décrit et pour les fins indiquées. 3o. La combinaison des engrenages *n, n*, comprenant les pignons *q¹, q¹*, les écrous *q, q*, avec les pivots *o, o*, tel que décrit et pour les fins indiquées. 4o. La combinaison des cordes *r, k, l*, la première fixe et les deux denrières suivant la marche des deux sections supérieures *b, et c*, de l'échelle, tel que décrit et pour les fins indiquées. 5o. La combinaison de la vis sans fin *x*, avec la table tournante et le brancard mobile *d*, tel que décrit et pour les fins indiquées. 6o. La combinaison de la table tournante en trois anneaux *S¹, S², et S³*, les deux premiers tournant sur les troisième avec les agrafes *t, t*, et charnières ou articulations *g, g*, tel que décrit et pour les fins indiquées. 7o. La combinaison des étriers articulés *n¹, n*, avec les côtés *a, a*, de la première section de l'échelle, tel que décrit et pour les fins indiquées.

No. 37,671. Vehicle Spring. *(Ressort de voiture.)*

Peter Senecal and Eugene Senecal, both of Roxton Pond, Quebec, Canada, 24th October, 1891; 5 years.

Claim.—1st. A vehicle spring, consisting of a main or lower leaf made in two lengths overlapping slidably in the center, the end of the overlapping length turned to clip the edges of the underlapping length and the end of the latter terminating in a cross plate having eyes engaged by the bolts of a clip, one or more top leaves on said main leaf, a jack leaf having a long bearing on the center of the top leaf or leaves and having its ends carrying the body raised, said jack bolted to the top leaf or leaves in the center, a clip riveted to the jack and embracing the fast end of the main leaf, upper leaf or leaves and jack tightly and riveted to the latter, and another clip, equi-distant on the other side of the center bolt also riveted to the jack and having distance pieces to embrace the leaves loosely and its bolts passing through the cross plate formed by the end of the underlapping length of the lower leaf, substantially as set forth. 2nd. In a vehicle spring, the combination of the main or lower leaf *D, D¹*, made in two lengths overlapping slidably in the center, and the underlapping length having clip end *d¹¹*, the leaves *E* and *F*, the jack leaf *G*, having raised ends to receive the body and bolted to the leaves *E* and *F*, clip *H*, riveted to the jack and embracing all the leaves tightly and the clip *I*, riveted to the jack and having distance piece to embrace all the leaves loosely and its bolts passing through the clip plate of the main spring, substantially as set forth.

No. 37,672. Supplemental Seat for Bicycles.*(Siège supplémentaire pour bicycles.)*

Frank Dowd Jones and Alfred Gordon Fisher, both of Springfield, Massachusetts, U.S.A., 24th October, 1891; 5 years.

Claim.—1st. A supplemental seat or saddle for a bicycle having at its rear a device for the support thereof from the main saddle or saddle support of the machine, and having at its front an appliance for suspending the saddle from the head of the machine, for the purpose set forth. 2nd. The combination with the head of a bicycle and a saddle and support therefor to the rear of said head, of a supplemental seat or saddle having appliances at its rear for the support thereof from the main saddle or saddle support of the machine and having appliances at the front thereof for its suspension from the head of the machine, for the purpose set forth. 3rd. A supplemental seat or saddle for a bicycle having at its rear a device for the support thereof from the main saddle of the machine, and having at its front an appliance for suspending the saddle from the head of the machine and a stay device connected to the saddle and adapted to be engaged with the frame of the machine for preventing undue lateral movements of the supplemental saddle, substantially as set forth. 4th. The combination with the head of a bicycle, and a saddle and support therefor to the rear of said head, of a supplemental seat or saddle having appliances at its rear for the support thereof from the main saddle or saddle support, and having appliances at the forward part thereof for its suspension from the head of the machine, and also having suspended therefrom one or more foot-rests, substantially as set forth. 5th. The combination with the head of the bicycle and the saddle and support therefor, of a supplemental seat having appliances at its front and at its rear for the suspension thereof from the head and main saddle or saddle support, and having a stay device connected thereto and adapted to be engaged with the frame of the machine for preventing undue lateral movements of the supplemental saddle, and also having suspended therefrom the foot-rests, substantially as set forth. 6th. A supplemental seat or saddle for a bicycle having at its rear portion the connected straps *b, b*, and buckles adapted to engage a part of the main saddle of the machine or its support, substantially as described, and having at its forward portion the straps *d, d*, each by an intermediate portion united to the saddle, and one terminal of each of said straps having a buckle, and the other end portion of each strap adapted to embrace the handle bar carried at the head of the machine, and to have a connection with the buckle, substantially as described. 7th. A supplemental seat or saddle for a bicycle having at its rear appliances for the support thereof from the main saddle or saddle support of the machine and having at its forward portion the straps *d, d*, each having its intermediate portion formed as a loop and secured to the saddle, and one terminal of each of said straps having a buckle and the other end portion of

each strap adapted to embrace the handle bar at the head of the machine and to have a connection with the buckle, and the pending straps engaged with said loops and each forming or carrying a foot-rest, substantially as described.

No. 37,673. Adjustable Square and Bevel.*(Fausse-équerre.)*

Charles Stilwell, Morristown, New Jersey, and Anson P. Thayer, New York, State of New York, both in U.S.A., 24th October, 1891; 5 years.

Claim.—1st. The combination of the right angled triangular head piece having the median slot for the blade nearly separating it into two parts, the slotted blade pivoted in said slot near the apex of the said angle, and the binding screw *h*, by which they are pivoted together, said blade being adjustable around and along the pivot, substantially as described. 2nd. The combination of the triangular head piece, slotted blade and the binding screw *h*, by which they are pivoted together, one or more gage studs of the head pieces, as *j, m, n*, and the notched end of the blade, substantially as described. 3rd. The combination of the triangular head piece, the spirit level arranged on the inner side of one of the sides of the head piece, and the blade pivoted in the apex of the head piece and adjustable to and securable in a fixed position with one edge in alignment with the side of the head piece forming the base of the level. 4th. The combination of the right angled triangular head piece, the slotted blade having the notched end and the binding screw by which they are pivoted together near the apex of said angle, also the gage stud *k*, said stud and the binding screw *h*, holding the blade with one edge in line with one side of the head piece, and also the spirit level located on said side of the head piece as a base for the bevel, substantially as described. 5th. The combination of the triangular head piece, the slotted blade, the binding screw *h*, by which they are pivoted together, the gage studs *k* and *l*, respectively, with stud *n*, parallel to the respective sides of the head piece and half the width of the blade therefrom, the notched end of said blade and the spirit level, substantially as described. 6th. The combination of the triangular head piece, the slotted blade, the binding screw *h*, by which they are pivoted together, and the stud *j*, in the same line with the binding screw *h*, in a line perpendicular to the base *d*, said blade being adjustable over the top of the stud to engage the stud in the slot and disengage it from the slot, substantially as described. 7th. The combination of the triangular head piece, slotted blade, and the binding screw *h*, by which they are pivoted together, the gage studs *j, m*, and the notches *o*, of the end of the blade adapted to gage the blade to a predetermined angle by lodgment of said extension between said studs, substantially as described. 8th. The combination of the triangular head piece, slotted blade, the binding screw *h*, by which they are pivoted together, the gage stud *j*, in the same line with the binding screw *h*, in a line perpendicular to base *d*, and the bearing point *g*, equi-distant from the edge *s*, of the blade, substantially as described. 9th. The combination of the conical washer with the blade, binding screw and the slotted triangular head piece, one of the parts of said head piece having a conical socket concentric with the binding screw, substantially as described. 10th. The combination of the conical washer and the tongue piece thereon with the slotted blade, binding screw and slotted triangular head piece, one of the parts of said head piece having a conical socket concentric with the binding screw, substantially as described.

No. 37,674. Attachment for Plows.*(Disposition aux charrues.)*

Copp Brothers Co., assignees of John Challen, all of Hamilton, Ontario, Canada, 24th October, 1891; 5 years.

Claim.—The combination and arrangement of the reversible skimmer blade *C*, having two points or cutting edges *E* and *F*, in connection with the holder *A*, to which said blade is attached by means of two bolts in the holes *B, B*, in the holder at coinciding with the holes *B, B*, in the blade *C* when attached for working with either of the points *E* or *F*, and held at the required angle with the line of the standard *D* on the plough beam, to preserve the proper set of the points *E* or *F* for skim plowing, all operating substantially as and for the purposes herein set forth.

No. 37,675. Extensible Car Step.*(Marche pied de char à rallonge.)*

Horace B. Peck, Kalamazoo, assignee of Milton Eugene Company, Hamilton, both in Michigan, U.S.A., 24th October, 1891; 5 years.

Claim.—1st. The herein described extensible car-step, comprising the bar *D*, journaled on the permanent steps, having the pendent-arms *D¹, D¹*, and the step *C¹*, pivoted between said pendent-arms, a transverse rock-shaft *G*, journaled on the permanent steps, having crank-arms, and a bar *E*, connecting one of said crank-arms to said step and having limited play thereon, substantially as herein set forth. 2nd. The herein described extensible step, comprising the folding step *C¹*, hung by parallel pendent-arms *D¹, D¹*, from the permanent steps, a transverse rock-shaft *G*, journaled on the permanent steps, having a crank-arm *F*, arranged in the rear of the step, and a bar *E*, having one end connected with the step and the other end formed with an elongated slot *P*, to receive the lower end of said crank-arm, substantially as set forth. 3rd. The combination, with the permanent steps, of an extensible step *C¹*, pivoted between the pendent-arms *D¹, D¹*, as set forth, a rock-shaft *G*, having a crank-arm *F*, and a rod *E¹*, having the portion *E¹* at an angle to the main portion secured to the step and connecting the arm *F* and step, the lever connected with the rock-shaft, the latch, and the eccentric engaging the latch, substantially as set forth. 4th. The combination, with the permanent steps, of an extensible step *C¹*, pivoted between the pendent-arms *D¹, D¹*, as set forth, a bar *E* having the portion *E¹* at an angle to the main portion of the bar, the plate *O*, secured to the permanent steps and engaging the upper end of the bar *E*, and

means of lifting the bar E, a spring-latch to engage the operating-lever, and the eccentric engaging the latch, substantially as described and for the purposes set forth. 5th. The combination, with the permanent car-steps, of the extensible step C', pivoted between the portion E', pendent-arms, as set forth, the bar E, having the portion E' secured to the step, the transverse rock-shaft G, journaled on the permanent steps, having the crank-arm F, attached to the bar E, and the crank-arm H on the rock-shaft and connected to the cylinder J, substantially as described and for the purposes set forth.

No. 37,676. Automatic Stock Feeder. (*Appareil automatique pour nourrir les animaux*)

James Howard Carpenter and Joseph Stafford Horsey, both of West Point, Georgia, U.S.A., 24th October, 1891; 5 years.

Claim.—1st. In a stock feeder, the combination of the hopper, the sliding cover, the rollers journaled in the sides of the hopper, the weights attached to the lower end of the door by cords passing over the rollers, the shaft journaled between the upper ends of the sides of the hopper and provided with levers adapted to engage with the top edge of the door, and the pin seated with its lower end on a sustaining bracket and having a lever of the shaft resting on its upper end, substantially as described. 2nd. In a device of the class specified, the hopper B and the door C, normally forming one side of said hopper and adapted to be opened, and the shaft E having levers^e bearing on or over the door, and means for preventing the revolution of said shaft, substantially as and for the purpose specified, and a feed trough suitably placed. 3rd. In a device of the class specified, the hopper B and door C normally forming one side of said hopper and adapted to be opened, and the shaft E having levers^e bearing on or over the door, and means for preventing the revolution of said shaft consisting of the lever e' secured thereto, and the pin e, substantially as and for the purpose specified, and a feed trough suitably placed.

No. 37,677. Automatic Regulator for Electric Motors and Dynamo Electric Machines. (*Régulateur automatique de moteur électrique et machine dynamo électrique.*)

The Crocker-Wheeler Electric Motor Company, assignees of Schuyler Skants Wheeler, all of New York, State of New York, U.S.A., 24th October, 1891; 5 years.

Claim.—1st. The described method of preventing injurious sparking at the commutator brushes of a dynamo electric machine or electric motor, consisting in producing equal and opposing magnetic effects between the field magnet poles and those portions of the armature core which are being magnetized while the brushes are passing over consecutive commutator segments connected to the coils which surround the aforesaid portions of the core, substantially as described. 2nd. The described method of regulating a dynamo electric machine or electric motor and simultaneously preventing injurious sparking at the commutator brushes, consisting in producing equal opposing magnetic effects between the field magnet poles and those portions of the armature core which are being magnetized as the brushes pass over consecutive commutator segments connected to the coils which surround the aforesaid portions of the armature core and in simultaneously shifting the brushes in proportion to the load, substantially as described. 3rd. A dynamo electric machine or electric motor having the effective magnetic portions of its field magnets and armature of substantially equal magnetic capacity, and so wound as to produce like polarity and an equal opposing effect between said field magnet poles and those portions of the armature core which are being magnetized at the time that the brushes are passing over consecutive segments of the commutator, substantially as described. 4th. A dynamo electric machine or electric motor having the effective magnetic portions of its field magnets and armature of substantially equal magnetic capacity, and so wound as to produce like polarity and an equal opposing effect between said field magnet poles and those portions of the armature core which are being magnetized at the time that the brushes are passing over consecutive segments of the commutator, in combination with means for varying the angular position of the brushes in accordance with the load, and simultaneously maintaining the aforesaid magnetic balance, substantially as described. 5th. A dynamo electric machine or electric motor having the effective magnetic portions of its field magnets and armature of substantially equal magnetic capacity, and so wound as to produce like polarity and an equal opposing effect between said field magnet poles and those portions of the armature core which are being magnetized at the time that the brushes are passing over consecutive segments of the commutator, in combination with an automatic regulator adapted to shift the brushes and maintain the aforesaid magnetic balance, substantially as described.

No. 37,678. Projectile. (*Projectile.*)

William M. Wood, Boston, Massachusetts, U.S.A., 26th October, 1891; 5 years.

Claim.—1st. A hollow projectile having its entire body portion formed of a single homogeneous piece of metal open from end to end and its head and base of separately formed pieces welded to the first as and for the purpose described. 2nd. A hollow projectile, the entire body portion of which, having a suitable base, consists of a drawn or swaged tube welded to a point section, as and for the purpose described. 3rd. A projectile, composed of three longitudinal sections or parts, consisting of a tubular homogeneous body portion formed of one piece, the point and the base, said point and base being each made in a single piece and welded to the body. 4th. A hollow projectile, the entire body section of which consists of a hollow

or tubular piece of homogeneous metal having an inner and outer skin, as described, in combination with a separately formed point section welded to the first, as and for the purpose described. 5th. A hollow projectile having its head welded to its body and provided at the point of union with an internal strengthening burr or projection.

No. 37,679. Method of Manufacturing Projectiles by Electric Welding.

(*Méthode de fabriquer les projectiles par le soudage électrique.*)

William M. Wood, Boston, Massachusetts, U.S.A., 26th October, 1891; 5 years.

Claim.—1st. The herein described improvement in processes of manufacturing hollow projectiles, which consists in forming the body as a separate tubular section, separately forming the point, and then welding the two together by the electric welding process, as and for the purpose described. 2nd. The herein described improvement in processes of manufacturing hollow metal projectiles, which consists in making the body portion from drawn tubing and separately from the base and point, swaging, pressing, or otherwise forming the point and base into the desired shapes, and then electrically welding the hollow body to the said point and base, as and for the purpose described. 3rd. The herein described improvement in making hollow metal projectiles, which consists in making the body portion separately from the point, forming the point section with an internal cavity, placing the two together in an electric welding apparatus, and then subjecting the same to endwise pressure, so as to raise a burr or projection at the point of union, as and for the purpose described. 4th. The herein described improvement in manufacturing hollow projectiles, which consists in forming the base as a closed cup shaped body closed at its bottom or end welding the same to the body by the electric welding process, and either before or after such operation piercing the end with the fuse hole, as and for the purpose described. 5th. The herein described improvement in making hollow projectiles, which consists in forming the body from drawn tubing and then welding the same to the head by the electric welding process, as and for the purpose described. 6th. The herein described improvement in making projectiles, which consists in finishing the body portion separately from the head, with an inner and outer skin, and then welding said point and head together by the electric welding process, as and for the purpose described. 7th. The herein described improvement in manufacturing projectiles having a rotating band, consisting in forming the same in sections with the line of union at the point of application of the band, putting the band in place with the sections abutted, and welding said sections together, as and for the purpose described.

No. 37,680. Brush Machine.

(*Appareil pour fabriquer les brosses.*)

McClintock Young, Frederick, Maryland, U.S.A., 26th October, 1891; 5 years.

Claim.—1st. In a machine for forming and inserting tufts, the combination of a slotted bristle support, a blade movable through said slot and provided with teeth to divide the bristles into tufts, and a second blade also movable through the slot to drive the tufts to their seats in the brush block. 2nd. In a brush making machine, the brush block support, the slotted bristle support thereover, and the two independently movable blades, one provided with teeth to separate and guide the bristles and the other provided with teeth to carry the bristles into the block. 3rd. In a brush machine, and in combination with an underlying support for the brush block and an inserting device which acts from above, a slotted bristle support provided with a fixed overlying finger d, to confine the bristles in position. 4th. In a brush machine, the bristle support consisting of the plate provided with the upturned end, the vertical slot at the opposite end, and the overhanging finger d, to confine the bristles in position across the slot. 5th. In a brush machine, in combination with a bristle support having an opening through which the bristles may be folded and delivered, a reciprocating blade having teeth to divide the bristles and an independently movable reciprocating blade having tuft driving teeth intermediate of the teeth of the first named blade. 6th. In a brush making machine, in combination with a suitable bristle support, a reciprocating blade with pointed teeth to divide and guide the bristles, and a second and independently movable blade with tuft driving teeth, the ends of which are indented to straddle the tufts within their bight or fold.

No. 37,681. Brush Machine.

(*Appareil pour fabriquer les brosses.*)

McClintock Young, Frederick, Maryland, U.S.A., 26th October, 1891; 5 years.

Claim.—1st. In a brush machine, the grooved table to sustain the brush block, the feed dog overlying the table adapted and arranged to directly engage and move the block, the dog actuating lever and the cam to move said lever. 2nd. In a brush machine, the main frame, the block sustaining table pivoted thereto, the lever, pivoted to the frame, the block feeding dog attached to the lever and having its active end substantially coincident with the pivot of the table, whereby the table and block may be inclined without affecting the action of the dog. 3rd. The magazine for bristles in combination with the movable arm closing against its delivery end, and the two reciprocating blades one of which is mounted to move with the arm. 4th. The magazine, the blade G, sustained in a fixed guide and movable through and across the magazine, the swinging arm f, and the reciprocating blade H, mounted thereon and adapted to advance with the first blade through the magazine and then separate laterally therefrom as described. 5th. As a means of separating a slice or layer of bristles from the end of a mass in a magazine, two blades adapted to be laterally joined and separated as described, and sup-

ports, substantially as shown, permitting said blades to be moved longitudinally in unison and to be laterally separated, whereby the blades may be thrust as one through the mass while the other removes the slice therefrom. 6th. In combination with the magazine, the reciprocating blade G, and its actuating cam, the swinging arm *f*, and its reciprocating blade H, constructed to interlock with and receive motion from the first blade, substantially as described and shown. 7th. In combination with the magazine, the follower and its rod, the feed dog, the lever and link to actuate the rod, and the cam D to actuate the lever. 8th. In combination with the support for the brush block, the magazine, the intermediate vibratory arm *f*, to sustain the bristles, the two blades mounted one adjacent to the magazine and the other on the arm, whereby the bristles may be presented and sustained above the block. 9th. In combination with the magazine, the pivoted casting F, with arm *f*, to receive bristles from the magazine and the slotted pivoted cam plate D, provided with an operating lever and acting to vibrate the casting as shown. 10th. In combination with the magazine, the reciprocating blade G, the pivoted casting F, with arm *f*, the reciprocating blade H, thereon, and the cam plate D, slotted as shown to move the casting and the blades alternately. 11th. In combination with a support for the brush block, the overlying bristle sustaining arm *f*, and a blade H, both slotted vertically, and a reciprocating plate having the toothed end arranged to pass through the bristle support, whereby the layer or slice is divided into tufts. 12th. In combination with a bristle support having a slot across which the bristles are laid in an unbroken slice or sheet, a plate having a toothed end movable through the slot, whereby the slice is divided into tufts and the tufts folded or doubled. 13th. In combination with a supporting plate having a slot across which the bristles may be laid in an unbroken slice or sheet, a plate having a toothed end to pass through the slot, and a second plate or blade grooved in its end to receive a tuft fastener, and movable independently of the toothed plate to force the tufts and fastener into the brush block. 14th. In combination with a support for the brush block, the slotted bristle support overlaying the same, the vertical slide provided with the grooved blade, the independently movable toothed plate mounted thereon, the spring to depress said plate and lifting devices substantially as shown to elevate the plate relatively to the blade. 15th. In combination with the grooved reciprocating blade J, the guide L, and its slide *l*, for inserting the tuft fastening strips in the blade. 16th. In combination with the grooved blade J, guide L, and slide *l*, the vibratory bristle carrying arm, and the slide operating link connected thereto, whereby the bristle carrying arm is enabled to present the bristle fastening strip to the inserting blade. 17th. In combination with the slotted bristle sustaining arm *f*, and the blades movable therethrough, the fixed plate *f*^o, and the hinged spring actuated plate *f*^u.

No. 37,682. Car Coupler. (*Attelage de chars.*)

Joseph Bigelow, Port Perry, Ontario, Canada, 26th October, 1891; 5 years.

Claim.—1st. In a car coupler, a swinging or hinged link hinged to the draw bar near the front end sill of a car body in combination with a draw bar having a hook on its upper side near the head thereof, substantially as and for the purpose hereinbefore set forth. 2nd. In a car coupler, a hinged or swinging platform having a coupling link attached thereto and means for holding the same in a vertical position in combination with a draw bar having a hook on the upper side and at the front end thereof, substantially as and for the purpose hereinbefore set forth. 3rd. In a car coupler, a draw bar having a solid head and hooks on the upper side thereof one of said hooks near where the end of the body of a car rests and the other at the end or head thereof, substantially as and for the purpose hereinbefore set forth.

No. 37,683. Microscopic Table for Viewing Natural Objects. (*Table microscopique pour regarder des objets naturels.*)

John McKenzie and George Martin, both of Hamilton, Ontario, Canada, 27th October, 1891; 5 years.

Claim.—1st. In a scientist's microscopic table, a longitudinal table A, having elevated cases E, arranged with a series of apertures H, on their inner sides, and devised to contain a series of concave reflectors F, in combination with the adjustable covers K, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a scientist's microscopic table, of two elongated elevated cases E, placed on a table long wise, and arranged with a series of circular topped apertures H, on their inner sides, and devised to contain a series of concave reflectors F, provided with the covers K, having a series of adjustable lenses L, with adjustable covers M, and the folding legs B, provided with braces C, substantially as and for the purposes hereinbefore set forth.

No. 37,684. Hose Coupling. (*Joint de boyau.*)

William Lewis Johnson, Pomona, California, U.S.A., 27th October, 1891; 5 years.

Claim.—1st. The combination, with a hose coupling, of a latch consisting of a bail normally located in front of one end of the coupling, provided with rearwardly and downwardly extending arms pivoted to the coupling, and semi-circular recesses at the junction of the arms with the bail, a spring-controlled yoke pivoted to the rear portion of the bail, a lifting device connected with the yoke, and a lug located upon the coupling adapted as a stop for the yoke and to maintain the bail in a locked position, substantially as described. 2nd. The combination, with a coupling, of an essentially semi-circular bail, vertically located with respect to the front of the coupling and extending beyond said front, the said bail being provided with rearwardly and downwardly extending arms pivoted to the coupling at opposite sides, and cam recesses at the junction of the arms with the bail, a lug formed upon the coupling and having

an inclined rear face, and a spring-controlled yoke pivotally attached to the bail between its arms and provided with an eye having an attached lifting device, which eye is adapted for engagement with the lug, as and for the purpose set forth. 3rd. The combination, with two engaging sections of a hose coupling, one section being provided with posts or studs at opposite sides and the other with a lug upon its upper surface, of a latch pivoted upon one coupling essentially U-shaped in front elevation and extending beyond one face of said coupling, the said bail being provided with inwardly and downwardly extending arms pivoted to the coupling, and cam recesses at the junction of the arms with the bail adapted to receive and engage with the posts or studs of an opposed coupling, a spring-controlled yoke pivoted to the bail between its arms, adapted for engagement with the lug upon the coupling having the latch attached, and a lifting device connected with the yoke, substantially as specified.

No. 37,685. Electrolysis Apparatus.

(*Appareil électrolyse.*)

Charles Kellner, Vienna, Austria, 27th October, 1891; 5 years.

Claim.—1st. An apparatus for the electrolytical decomposition of solutions or liquids, in which the electrodes are suspended in frames and separated by diaphragms, so as to form batteries, each of which frames is provided with two openings, through one of which the electrolyte to be decomposed passes into the frame cell, the second opening in one frame being arranged on one side of the apparatus and the second opening of the next frame being on the other side, and so on alternately, thereby causing one of the separated ions to pass out on one side of the apparatus, and the second ion to pass out on the other side, substantially as hereinbefore described and for the purposes specified. 2nd. In apparatus of the kind specified in claim 1, the construction of electrodes of a number of separate rods E, provided with bent pieces or with the wires *B*, secured in recessed ends of the rods by means of readily fusible metal or alloy, substantially as and for the purposes set forth. 3rd. In apparatus of the kind specified in claim 1, the use of diaphragms of nitro-cellulose, substantially as set forth.

No. 37,686. Electrical Block System for Railways. (*Système de bloc électrique pour chemins de fer.*)

A. H. R. Guiley, South Easton, Pennsylvania, U.S.A., 27th October, 1891; 5 years.

Claim.—1st. In an electrical block system for railways, the combination, with a pendent contact lever carried by the locomotive, of contact pieces provided with two flanged plates, insulated from each other and placed diagonally with reference to the track rails, and adapted to be engaged by the contact lever of the locomotive, substantially as specified. 2nd. In an electric block system for railways, the combination of the two diagonally arranged flanges insulated from each other and adapted to make separate contacts for trains running in opposite directions, a contact lever carried by the locomotive and arranged to strike either of the diagonal flanges, and an electrical alarm carried by a locomotive, substantially as specified. 3rd. In an electrical block system for railways, the combination in the contact piece B, of the block *a*, the flanged plates *e*, *e'*, and the insulation *o*, substantially as specified. 4th. In an electrical block system for railways, the combination of the contact piece B, provided with diagonal flanges, the contact lever *o*, the electrically continuous rail *a*, the interrupted rail *a'*, the alarm carried by the locomotive, and electrical connections, substantially as specified. 5th. In an electrical block system for railways, the combination, with a railway provided with a rail formed of a continuous electrical conductor and a rail forming an interrupted conductor, of a series of double contact pieces arranged along the railway between the rails at suitable intervals, and a contact lever or feeler carried by the locomotive and adapted to touch the contact pieces, substantially as specified. 6th. In an electrical block system for railways, the combination, with the main circuit and circuit closing devices, of a relay, an electric or magnetic bell controlled by the relay, and means for holding the bell circuit closed, substantially as specified. 7th. In an electrical block system for railways, the combination of diagonally arranged contacts, and a jointed pendent contact lever, substantially as specified. 8th. A jointed, pendent contact lever or feeler provided with a spring for holding it normally in an extended position, substantially as specified. 9th. A jointed, pendent contact lever formed of pipes for conveying steam, one part of the lever being movable, the other stationary, substantially as specified. 10th. The combination, with a pendent contact lever, of a pipe for conveying steam to the end of the lever, for melting the snow and ice upon the contact lever and the stationary contact pieces, substantially as specified. 11th. A contact lever or feeler, formed partly of a rigid arm and partly of an arm flexible throughout its length, substantially as specified. 12th. A pendent contact lever for an electrical block system, having a movable and removable tip, substantially as specified. 13th. The combination, with a pendent contact lever or feeler, of a lever and rod connected with the same, for swiveling the lever or feeler out of the way of obstructions, substantially as specified. 14th. The combination of a pendent, swinging contact lever or feeler, and a yielding rod for moving the lever or feeler, substantially as specified.

No. 37,687. Shears. (*Forces.*)

Francis Charles Crean, Joliette, Quebec, Canada, 27th October, 1891; 5 years.

Claim.—1st. The combination in a shears, of the shear-plates or cutters *e*, and *a'*, clamp-plate *c'*, casing *a*, *a*, adapted to have the lever *g* pivoted therein and forming a suitable handle to hold and guide the whole apparatus therewith, lever *g*, having head *p*, provided with slotted recesses *q*, socket *h* having sleeve *k*, with shaft *l*,

having disk or crank *m*, and crank-pin *n* adapted to cause the lever *g* to vibrate, the whole substantially as described. 2nd. The combination in a shears, of the shear-plate or cutters *e*, and *a'*, with casing *a*, *a*, and pivoted vibrating lever *g*, adapted to actuate the cutter *a'*, substantially as described.

No. 37,688. Automatic Safety Car Coupler.

(*Attelage de sûreté automatique pour chars.*)

Elijah Allen Gallup, Hancock, Iowa, U.S.A., 27th October, 1891; 5 years.

Claim.—In a car coupling, in combination, the stationary member *A* having curved flaring mouth, with recess *a* having overhanging edge *a'*, slot *a''*, sockets *a''*, *a''* at each side with curved shoulders *a'*, hole *a''*, and shoulder *D* forming a single casting, and movable jaw *B* forming the upper half of the draw-head, with tapered tooth *b*, and curved ears *b'*, *b'*, at each side of its rear end, forming a single casting, and a pin *C* for uniting the two members together, as described and shown for the purposes specified.

No. 37,689. Bolt Attachment.

(*Attache pour boulons.*)

George Batson Staples, Canton, Maine, U.S.A., 27th October, 1891; 5 years.

Claim.—1st. The combination of the bolt with a spring adapted to keep a pressure on the parts to be attached together, with cavities *d*, adapted to receive the ends of the springs, substantially as described. 2nd. The combination of the bolt provided with a spring adapted to keep a pressure upon the attachment of the bolt, substantially as described. 3rd. The combination of the bolt having washers, and a spring adapted to keep a pressure on the attachment of the bolt, substantially as described.

No. 37,690. Combined Switch and Signal Device for Railway Crossings.

(*Aiguille et signal combinés pour traverses de chemin de fer.*)

John Boucher, Belle River, Ontario, Canada, 27th October, 1891; 5 years.

Claim.—1st. An automatic switch and signal system for railway crossings, consisting of semaphore signals situated at a suitable distance from the crossing on the tracks approaching it, cables connecting said semaphores whereby they are operated simultaneously, cables connecting each semaphore with operating mechanism on one of the opposing approaching tracks, and means for operating said mechanism by a train approaching or leaving said crossing, substantially as described. 2nd. An automatic switch and signal system for railway crossings, consisting of semaphore signals situated at a suitable distance from the crossing on the tracks approaching it, cables connecting said semaphores whereby they are operated simultaneously, cables connecting each semaphore with operating mechanism on one of the opposite approaching tracks, means for operating said mechanism by a train approaching or leaving said crossing, and switches between said semaphores and crossing adapted to be operated by the cable connecting said semaphores, substantially as described. 3rd. A switch operating mechanism, consisting of a frame, a sliding block provided with a cam slot, a switch lever operated by said cam slot, and a cable for operating said sliding block, substantially as described. 4th. A switch operating mechanism, consisting of a frame, a sliding block provided with a cam slot, a transverse bar provided with a guide operating in said cam slot, an automatic operating mechanism consisting of a shaft, vertical trips adapted to be operated in either direction by a passing train, re-adjusting mechanism consisting of a vertical arm, a chain and a weight, and a cable connecting said automatic operating mechanism with the sliding block, substantially as described. 5th. In an automatic switch or signal operating mechanism, means for returning said mechanism to its normal position, consisting of a stand-pipe, a weight in said stand-pipe, and a chain running over a sheave connecting said weight with said mechanism, substantially as described. 6th. In an automatic switch or signal operating mechanism, means for returning said mechanism to its normal position, consisting of a stand-pipe, a weight in said stand-pipe, a coil spring supporting said weight, and a chain running over a sheave connecting said spring with said mechanism, substantially as described.

No. 37,691. Shoe Fastener. (*Attache de soulier.*)

Charles B. Horton, Newark, New Jersey, U.S.A., 27th October, 1891; 5 years.

Claim.—In a shoe-fastener, an L-shaped plate secured to the shoe, a holder for the lace, consisting of two prongs, one being rigid with the plate, and the other free to move, a loop rigid with the plate and surrounding the holder to support the free prong thereof, and a button rigid with the plate, said prongs being joined by a spring bend below said loop, substantially as shown.

No. 37,692. Apparatus for Scouring and Washing Skins and Wool and Analogous Materials. (*Appareil pour dégraisser et laver les peaux, la laine et autres matières analogues.*)

Thomas Burns, Edinburgh, Scotland, 27th October, 1891; 5 years.

Claim.—1st. In machinery or apparatus for scouring and washing skins, wool and analogous materials, the combination of a trough, through which a continual flow of water is caused to pass, squeezers

mounted at intervals along its length, entering, adjusting and guiding rollers, and leading band or rollers and guiding ropes for leading the material, means for the adjustment of said rollers, band and ropes and means for operating same as shown and described. 2nd. In machinery or apparatus for scouring and washing, the mode or method of leading the material to be scoured or washed through the said machinery which consists in carrying such material between rotating squeezing rollers, on a rotating endless band and providing rotating endless ropes for preventing the material getting out of place, all substantially as shown and described. 3rd. In machinery or apparatus for scouring and washing skins, wool and analogous materials, the combination of a trough, through which a continuous flow of water is caused to pass, in which such material is steeped, a line of rollers, some of which have even surfaces and others spur or grooved surfaces, arranged at one end of such trough for drawing the material from it, and means for rotating such rollers as shown and described. 4th. In combination with the steeping trough, a line of entering rollers, and means for rotating such rollers, a spur or grooved roller *S*, with means of rotation arranged at the end of such line of rollers and rotated in an opposite direction to the end roller of the line of entering rollers for the purpose set forth.

No. 37,693. Lawn Sprinkler.

(*Machine à arroser le gazon.*)

Charles C. Bonnette, Bay City, Michigan, U.S.A., 27th October, 1891; 5 years.

Claim.—1st. The combination of the nozzle for directing the flow of water, a sleeve passed over and projecting beyond the end of the nozzle, a vertical web arranged diametrically across the upper end of the sleeve, for dividing the flow of water, the distributing wings pivotally mounted to revolve with the said web on a vertical axis under the sleeve, and provided with concave and upwardly inclined under surfaces having their lower portions merging into the lateral surfaces of the web, substantially as set forth. 2nd. The combination in a lawn sprinkler of the nozzle *g*, the sleeve *j*, passed over the nozzle, the wings *l*, having the outwardly and upwardly inclined surfaces *n*, and joined together at their base by a web *m*, secured diametrically across the said sleeve, a spindle *o*, extending above the wings in vertical alignment with the sleeve, and means for supporting the upper end of the spindle, substantially as described. 3rd. In a lawn sprinkler the combination with the wings provided at their base with a transverse web *m*, and with the upwardly inclined concave under side *n*, and mounted on a centrally located pivotal support, and a nozzle *g*, located on one side of the said pivotal support for the purpose set forth substantially as described.

No. 37,694. Method of and Apparatus for the Production of Mineral Wool. (*Mode et appareil pour la production de laine minérale.*)

William Harrison Kennedy, Etna, Pennsylvania, U.S.A., 23th October, 1891; 5 years.

Claim.—1st. The herein described method of producing mineral wool, which consists in subjecting liquid slag to four series of blasts or currents of air or steam, two upper series of such air or steam currents converging toward each other in horizontal planes, and the plane of the lower series of air or steam currents converging vertically to those of the upper series, as set forth. 2nd. The herein described method of producing mineral wool, which consists in subjecting liquid slag to four series of blasts of air or steam, the line of flow of each current of steam or air of each series being parallel to the other currents of the same series and passing through minute perforations or passages, the two upper series of such blasts or currents converging in horizontal planes and the lower series of blasts or currents converging vertically to the line of the upper series of blasts, as set forth. 3rd. In the manufacture of mineral wool, the combination of a chest, means for supplying steam or air thereto, and four series of openings, of which the two upper series are inclined toward each other in a horizontal plane, the plane of the lower series being inclined vertically to that of the upper, substantially as described. 4th. In the manufacture of mineral wool, a converting device or apparatus provided with series of round perforations or jets, the jets of each series of which are parallel to each other, two of the series of perforations converging in a horizontal plane, and the other series of jets or perforations inclined vertically to that of the other series, substantially as and for the purpose set forth. 5th. In the manufacture of mineral wool, a converting apparatus provided with series of round perforations or jets inclined to the face of the steam chest, the jets of either series of which are parallel to each other, in combination with a tank for the reception of slag, substantially as described. 6th. In the manufacture of mineral wool, a converting apparatus provided with series of round perforations or jets inclined to the face of the steam chest, substantially as described, the jets of either series of which are parallel to each other, in combination with a tank for the reception of slag, and a scraper adapted to be operated by a lever for the removal of chilled slag from the pouring trough of said tank, substantially as and for the purpose herein described. 7th. In the manufacture of mineral wool, a converting device provided with a plurality of series of jets or perforations, the upper series of said jets or perforations being inclined to the face of the steam chest in horizontal planes, and the lower series of jets or perforations being inclined in vertical planes and meeting or intersecting with each other at a point between the inclination of the upper series of perforations or jets, substantially as described for the purpose set forth. 8th. In the manufacture of mineral wool, a converting apparatus provided with series of parallel round perforations or jets, the lower series of which conjoined form inclined planes for spreading the slag falling toward the same in a lateral direction, substantially as and for the purpose herein described.

No. 37,695. Hot Water Boiler.*(Calorifère à eau.)*

Hubert Root Ives, (assignee of John Herbert Wynne), both of Montreal, Quebec, Canada, 28th October, 1891; 5 years.

Claim.—In a hot water boiler, the combination of the annular base ring A, having its interior wall tapering and corrugated and its external wall provided with inlet nozzles, the annular ring C, the corrugated cylinder B, having vertical twin ducts by the corrugations communicating with the interior of the rings A, and B, and integrally formed therewith, and the hollow disk D, integrally formed with the ring C, and the internal spaces of the two parts communicating with each other freely and having the dished crown d^1 , flues d , and extension D^1 , with flange and openings d^2 , substantially as set forth.

No. 37,696. Electric Track Signal.*(Signal électrique pour voies ferrées.)*

Myron Wells Parrish, Detroit, and Horace B. Peck, Kalamazoo, both in Michigan, U. S. A., 28th October, 1891; 5 years.

Claim.—The combination of a track, tread bars on the outside of the rail of said track, at the side of and extending a little above the same, the end of the tread bars having the downward and outward curves, springs supporting said bars, signals, circuit wires leading from said signals and provided with the end separated bars or terminals, and the spring actuated rods provided at one end with a series of prongs for contracting with the terminals and the other end of said rods engaging the side of the tread bars, substantially as set forth.

No. 37,697. Cash Register. (Compte-monnaie.)

Hayden Articulating Cash Register Company, assignees of Austin Blanchard Hayden, all of Kansas City, Missouri, U.S.A., 28th October, 1891; 5 years.

Claim.—1st. In a cash register, a line of sliding finger keys, a rock shaft with a projection against which the respective key acts to turn it different distances and an indicating drum operated by the rock shaft, substantially as described and shown. 2nd. In a cash register, the rock shaft G, with rod or projection g , in combination with the indicating drum gear I to the shaft, and the series of finger keys having the projections so located as to move the rod g different distances. 3rd. In a cash register, the combination of an indicating drum, a series of finger keys and connections through which they turn the drum different distances, and a series of stop devices actuated by the respective keys to limit the motion imparted to the drum. 4th. In a cash register, the combination of a rank of finger keys, a rock shaft on which the key acts to turn the same different distances respectively, an arm on the rock shaft, and a series of stop wires connected to the respective keys and acting to arrest the arm at different points, whereby each key is enabled to turn the shaft to a distinctive position and there stop it. 5th. In combination with the indicating drum, its pinion the rock shaft provided with the sector pinion and rod g , and the sliding finger keys adapted to move the rod g , different distances, whereby each key is enabled to turn the drum to a distinctive position. 6th. In a cash register, a tier of sliding keys in combination with the gravitating bar K, and guides to cause its lateral motion, whereby it is enabled to return either of the keys to the normal position. 7th. In combination with the tier of sliding keys, a gravitating plate adapted to engage and hold them when they are moved inward. 8th. In a cash register, a line of finger keys, each notched or shouldered, and a locking bar common to all the keys to engage and hold them when they are advanced to effect the registration. 9th. In a cash register, a rotary registering drum, a series of finger keys and intermediate connections through which they turn the drum different distances, a locking device to hold the keys when advanced, and means to restore the parts when unlocked, in combination with a movable till cover acting to disengage the key-locking device. 10th. In a cash register, a movable till cover, a registering mechanism and intermediate devices through which the cover acts in opening to restore the registering mechanism to its normal condition. 11th. In combination with a series of finger keys, a registering mechanism connected therewith and operated thereby, locking devices to temporarily hold the keys when actuated, means to restore the parts when released, a movable till cover which acts in opening to disengage said locking devices, and a device connected with the registering mechanism to hold the till cover open until the registering keys are again actuated to effect a registration. 12th. In a cash register, the tiers of sliding finger keys with beveled ends, and studs g^b , in combination with the rock shaft G, provided with rod g^1 , pinion g^2 , and arm g^3 , the indicating drum geared to said pinion, the pawl g^4 , carried by arm g^3 , the toothed register wheel with which the pawl engages and the stop wire l , acted upon by the respective keys, whereby the drum is caused to indicate temporarily the amount of the last sale. 13th. The tier of finger keys, the rock shaft G, having the rod or projection through which it is turned different distances by the respective keys, the drum H, geared to the shaft, the pawl carrying arm attached to the shaft, and the toothed indicator wheel engaged by the pawl. 14th. In a cash register, the registering actuating keys, their locking bars, and the bail or bar M, connected therewith, in combination with the dog attached to the bail to lock the till cover, the sliding till cover, its closing springs and the pivoted finger through which the till cover acts to raise the bail, whereby the opening of the cover is caused to restore the registering devices to their normal position, and the actuation of the registering devices caused to close the cover. 15th. In combination with the bell, its striker, and the pivoted striker actuating plate, the sliding till cover arranged to operate the plate. 16th. In combination with the till cover and the striker actuated thereby, the bell and its sustaining crank having a projected portion through which it may be operated to carry the bell to an inactive position. 17th. In a cash register, the combination of an indicator or register, a shutter to conceal the registration from view, and a sliding till cover by which the shutter is operated.

No. 37,698. Cash Register. (Compte-monnaie.)

Hayden Articulating Cash Register Company, assignees of Austin Blanchard Hayden, all of Kansas City, Missouri, U.S.A., 28th October, 1891; 5 years.

Claim.—1st. In combination with registering devices, and finger keys to actuate the same, the sliding till cover and a locking device to hold it shut brought into action by the registering movement of the keys. 2nd. A registering mechanism and finger keys to actuate the same, in combination with till locking devices actuated by the registering movement of the keys, and an automatic locking device to hold the actuated keys until released by the attendant. 3rd. In combination with a registering mechanism and finger keys to actuate the same, an automatic lock to hold the keys which are actuated and an automatic lock actuated by said keys to prevent the action of the remaining keys in the same group whereby the registration is temporarily maintained and registration of more than one amount by keys in the same group prevented. 4th. The till cover and its closing spring, in combination with the finger keys and a registering mechanism operated thereby, the bars K, to lock the keys inward, the bail L, connected to the bars K, and arranged to lock the till cover open, the bars D, to lock the cover shut, means through which the ingoing keys act to engage said bars with the cover, and a manual device for lifting the bail at will. 5th. In combination with two tiers of finger keys, all acting to turn one indicator drum, a locking device common to all the keys, acting when one key is moved to prevent movement of the others. 6th. The combination with a cash register and a phonograph adapted to announce the amount registered. 7th. A cash register having a registering mechanism with a series of finger keys representing different values, in combination with a phonograph having permanent records of the values represented by the keys, and intermediate connections through which the respective keys act to bring into action the corresponding record that the phonograph may announce audibly the registration. 8th. In combination with a cash register, a phonograph containing a record of amounts to be registered and arranged to be adjusted by the registering mechanism, a till cover and connections through which it actuates the phonograph. 9th. In combination with a registering mechanism, a phonographic record of the various values to be registered, means for automatically adjusting the position of the record according to the value of the keys operated, and a reproducer movable over the record to announce therefrom the amount of the registration. 10th. A phonographic record surface having thereon in parallel lines independent records, in combination with a reproducer guided to travel lengthwise of the record, and means for a lateral adjustment of the reproducer in relation to the record to the end that either of the records may be reproduced at will. 11th. In combination with the reciprocating reproducer, the phonographic record sections, provided respectively with the dollar records, the cent records, and the conjunction and movable in relation to each other. 12th. In combination with the three oscillating record sections, the connecting device operated by one of the sections, substantially as shown. 13th. In combination with the reciprocating recorder, the elongated record over which it travels, and automatic means for separating the recorder and record during the movement of the latter in one direction. 14th. In combination with the recorder and means for guiding the same to and fro, the record body pivoted and adapted to be turned out of the path of the recorder during the return movement of the latter. 15th. In combination with the finger keys and the vertical rock shaft F, operated thereby, the segment having the series of parallel records, and connections through which the shaft F, adjusts the record, and the recorder mounted to travel over the record. 16th. In combination with the traveling reproducer and the divided record surface, the guide rail having the elevators to lift the reproducer over the points in the record. 17th. In a phonograph, a fixed record surface, in combination with a reproducer mounted to travel thereover. 18th. A phonograph record surface having independent parallel records, in combination with a reproducer, and means for adjusting the parts at will to reproduce a selected record. 19th. In combination with a reproducer, a phonographic record consisting of sections adjustable in relation to each other, so that they may be used independently or jointly. 20th. In combination with a reproducer to operate thereon, a phonographic record consisting of a plurality of sections movable in relation to each other, and each provided with a series of independent records, so that any record of one section may be reproduced in combination with either record of the adjacent section. 21st. The combination with a phonographic mechanism and a spring through which it is actuated, of a retarding device to limit its speed.

No. 37,699. Die for Embossing Impressible Materials. (Cousinnet pour gaufrer les matières d'impressions.)

The Kitchell Embossing Company, Plainfield, New Jersey, assignees of Hudson Mindell Kitchell, Brooklyn, New York, U.S.A., 28th October, 1891; 5 years.

Claim.—The herein described hard flat flexible die, the body of which is a hard flat flexible material, such as card-board, and the engraved surface of which is formed of a hardened plastic material composed of the following proportions: dissolved glue, one pound; water, one gallon; molasses, one pint; plaster-of-paris, twenty pounds, whereby it may be passed between rolls without cracking, substantially as set forth.

No. 37,700. Electric Soldering Irons.*(Fer électrique à souder.)*

Butterfield-Mitchell Electric Heating Company, Boston, assignees of Willis Mitchell, Malden, all in Massachusetts, U. S. A., 28th October, 1891; 5 years.

Claim.—1st. In an electric soldering iron, the combination of a wire forming part of an electric circuit and wound in concentric helices which are separated by strips of insulating material, with an

enclosing casing for said helices and a soldering point in proximity thereto, so as to be heated thereby, substantially as set forth. 2nd. In combination with handle A, having passage *a*, the tubular stem B fitted into said passage, the rod or stem D in alignment therewith, a fastening for said parts B, D, a casing F sleeved on said rod D, a heating cylinder composed of coils or helices of wire wound on insulating material and arranged within said casing, and a cord enclosing the wire leading from the beginning and end of said cylinder, the said cord extending out through said tool, so that all parts of the wire are protected, and the said wire being made to form part of an electric circuit for the purpose set forth. 3rd. A wire forming part of an electric circuit and wound into a series of helices constituting a heating cylinder, in combination with a soldering iron constructed with tubular parts enclosing the said wire, and a central rod connected to the point and the handle, substantially as set forth. 4th. In combination with the casing F, having a front plate P, an electric heater enclosed in the said casing, a point E bolted to said plate and internally screw-tapped as shown, a rod screwed into said head, a handle, connections between said handle and rod, and wires running from said heater to a source of electricity, substantially as set forth.

No. 37,701. Thrashing Machine.

(Machine à battre.)

Julius Szawinsky and Stelian Grozea, both of Braila, Roumania, 28th October, 1891; 5 years.

Claim.—1st. In combination with a thrashing machine, an apparatus for hulling, polishing and cleaning barley, which is operated by the shift of the thrashing machine and arranged in such a manner that the grains separated from the straw in the thrashing machine may be conducted either through the said apparatus, or by the side of the same to the outside of the machine, substantially as described. 2nd. The arrangement of an inclined slide or flap L in front of the hulling, polishing, and cleaning apparatus, so that the grains which fall upon the said slide or flap are conducted to the inlet H, which can be closed by a slide, substantially as described. 3rd. In combination with a thrashing machine, an apparatus for hulling and polishing barley, into which the grains are conducted, comprising the casing G, provided with the openings H and J, and the drum F, having vanes *f* arranged spirally upon its periphery, whereby the grains dropping at H upon the drum G are gradually transported to the opening J, substantially as described. 4th. The arrangement of fine and sharp teeth upon the inner surface of the casing G and upon the outer surface of the drum F, for hulling and polishing the grains between the said casing and drum, substantially as described. 5th. In combination with the drum F and casing G for hulling and polishing grains of barley, a shaking device K having one or more sieves, the hulled and polished grains being exposed during the sifting operation to a current of air produced by the fan V, for carrying away the chaff, substantially as described.

No. 37,702. Seam Pressing Frame.

(Appareil pour presser les coutures.)

Alice Jane Wood, New York, State of New York, U. S. A., 29th October, 1891; 5 years.

Claim.—1st. The herein described seam-pressing frame, consisting of a pedestal, a narrow metallic arc-shaped bar centrally supported on said pedestal, and a narrow wooden protective sheathing or veneer secured to the upper edge of the arc-shaped bar and convex transversely and longitudinally, substantially as and for the purpose described. 2nd. The combination, with the bar or support C, of the disk E, having an open-ended slot F extended from the periphery of said disk toward the center, whereby it is detachably mounted in a vertical position on said support, substantially as and for the purpose described.

No. 37,703. Vehicle Pole. (Timon de voiture.)

Horace Luman Kingsley, Racine, Wisconsin, U.S.A., 23th October 1891; 5 years.

Claim.—1st. In a vehicle-pole, the combination with a straight wooden pole, of a pair of metallic supports curved upward and outward, and then inward against said pole, and riveted or bolted thereto, and an inflexible brace rigidly connecting the said supports together, and secured to the projecting rear end of said pole, substantially as set forth. 2nd. In a vehicle-pole, the combination with a straight wooden pole grooved out on its sides near its rear end, of a pair of supports formed of T-iron or angle-iron, said supports being curved upward and then inward against the sides of the pole, and there secured, and the adjacent horizontal flanges of said iron supports entering the said grooves in the pole, with the vertical flanges of said iron supports fitted snugly against the said sides of the said pole, substantially as set forth.

No. 37,704. Car Coupler. (Attelage de chars.)

Frank A. Fox, San Francisco, California, U.S.A., 29th October, 1891; 5 years.

Claim.—1st. The combination with a coupler head provided with a vertical opening, of a locking pin adapted to move obliquely therein said bolt riding up or down upon inwardly projecting bolts or lugs, as and for the purpose set forth. 2nd. The combination with a coupler head, provided with a vertical opening, of a locking pin or bolt having inclined openings formed therein, bolts or pins extending through the coupler and locking pin openings, the locking pin

adapted to ride obliquely up or down upon said bolts, as and for the purpose set forth. 3rd. The combination with a coupling head, of the locking pin or bolt moving within a vertical opening formed in the coupler head, lugs or bolts projecting within said opening upon which the locking pin rides obliquely, and of the swinging tail piece, provided with the beveled or inclined face, adapted to raise the locking pin upon its rear thrust, as and for the purpose set forth.

No. 37,705. Car Coupler. (Attelage de chars.)

Frank A. Fox, San Francisco, California, U.S.A., 29th October, 1891; 5 years.

Claim.—1st. The combination with a coupling head, of the rearwardly extending tail piece, and of the locking pin working within said tail piece and adapted with the rear thrust thereof to move inward and outward, as and for the purpose set forth. 2nd. The combination with a car coupler, of the swinging tail piece, said piece having its outer end grooved, locking pin working within said open end, and of the swinging lever for operating said pin for uncoupling of the heads, as and for the purpose set forth. 3rd. The combination with the coupling head provided with an inclined recessed wall, of the swinging tail piece, locking pin working within end of said tail and adapted upon the rear thrust thereof to move inward and outward, and of the lever for unlocking said pin, as and for the purpose set forth. 4th. The combination with a recessed coupling head, of the swinging tail piece, inclined guide groove formed in the outer end thereof, and of the locking pin working within the grooved end, upon the rear thrust of said tail piece, as and for the purpose set forth. 5th. In a car coupling, the combination with the recessed coupling head, rearwardly swinging tail piece provided with an end opening, locking pin working within said open end, and of the lever for unlocking said pin, as and for the purpose set forth. 6th. In a car coupling, having an inclined recessed face, swinging tail piece working therein, opening formed in end thereof, locking pin working therein, said pin adapted to move in or out with rear thrust of the tail piece, lock pin opening formed in the coupler head within which said pin moves when the heads are locked, and of the lever for unlocking said heads, as and for the purpose set forth. 7th. A car coupler of the hinged leaf type having the arms of the coupler head for the reception of the knuckle joint constructed on curved lines or rounding, substantially as described. 8th. A car coupler of the knuckle joint type having the angles of the outside corner recesses of the knuckle joint made on circular lines or rounding, substantially as described. 9th. A car coupler of the hinged leaf type having the angles of the coupler head arms and the angles of the outside corner recesses of the knuckle joint made on circular lines or rounding, substantially as described. 10th. A car coupling of the hinged leaf type having the link opening constructed on rounding or curved lines, as and for the purpose set forth. 11th. A car coupling of the hinged leaf type having the angles of the link opening and the angles of the outside corner recesses made on circular lines or rounding, as and for the purpose set forth.

No. 37,706. Car Coupler. (Attelage de chars.)

James Lawrench Welsh, Birmingham, Alabama, U.S.A., 31st October, 1891; 5 years.

Claim.—In a car coupling, the combination with the draw head and at the mouth thereof a hook or catch of the "twin" type, of a strap secured at its rear end to a suitable support and standing parallel with the draw head, with its front end standing beneath said mouth out of the central line of the car and nearer the bottom of the mouth than the vertical height of the head, as and for the purpose hereinbefore set forth.

No. 37,707. Shoe Lace Fastener.

(Agrafe de soulier.)

James Dickson, Jr., Watstown, Pennsylvania, U.S.A., 31st October, 1891; 5 years.

Claim.—The shoe or other article, as described, having the vertical alternating lace receiving eyelets along its opening and the additional horizontal series of eyelets, the lace secured at the bottom of the opening, passed through the said vertical alternating eyelets and through any one of the horizontal series of eyelets, and the tubular tap 9, secured to the end of the lace and in the rear of its point of secureance, having the engaging extension or tail, 10, for the purpose substantially as specified.

No. 37,708. Locomotive Cab.

(Voiture de locomotive.)

Frank Calkins Bond, Port Jarvis, New York, U.S.A., 31st October, 1891; 5 years.

Claim.—1st. The combination of the locomotive cab having catch E¹, and the arm rest F, having pin E², of the hinged guard window, and the fastening E, pivoted at *e*, to the guard window and having a hinged plate arranged when the window is closed to fit in the catch E¹, and provided with an opening arranged to fit over the pin E², when the window is opened whereby such window may be secured in both its open and closed positions, all substantially as and for the purpose set forth. 2nd. In a locomotive cab, the combination, substantially as herein described, of the forward and rear windows, the arm rest arranged alongside the rear window, the guard window arranged outside of and independent of said front and rear windows, and hinged at one edge to the cab side in advance of the arm rest and arranged to open at right angles to the cab side and to bear when open against the arm rest and securing devices by which the said guard window may be held in both its open and closed positions all substantially as and for the purposes set forth.

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

2309. JOHN FORMAN, 2nd five years of No. 25,184, from the 22nd day of October, 1891. Improvements in Block Pressers for Paper Pulp Machines, 2nd October, 1891.
2310. JOHN FORMAN, 2nd five years of No. 25,186, from the 23rd day of October, 1891. Improvements in Block Pressers for Paper Pulp Mills, 2nd October, 1891.
2311. HENRY GARDNER WRIGHT KITTREDGE, 2nd five years of No. 25,089, from the 7th day of October, 1891. Improvement in the Art or Process of Refining Illuminating Petroleum, 3rd October, 1891.
2312. JOHN E. STUART, 2nd five years of No. 25,094, from the 9th day of October, 1891. Improvements in Window Screen Fasteners, 3rd October, 1891.
2313. JAY S. CORBIN, 2nd five years of No. 21,481, from the 21st day of April, 1891. Improvements in Combined Harrows and Seeders, 5th October, 1891.
2314. CHARLES JACKSON, 2nd five years of No. 25,371, from the 16th day of November, 1891. Improvements in Fanning Mills, 6th October, 1891.
2315. ROBERT MAJOR BAILEY, Jr., 2nd five years of No. 25,298, from the 13th day of October, 1891. Improvements on Valve Gear or Steam and other Engines, 6th October, 1891.
2316. SARAH C. ALLINGTON, 2nd five years of No. 25,037, from the 6th day of October, 1891. Improvements in Band Saw Machines, 6th October, 1891.
2317. SARAH C. ALLINGTON, 2nd five years of No. 25,038, from the 6th day of October, 1891. Improvements in Band Saw Guides, 6th October, 1891.
2318. EDWARD PLANTA N. SBIF, 2nd five years of No. 25,096, from the 9th day of October, 1891. Improvements in the Treatment of Hides and Skins for Tanning and other purposes, 6th October, 1891.
2319. JAMES MILNE and JOSEPH JAY MILNE, 2nd and 3rd five years of No. 25, 86, from the 4th day of December, 1891. Improvements in Wire Rope Couplers, 7th October, 1891.
2320. THE TUBULAR LOCK SYNDICATE, (assignee), 2nd five years of No. 25,130, from the 15th day of October, 1891. Improvements in Tubular Cased Mortise and other Locks and Latches, 9th October, 1891.
2321. JOHN FORMAN, 2nd five years of No. 25,321, from the 20th day of January, 1892. Improvements in Wood Pulp Machines, 10th October, 1891.
2322. JOHN MOREHEAD, 2nd five years of No. 25,133, from the 16th day of October, 1891. Improvements in Steam Traps, 10th October, 1891.
2323. GEORGE HENRY PHELPS, 3rd five years of No. 13,732, from the 20th day of November, 1891. Improvements on Shoulder and Back Bracing Suspenders, 12th October, 1891.
2324. ALEXANDER FIELD WARD, 2nd five years of No. 25,144, from the 16th day of October, 1891. Improvements on Hoop Coilers, 12th October, 1891.
2325. GEORGE BUTTERFIELD, 2nd five years of No. 25,114, from the 13th day of October, 1891. Improvements in Directories, 12th October, 1891.
2326. WILLISTON I. ALVORD, 2nd five years of No. 25,116, from the 13th day of October, 1891. Improvements in Knob Attachments, 13th October, 1891.
2327. WILLISTON I. ALVORD, 2nd five years of No. 25,117, from the 13th day of October, 1891. Improvements in Knob Attachments, 13th October, 1891.
2328. WILLISTON I. ALVORD, 2nd five years of No. 25,118, from the 13th day of October, 1891. Improvements in Knob Attachments, 13th October, 1891.
2329. WILLISTON I. ALVORD, 2nd five years of No. 25,119, from the 14th day of October, 1891. Improvements in Locks and Latches, 13th October, 1891.
2330. KRISTIAN GERHARD DAHL, 2nd five years of No. 25,115, from the 13th day of October, 1891. Improvements or Process for Preserving Milk, 13th October, 1891.
2331. DANIEL CONBOY, 2nd five years of No. 25,141, from the 16th day of October, 1891. Improvements in Buggy Tops, 14th October, 1891.
2332. JOHN ALBERT LIDBECK and JOHN JORDAN GERRISH, 2nd five years of No. 25,170, from the 21st day of October, 1891. Improvements in Railway Gates, 14th October, 1891.
2333. SINGER MANUFACTURING COMPANY, (assignees), 2nd and 3rd five years of No. 2,153, from the 16th day of October, 1891. Improvements in Sewing Machines, 14th October, 1891.
2334. THOMAS GRIER COOK, 2nd five years of No. 25,604, from the 22nd day of December, 1891. Improvements in Spring Tooth Harrows, 15th October, 1891.
2335. BELA BRONCS, 2nd five years of No. 25,188, from the 23rd day of October, 1891. Improvements in the manufacture of Explosive Compounds, 15th October, 1891.
2336. GUSTAVUS WASHINGTON INGALLS, 2nd five years of No. 25,523, from the 9th day of December, 1891. Improvements in Octave Couplers for Reed Organs and Similar Musical Instruments, 17th October, 1891.
2337. FRANCIS MARION RITES, 2nd and 3rd five years of No. 25,352, from the 13th day of November, 1891. Improvements in Steam Engine Governors, 17th October, 1891.
2338. FRANCIS MARION RITES, 2nd and 3rd five years of No. 25,356, from the 13th day of November, 1891. Improvements in Steam Engine Governors 17th October, 1891.
2339. HENRY HERMAN WESTINGHOUSE, 2nd and 3rd five years of No. 25,351, from the 13th day of November, 1891. Improvements in Steam Engines, 17th October, 1891.
2340. HENRY HERMAN WESTINGHOUSE, 2nd and 3rd five years of No. 25,354, from the 13th day of November, 1891. Improvements in Steam Engines, 17th October, 1891.
2341. SAMUEL H. FISH, 2nd five years of No. 25,260, from the 29th day of October, 1891. Improvements in Potato Planters, 19th October, 1891.
2342. TERRY JOHN HUTTON, 2nd five years of No. 25,194, from the 23rd day of October, 1891. Improvements in Medicine Chests, 19th October, 1891.
2343. RICHARD MORRIS, 3rd five years of No. 13,585, from the 20th day of October, 1891. Improved method of and Apparatus for Controlling the Accuracy of Sighting and Aim in Rifle Drill or Practice, 19th October, 1891.
2344. HUGH BAINES, 2nd five years of No. 25,362, from the 16th day of November, 1891. Improvements on Car Trucks, 21st October, 1891.
2345. MYRON RODNEY HUBBELL, 2nd five years of No. 25,193, from the 23rd day of October, 1891. Improvements in Reversible Plows, 22nd October, 1891.
2346. ISAAC BENJAMIN KLEINERT, 2nd five years of No. 25,410, from the 25th day of November, 1891. Improvements in a Method and Machine for Forming Articles of Flexible Material, 2nd October, 1891.
2347. HENRY HAMMOND, 3rd five years of No. 22,676, from the 23rd day of October, 1895. Improvement in Manufacture of Axes, 23rd October, 1891.
2348. JOHN W. DOWD and STEPHEN D. FISHER, 2nd and 3rd five years of No. 25,348, from the 12th day of November, 1891. Improvements on Dry Closets, 23rd October, 1891.
2349. WILLIAM F. SHEDD, 2nd five years of No. 25,241, from the 27th day of October, 1891. Improvements in Farm Fences, 24th October, 1891.
2350. HARRY GREENLAND, 2nd five years of No. 25,217, from the 25th day of October, 1891. Improvements in Refrigerators, 24th October, 1891.
2351. ROBERT DAVIS and JOHN WESLEY MILLAR, 2nd five years of No. 25,237, from the 27th day of October, 1891. Improvements on Whiffletrees, 25th October, 1891.
2352. WILLIAM H. MAJOR, 2nd five years of No. 25,259, from the 29th day of October, 1891. Improvements in Pastry Cabinets, 28th October, 1891.
2353. WILLIAM SPRAGUE POST and HOWARD DEWOLFE SAWYER, 2nd five years of No. 25,262, from the 29th day of October, 1891. Improvements on Steam Boilers and Furnaces, 28th October, 1891.
2354. JOSEPH ROY, 3rd five years of No. 13,617, from the 31st day of October, 1891. Improvements on Range Stoves, 31st October, 1891.

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4161. WILLIAM PETERMAN, of New York, N. Y., U. S. A. Insect Powder, 2nd October, 1891.
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4163. } ISAAC BENJAMIN KLEINERT, of New York, N. Y.,
4164. } U.S.A. Dress Shields. 6th October,
4165. } 1891.
4166. GEORGE SAUNIER, of Rouillac, Department of Charente, France. Brandy, 6th October, 1891.
4167. DANIEL SIMMONS PERRIN, of London, Ont. Cough Drops and Cough Candy, 8th October, 1891.
4168. LOUIS OVIDE GROTHÉ, of Montreal, Que. Cigars, 9th October, 1891.
4169. JOHN McLEAN FRENCH, of Toronto, Ont. Paints and Varnishes, 10th October, 1891.
4170. HENRY L. PIERCE, of Boston, Massachusetts, U.S.A. Cocoa and Chocolate, 12th October, 1891.
4171. } T. and H. SMITH & CO., of 21 Duke St., Edinburgh, Scotland, and 12 Worship
4172. } St., London, England. Essence of Coffee and Chicory.
Essence of Coffee, 14th October, 1891.
4173. KAMAME MEDICINE CO., of Windsor, Ont. Proprietary Medicines, 16th October, 1891.
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4175. } DELAFIELD, MCGOVERN & CO., of New York, N.Y.,
4176. } U. S. A. Preserved Lobster.
Wines and Liquors, 19th October, 1891.
4177. WHALEY, ROYCE & CO., of Toronto, Ont. Musical Instruments, 20th October, 1891.
4178. B. GOLDSTEIN & CO., of Montreal, Que. Cigars, 21st October, 1891.
4179. ALBERT M. PERRIN, of Yarmouth, N.S. The Dr. Joseph D. Davis Remedies, 22nd October, 1891.
4180. JAMES B. HATTIE, of Halifax, N.S. Medicine, (Powell's Pimple Pills), 27th October, 1891.
4181. CHARLES H. BESLEY, of Chicago, Illinois, U. S. A. Oil and Grease for Lubricating Purposes and the Like, 29th October, 1891.
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4183. } Water Closets, 30th October, 1891.
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6119. THE DUDE OF THE DASHING QUEEN'S OWN, by W. S. St. Clair, Toronto, Ont., 1st October, 1891.
6120. MERMAID WALTZ. for Piano, by C. F. Byrne. Whaley, Royce & Co., Toronto, Ont., 1st October, 1891.
6121. THE BELL TELEPHONE COMPANY OF CANADA, TORONTO EXCHANGE, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, SEPTEMBER, 1891. The Bell Telephone Company of Canada, Montreal, Que., 2nd October, 1891.
6122. BOUQUET OF KINDERGARTEN AND PRIMARY SONGS WITH NOTES AND GESTURES. Introduction by Mrs. J. L. Hughes. Selby & Co., Toronto, Ont., 2nd October, 1891.
6123. McPHILLIPS BROTHERS' MAP OF PART OF THE CITY OF WINNIPEG, AND PARTS OF THE PARISHES OF ST. BONIFACE, ST. JOHN AND KILDONAN, Manitoba. George McPhillips, Windsor, Ont., Frank and Robert Charles McPhillips, Winnipeg, Man., 6th October, 1891.
6124. ANNIE LAURIE. (Scottish Song). Transcribed for Piano, by Chas. Williamson. }
6125. BIRDS OF SPRING. (Oiseaux de Printemps). Sketch for the Pianoforte, by }
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6126. PEEP O' DAY SCHOTTISCHE. Solo for Piano, by Charles Johnstone. }
I. Suckling & Sons, Toronto, Ont., 7th October, 1891. }
6127. SEA KING WALTZ, for Piano. Arranged by Charles Bohner. Whaley, Royce & Co., Toronto, Ont., 9th October, 1891.
6128. ASK MARGOT. Song. Words by Frederic E. Weatherly. Music by Joseph L. }
Roeckel. }
6129. THE GALLANT SALAMANDER. Song. Words by Clifton Bingham. Music }
by D'Auvergne Barnard. }
The Anglo-Canadian Music Publishers' Association, L'd., }
London, England, 10th October, 1891. }
6130. THE CANADIAN ALBUM, Men of Canada; or, Success by Example. Part 4, }
Volume I. }
6131. THE CANADIAN ALBUM, Men of Canada; or, Success by Example. Part 5, }
Volume I. }
Edited by Rev. Wm. Cochrane, D. D.; Thomas S. Linscott, }
Brantford, Ont., 12th October, 1891. }
6132. FARMLIEN. (form). John A. Belt, Burlington, Ont., 13th October, 1891.
6133. THE WILD BIRD'S CONFESSION. Song for Mezzo Soprano with Violin Obliga- }
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VELOPMENT OF THE DOCTRINES OF EQUITY, by A. H. }
Marsh, Q. C. }
Carswell & Co., Toronto, Ont., 15th October, 1891. }
6137. THE ONTARIO REPORTS, VOLUME XX, containing Reports of Cases decided in }
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the High Court of Justice for Ontario. Editor: James F. Smith, }
Q. C.; Reporters: Queen's Bench Division, E. B. Brown; }
Chancery Division, A. H. F. Lefroy, George A. Boomer; Com- }
mon Pleas Division, George F. Harman; Barristers-at-law. The }
Law Society of Upper Canada, Toronto, Ont., 16th October, 1891.
6138. MARATHON. Grand March for the Pianoforte, by J. H. Wallis. The Anglo- }
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6139. TORONTO POCKET STREET GUIDE, 1891. Stewart Malcomson, Publisher, }
Toronto, Ont., 20th October, 1891.
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Publishers' Association, L'd., London, England, 21st October, }
1891.
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6143. CARTOGRAPHIE, (livre). Les Soeurs de la Congregation de Notre Dame de Montreal, Que., 22 Octobre, 1891.
6144. THE GIPSIES' REVEL, for the Piano, by Wilhelm Kuhe. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 23rd October, 1891.
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 6147. NOTES ON THE HIGH SCHOOL READER, by Luther E. Embree. }
 The Rose Publishing Co., L'd., Toronto, Ont., 23rd October, 1891. }
6148. MANUEL DE L'INDUSTRIE LAITIÈRE AU CANADA, par E. MacCarthy. J. A. Langlais, Québec, Qué., 26 Octobre, 1891.
6149. NABOTH'S VINEYARD, by E. G. Somerville and Martin Ross. Wm. Bryce, Toronto, Ont., 26th October, 1891.
6150. THE MANITOULIN GRAND MARCH, by Mrs. A. J. Wilson, Kagawong, Ont., 27th October, 1891.
6151. FAIRY FOOTSTEPS. Mazurka Brillante for the Pianoforte, by Langton Williams. }
 6152. LA JOYEUSE. Marche Militaire, pour Piano, par Gerald Lascelles. }
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 6154. MARCHE JOYEUSE. D'après une Melodie Favorite, pour Piano, par Michael Watson. }
 6155. MENUET MODERNE, pour Piano, par Paul Beaumont. }
 6156. TARANTELLA IN E MINOR, for the Piano, by Henri Stanislaus. }
 The Anglo-Canadian Music Publishers' Association, L'd., London, England, 28th October, 1891. }
6157. CHANT DES SIRÈNES. Melodie pour Piano, par Boyton Smith. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 30th October, 1891.
6158. TORONTO DIRECTORY: WHERE TO GO: WHAT TO SEE: WHAT TO DO: Temporary Copyright of a book which is now being preliminarily published in separate articles in "The Toronto Mail." The Mail Printing Co., Toronto, Ont., 30th October, 1891.

THE
CANADIAN PATENT OFFICE RECORD

ILLUSTRATIONS.

Vol. XIX.

OCTOBER, 1891.

No. 10.

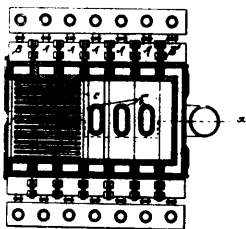


Fig. 3.

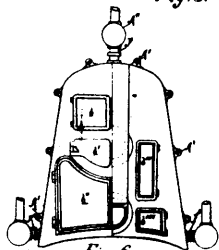


Fig. 6.



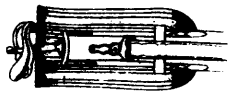
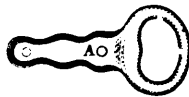
Fig. 4.



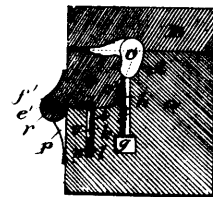
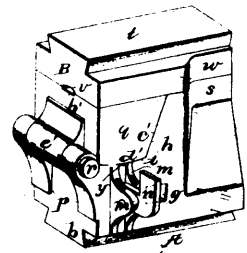
Fig. 5.

37480

Galt's Furnace.



37483 Gullidge's Metal Bearer Loop for Har-
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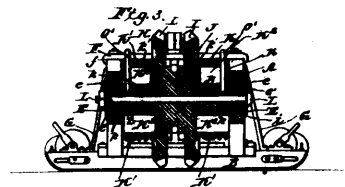
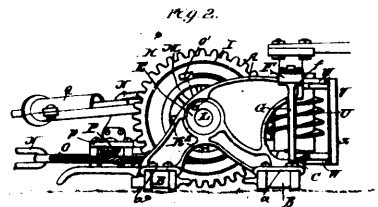
37484 Renovo's Die for Forging Car Coupling
Hooks.



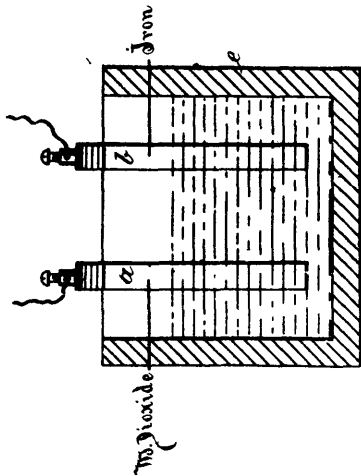
37485 Linsert and Arland's Artificial Foot.



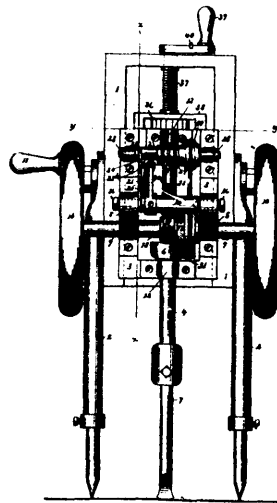
37486 Young's Brush.



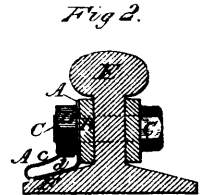
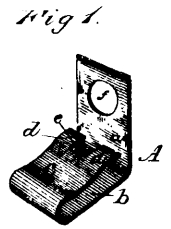
37487 Cornelius' Stump Extractor.



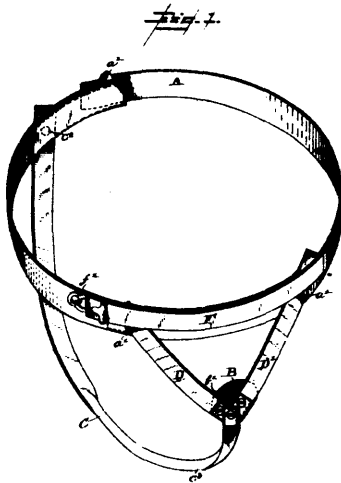
37488 Hollingshead's Secondary Battery.



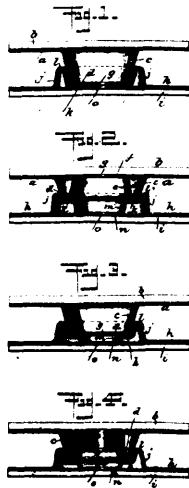
37489 Bromfield's Hand Rock Drill.



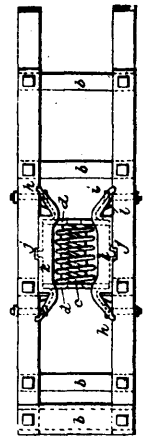
37491 Jackman's Nut Lock.



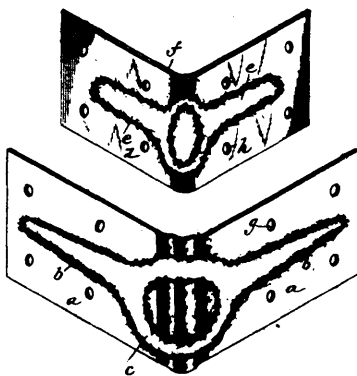
37492 Marvin's Truss.



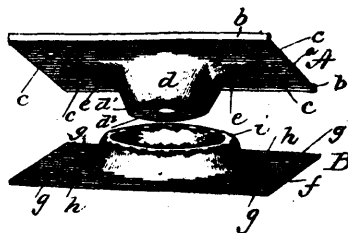
37493 Schoen's Center Bearing Plates for Railway Cars.



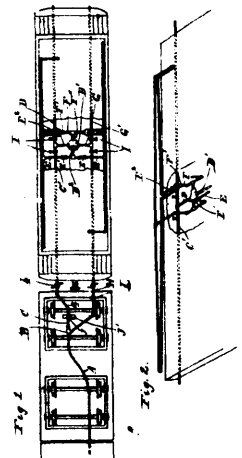
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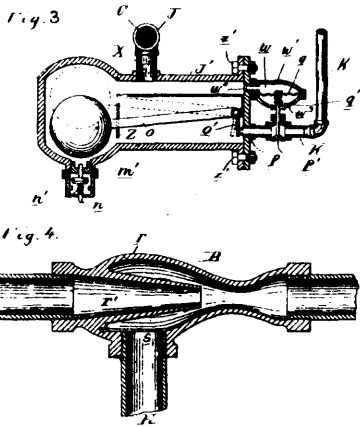
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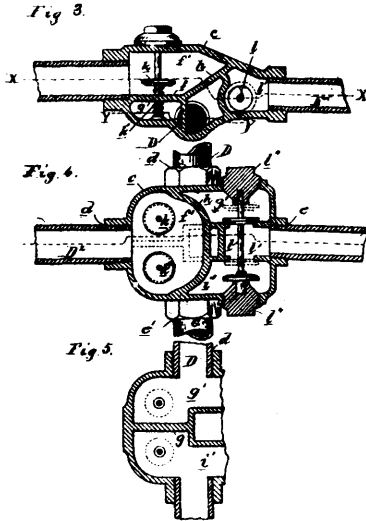
37496 Schoen's Center Bearing Plate for Railway Cars.



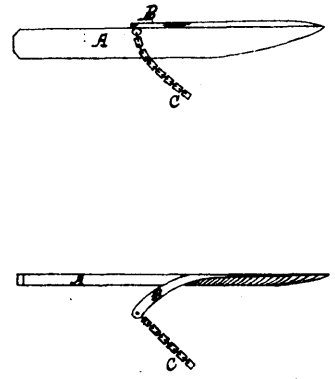
37497 McElroy's Steam Heating Apparatus.



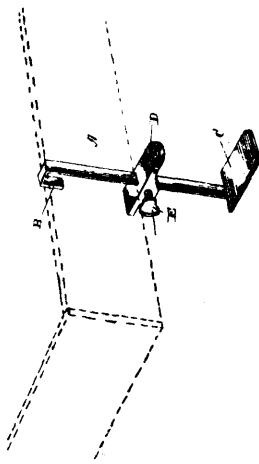
37448 McElroy's Steam Pump.



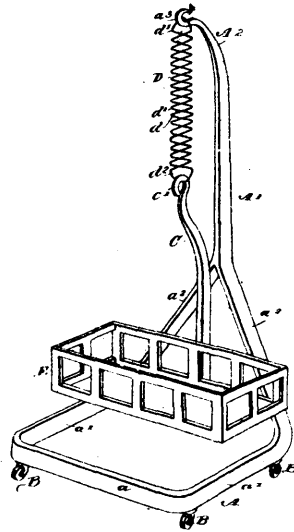
37499 McElroy's Valve.



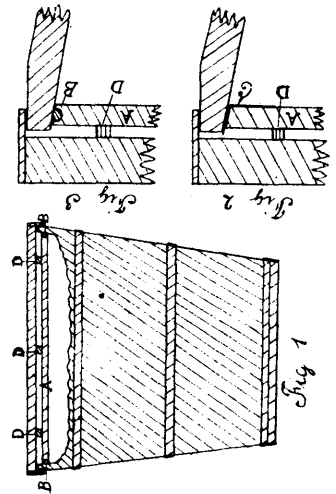
37509 Smith's Plow Coulters.



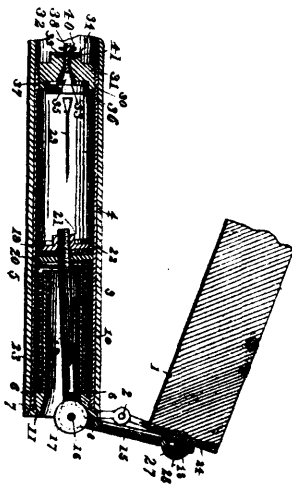
37501 Roden's Waggon Step.



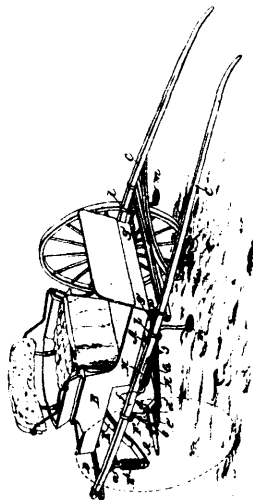
37502 Barnhart's Baby Jumper.



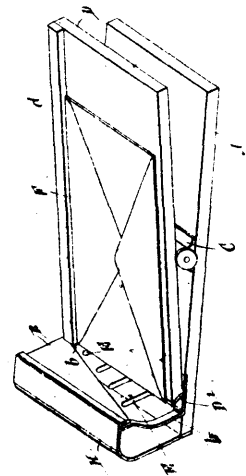
37503 Ivor's Cover for Butter Tubs, etc.



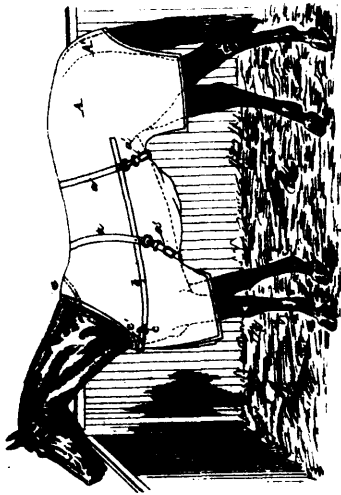
37504 Dudden's Pneumatic Door Check.



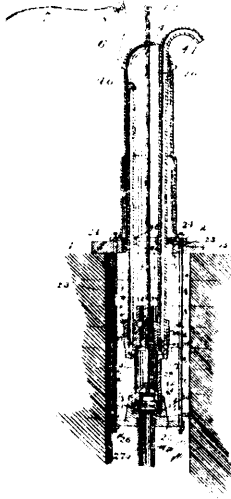
37505 Palmer's Road Cart.



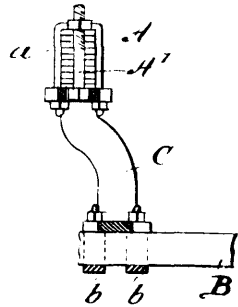
37506 Lefebvre's Device for Opening Envelopes.



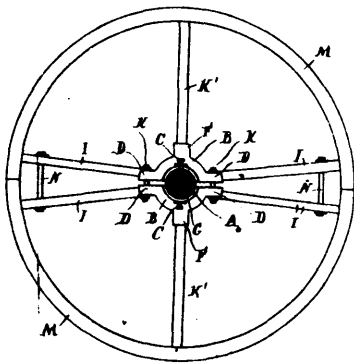
37507 Ransom's Horse Blanket.



37508 Brown's Pump.



37509 Jennings' Waggon.



37510 Keasey's Pulley.

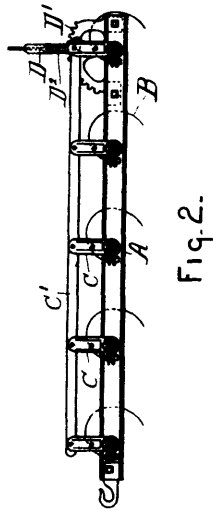


Fig. 2.

37511 Gale's Spring Tooth Lever Harrow.

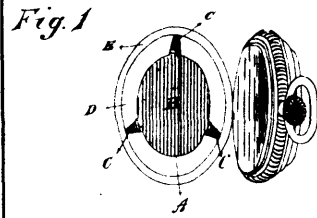
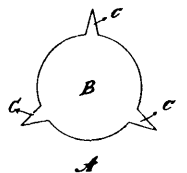
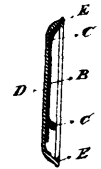


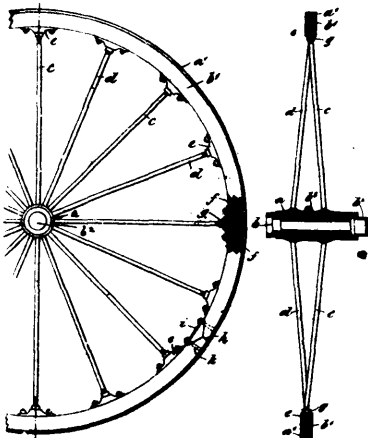
Fig. 1

Fig. 2

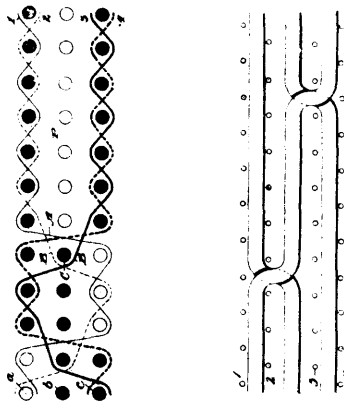
Fig. 3



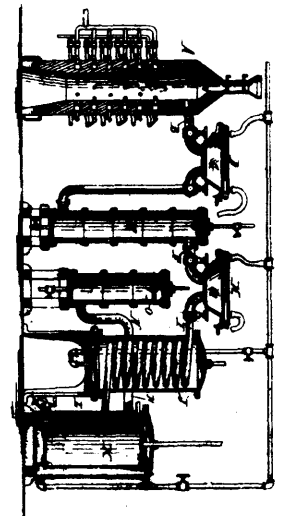
37512 Lloyd's Water Case.



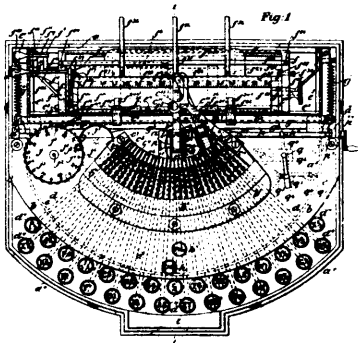
37513 Cowper's Wheel.



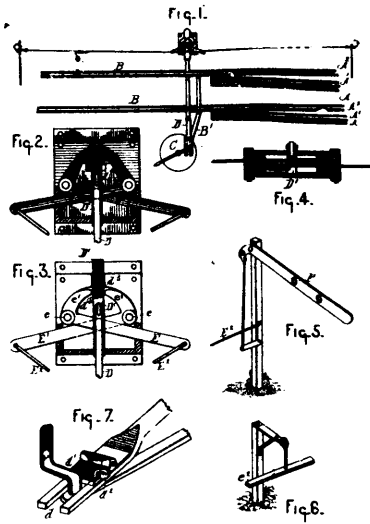
37514 Patterson and Walker's Carpet Fabric.



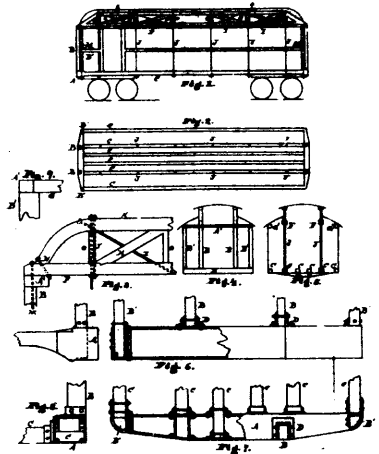
37515 Wing's Method of Manufacturing Bromine and Iodine.



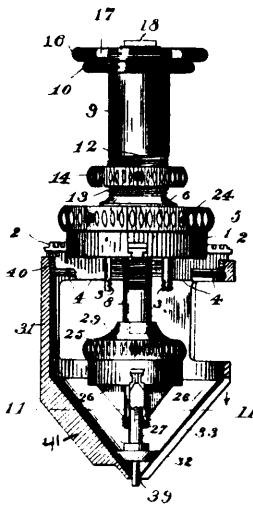
37516 Hearn and Donne's Type Writing Machine.



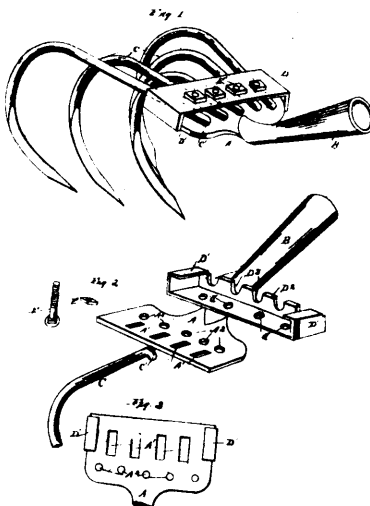
37517 Smith's Semaphore.



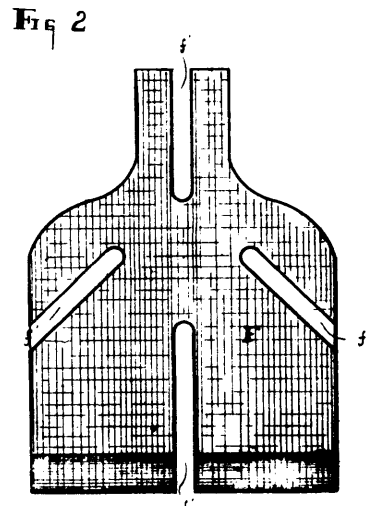
37518 Macmillan's Car.



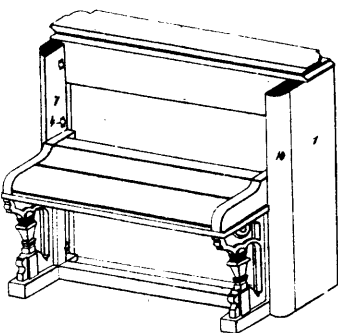
37519 Morse's Valve Reseating Machine.



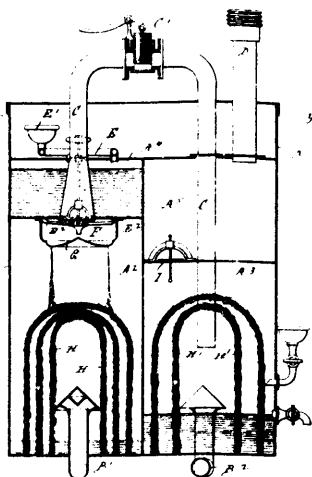
37520 Norcross' Cultivator.



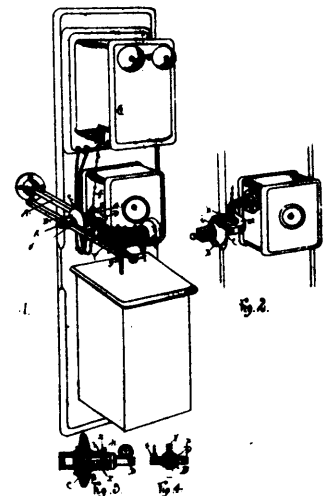
37521 McKay's Clothes Line.



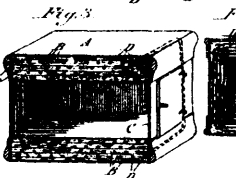
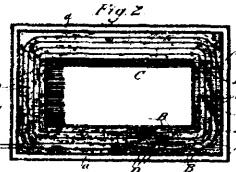
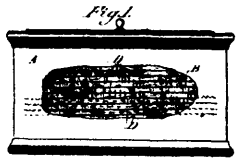
37522 Reimers' Piano Case.



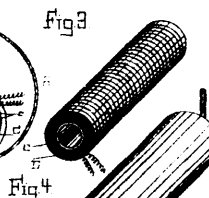
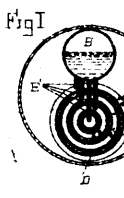
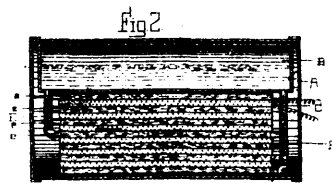
37523 Stringfellow's Apparatus for Manufacturing Gas.



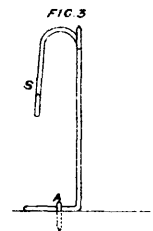
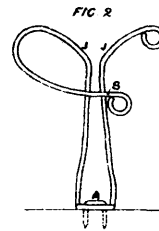
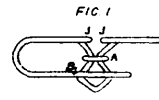
37524 Tinning's Receiver for Telephones.



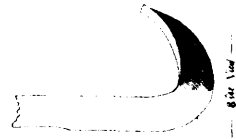
37525 Mitchell's Electrically Heated Oven.



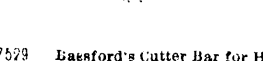
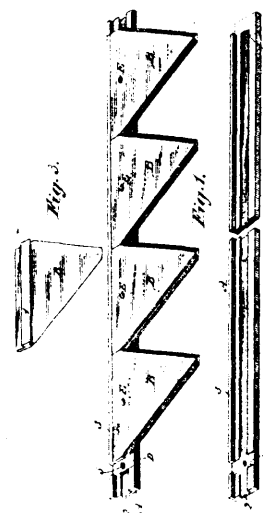
37526 Mitchell's Electric Steam Generator and Heater.



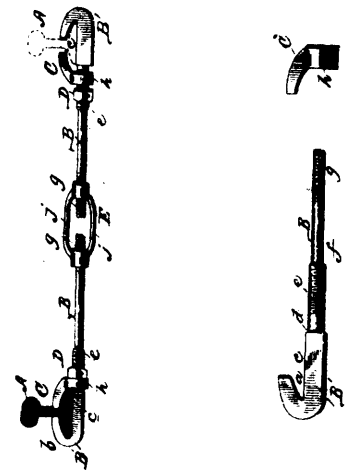
37527 Hepenstal's Rack for Holding Pens, etc.



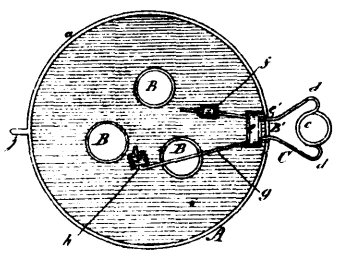
37528 Meadlaw and Lindsay's Barrow



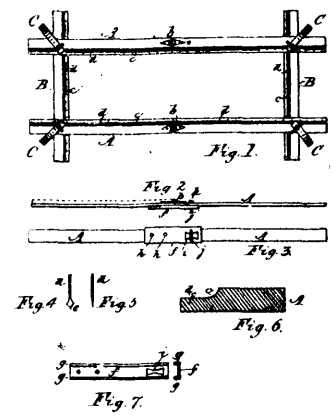
37529 Bassford's Cutter Bar for Harvesters.



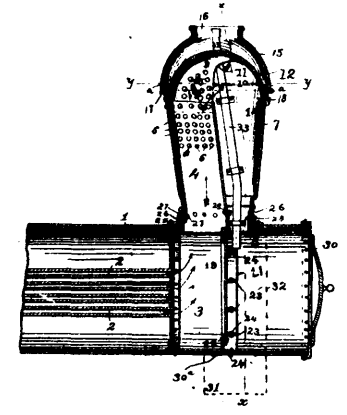
37530 Adams' Railway Track Clamp.



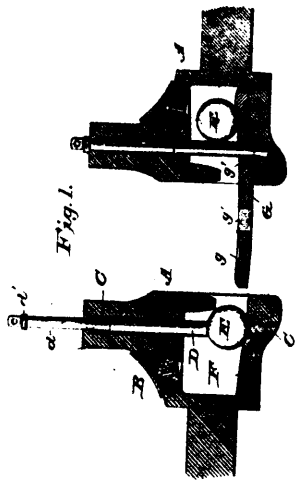
37531 Stewart's Stove Pipe Damper.



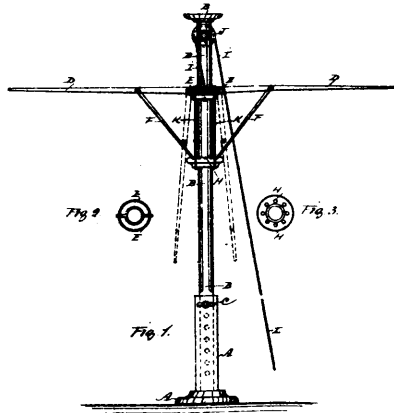
37533 Gilray's Curtain Stretcher.



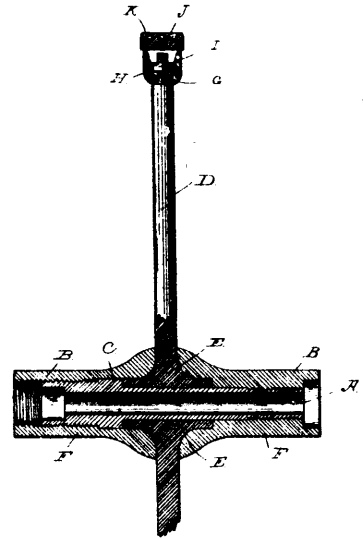
37534 Anderson's Spark Arrester.



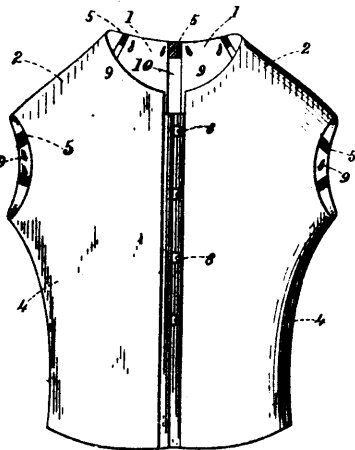
37535 Kormil's Car Coupler.



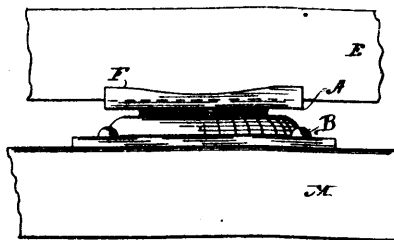
37536 Boos' Suspenders for Drying Clothes.



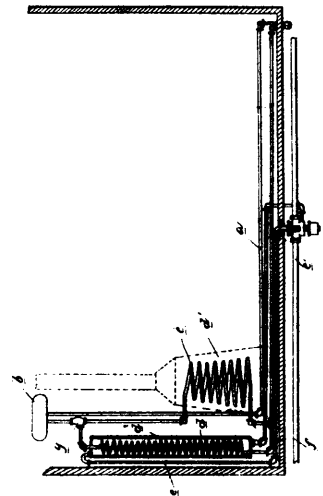
37537 Starkey's Wheel.



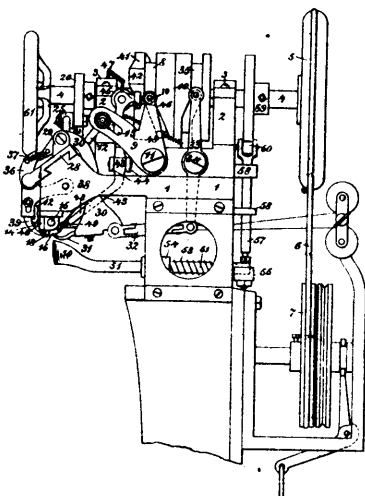
37538 Venner's Garment Measuring Device.



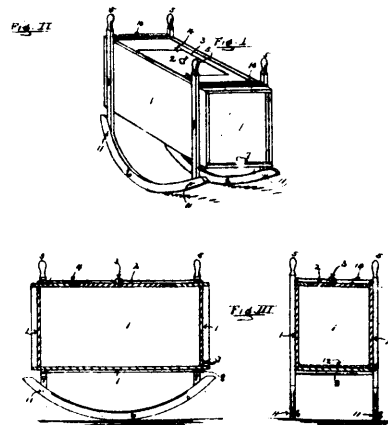
37539 Voss' Center Bearing Plate.



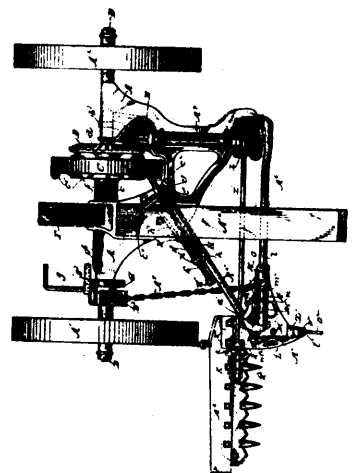
37540 Sewall's Car Heating Apparatus.



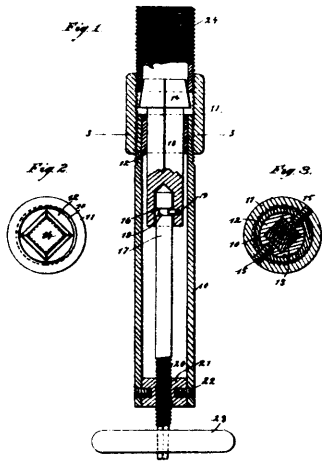
37541 Culley's Sewing Machine.



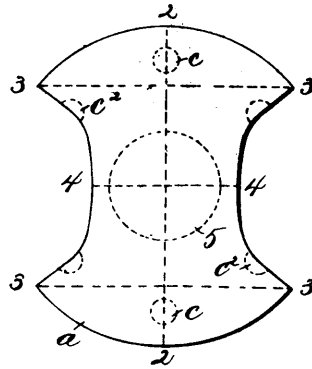
37543 O'Neill's Churn.



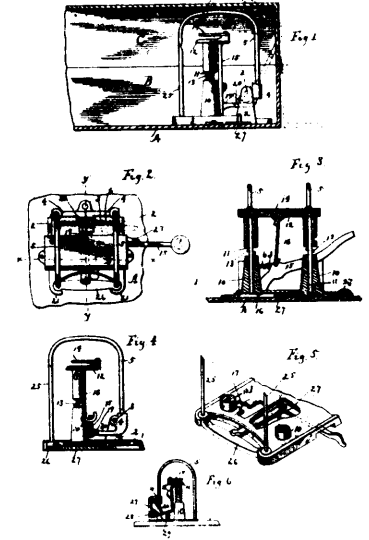
37545 Steward's Mowing Machine.



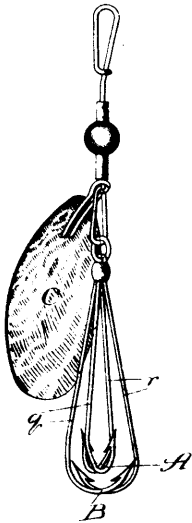
37546 Spencer's Nipple Holder.



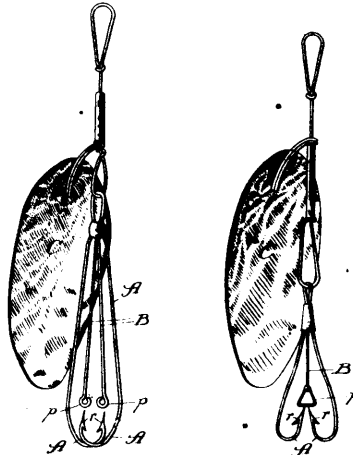
37547 Turner's Sheet Metal Blanks for Knobs.



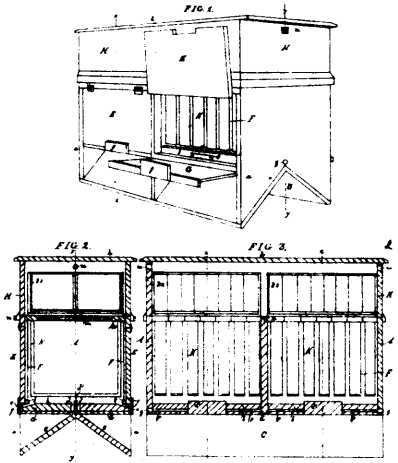
37548 Merk's Bill File.



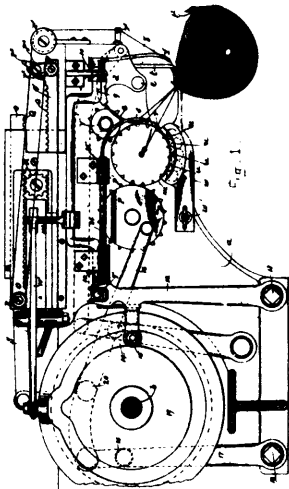
37549 Mack's Fish Hook.



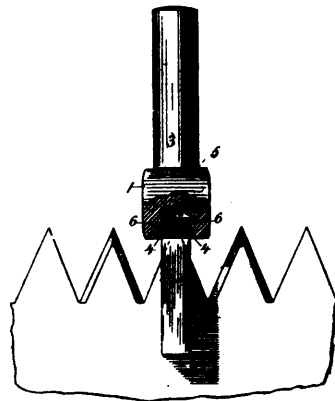
37550 Mack's Fish Hook.



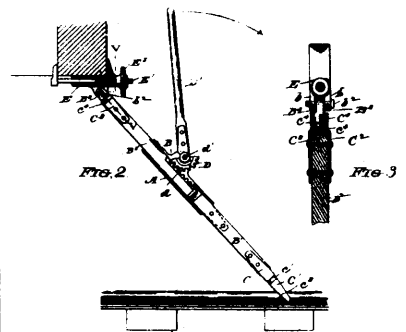
37551 Ward's Bee Hive.



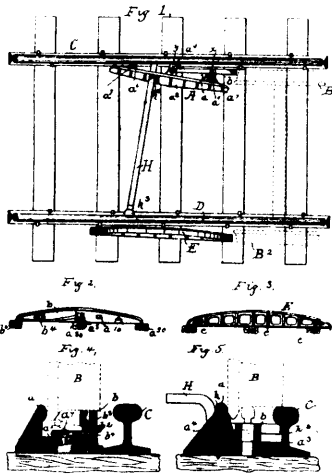
37552 Doucet's Sewing Machine



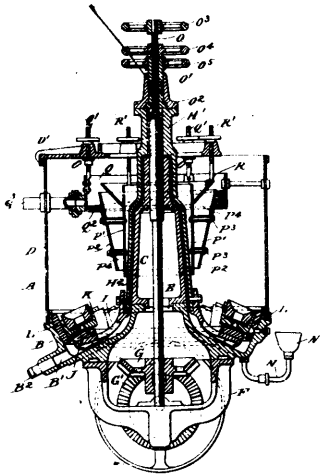
37553 Thompson's Saw Set.



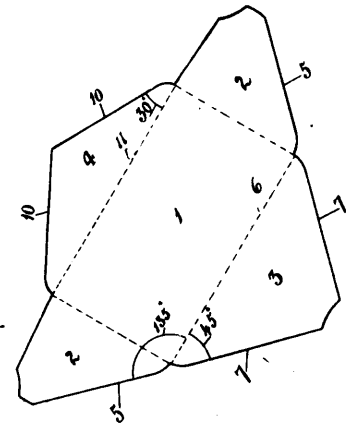
37554 Drinker's Car Mover.



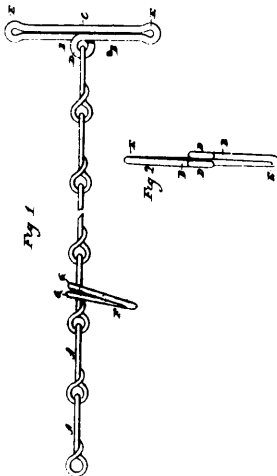
37555 Newcomb's Replacer for Cars.



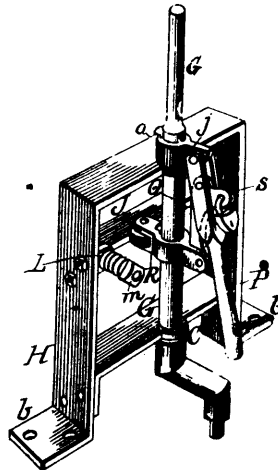
37556 Fraser's Mill for Grinding and Amalgamating Ores.



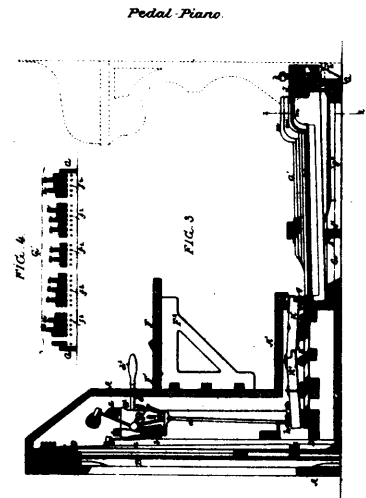
37557 Crichton's Envelope.



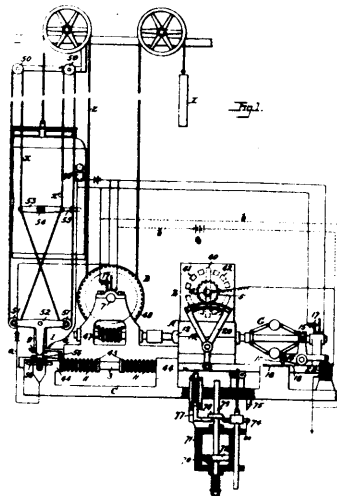
37558 Breul's Attachment to Chains.



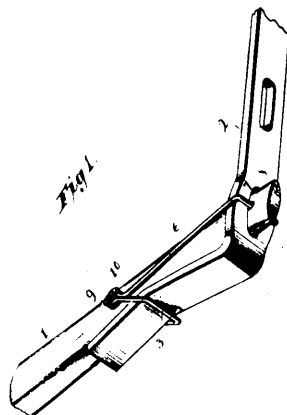
37559 Hopkins' Safety Switch.



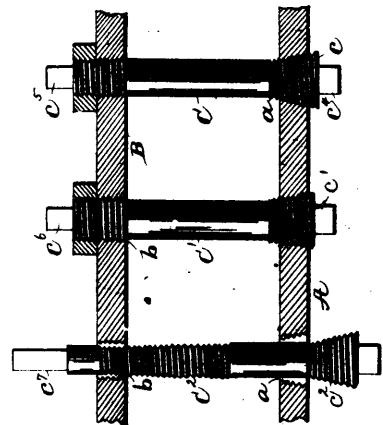
37560 Subers and Coughlin's Pedal Piano.



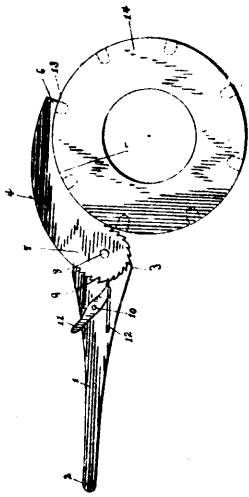
37561 Otis and Smith's Electric Elevator.



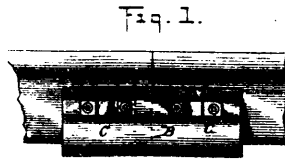
37562 Goundry's Trace Fastening for Whiffletrees.



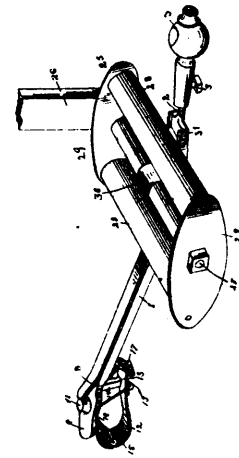
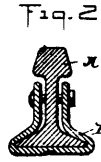
37563 Barow's Stay for Boilers.



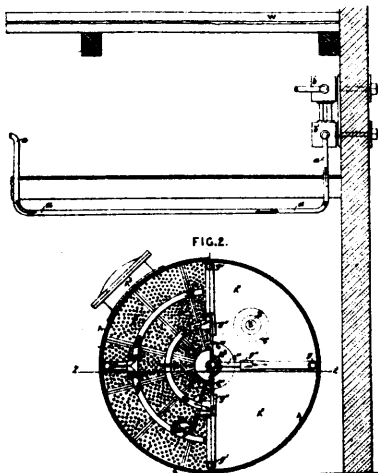
37564 Dodge's Wrench.



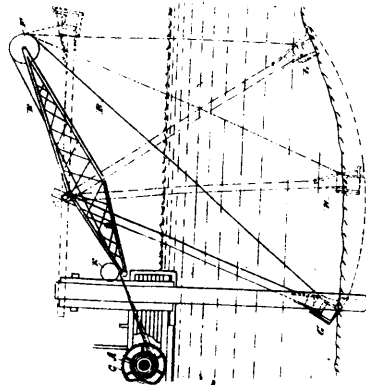
37565 Winn's Splice for Railway Rails.



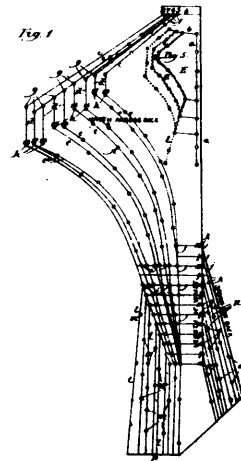
37566 Wheeler's Pedal Attachment for Velocipedes.



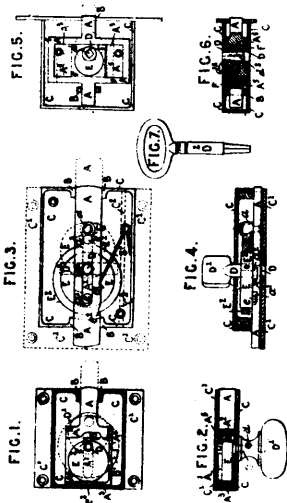
37567 Johnston's Machine for Making Paper from Fibre Material.



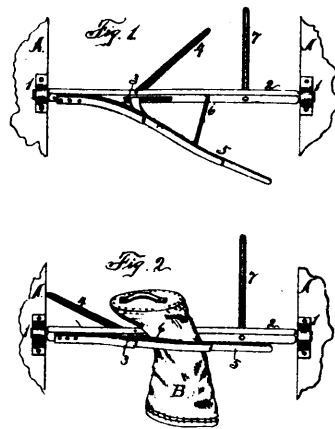
37568 Kennedy's Boom Dipper Dredge.



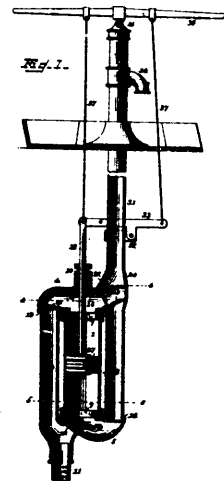
37569 Scharfer's Multiplex Dress Chart.



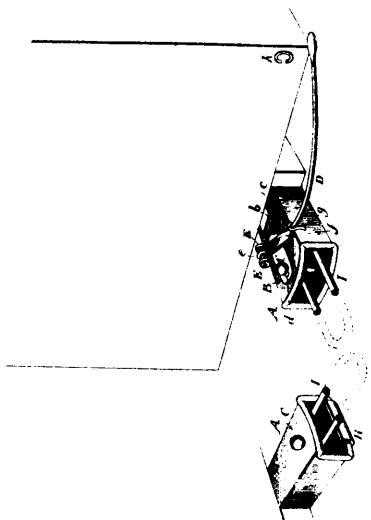
37570 Leitch's Lock.



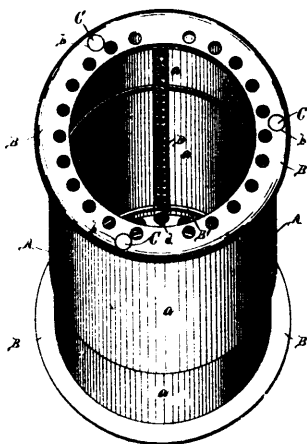
37571 Van Hoesen's Device for Catching Mail Bags.



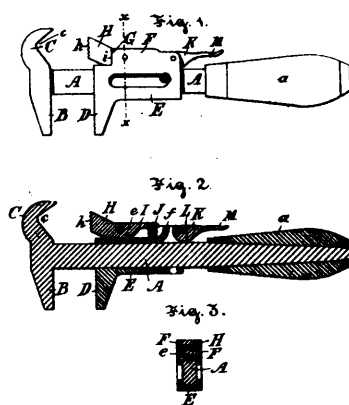
37572 Bradley's Force Pump.



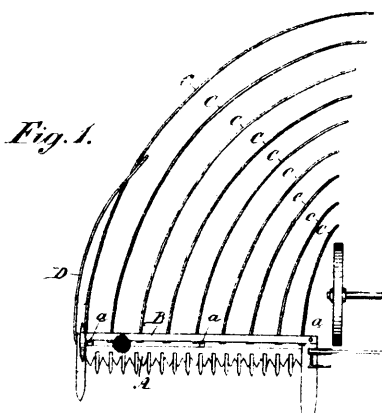
37573 Gaddis' Car Coupler.



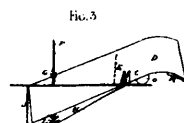
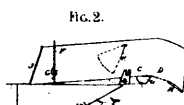
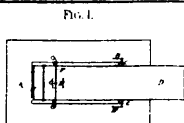
37574 McGuire's Stove Pipe Thimble.



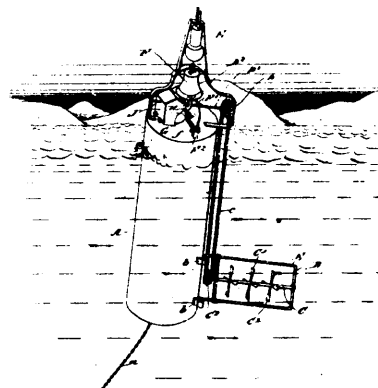
37575 Remillard and Dusseault's Combined Nut and Pipe Wrench.



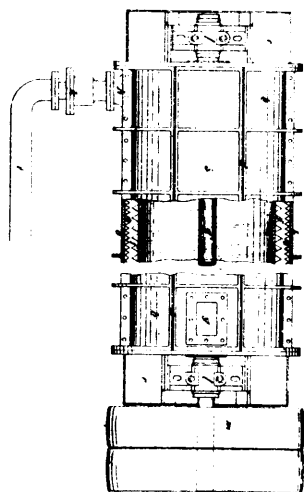
37576 McLaren's Pea Harvester.



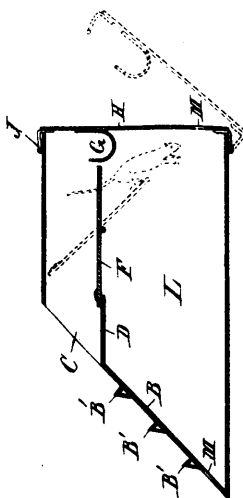
37577 Esmonin's Trap for Rats and Mice.



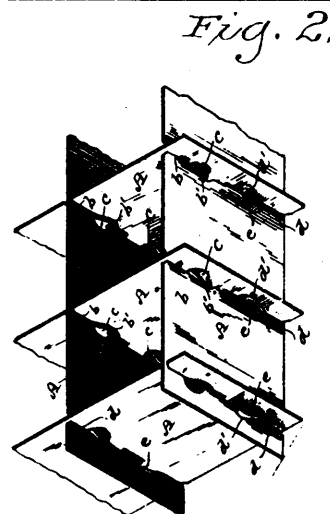
37578 Kydd's Buoy.



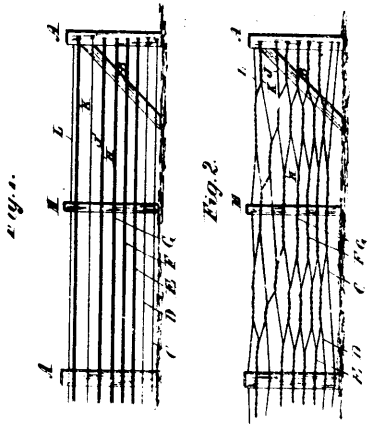
37579 Partington's Apparatus for Separating or Disintegrating Fibres in the Manufacture of Paper Pulp.



37580 Kennedy's Mouse Trap.



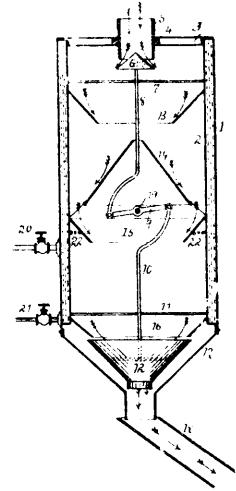
37581 Bower's Cell Case.



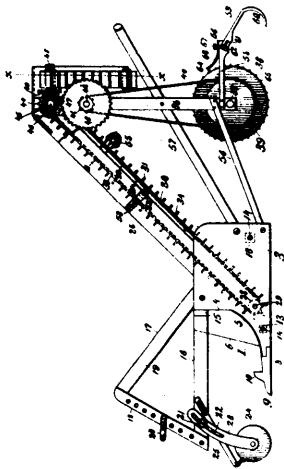
37582 Winters' Wire Fence.



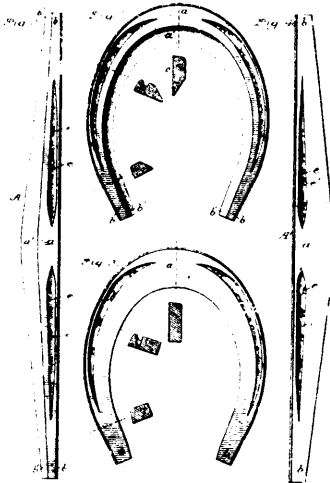
37583 Brush's Telegraph Pole.



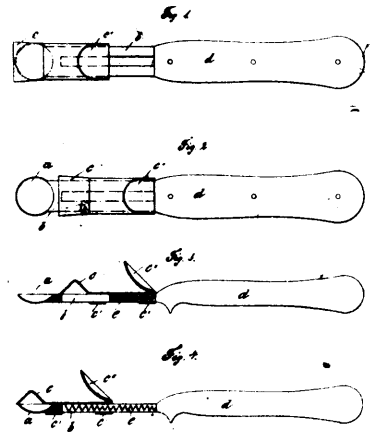
37584 Zimmerman and Beall's Heater for Tempering Grain.



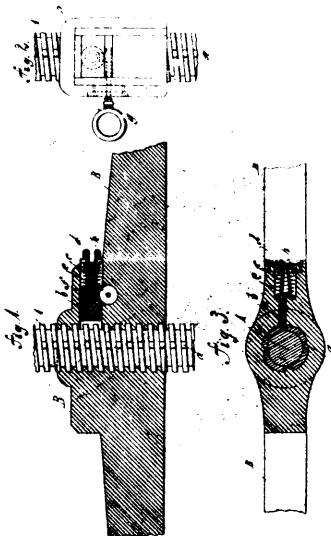
37585 Hunter's Ditching Machine.



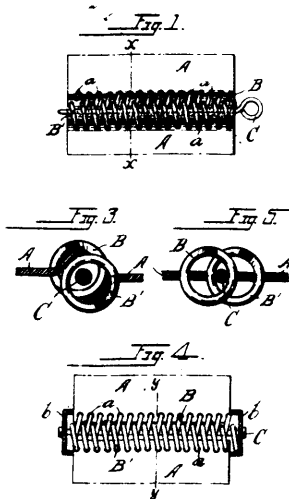
37586 Perkins' Blank for Horse Shoes.



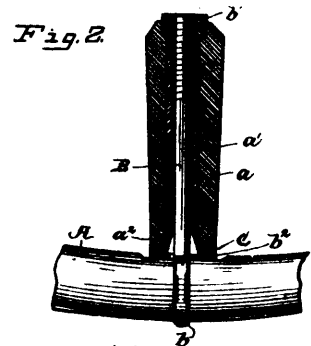
37587 Scheid's Measuring Spoon.



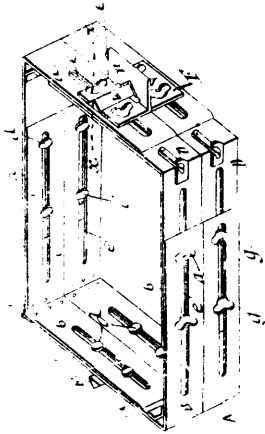
37588 Scheid's Stop for Copying Presses.



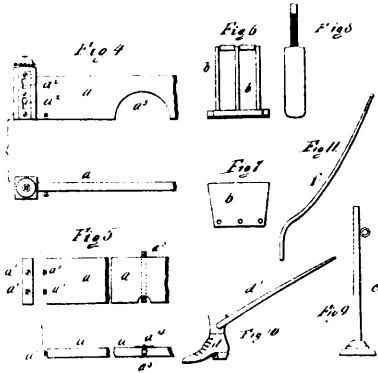
37589 Jackson's Coil Clasp.



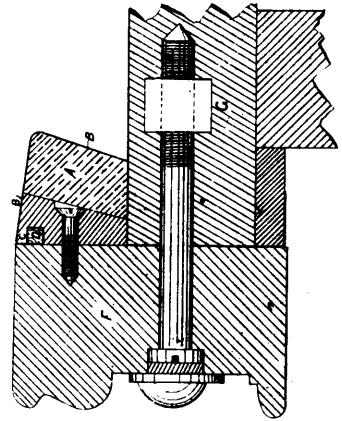
37590 Dodge's Scythe Handle.



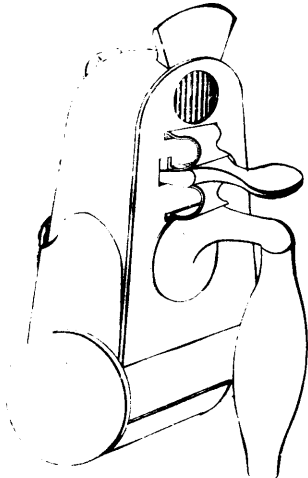
37591 Richardson, Boyer and Swope's Molding Flask.



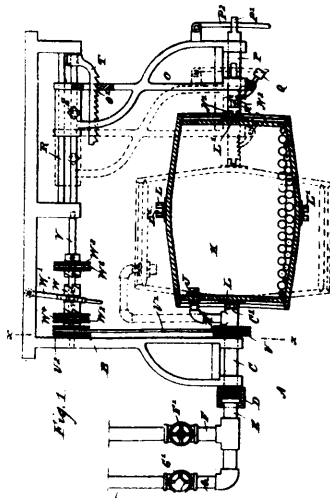
37592 Foster's Apparatus for Parlour Table Games.



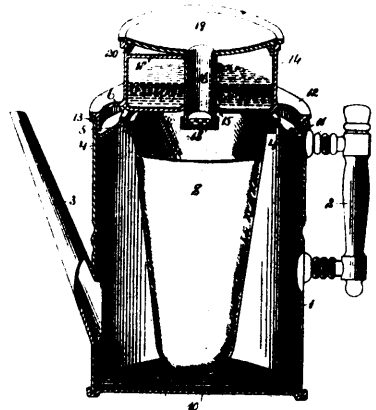
37593 Burroughs' Billiard Table.



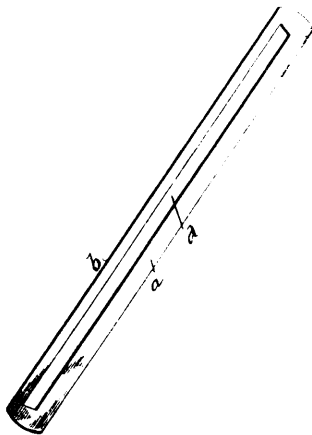
37594 Wood's Combined Fare Receptacle and Register.



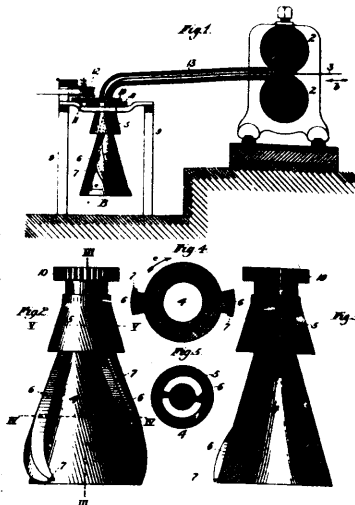
37595 Bidwell's Barrel Washer.



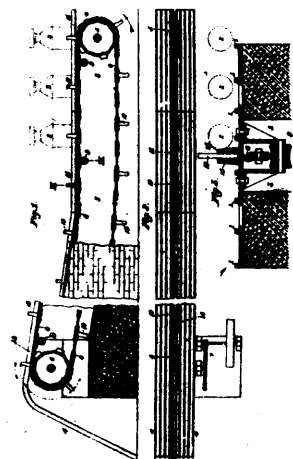
37596 De Atley's Coffee or Tea Pot.



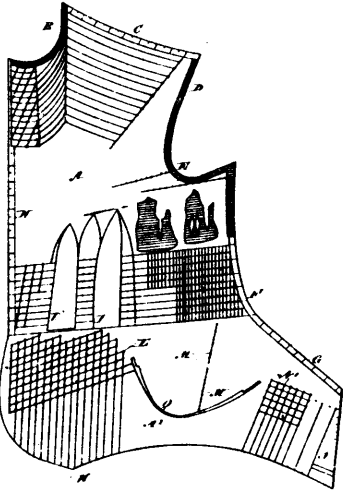
37597 Robare's Pocket Protector.



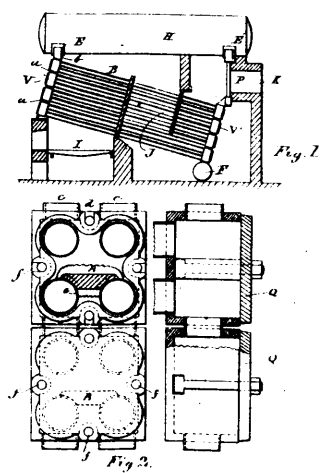
37598 Roberts' Apparatus for Coiling Metal Rods.



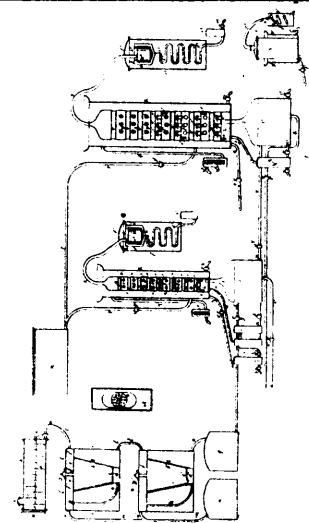
37599 Roberts' Apparatus for Coiling Metal Rods.



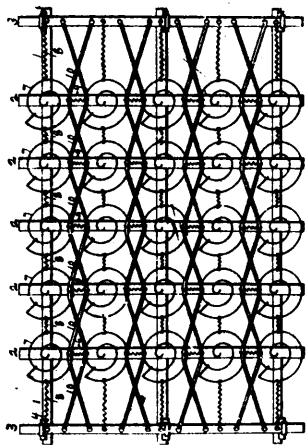
37600 Penley's Dress Chart.



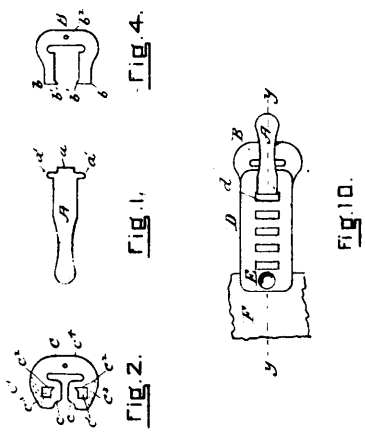
37602 Caldwell's Water Tube Steam Boiler.



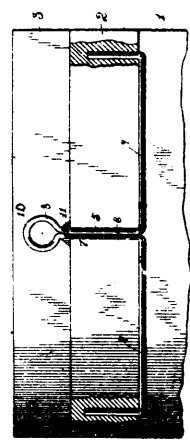
37603 Haeck's Apparatus for the Distillation and Rectification of Alcohols.



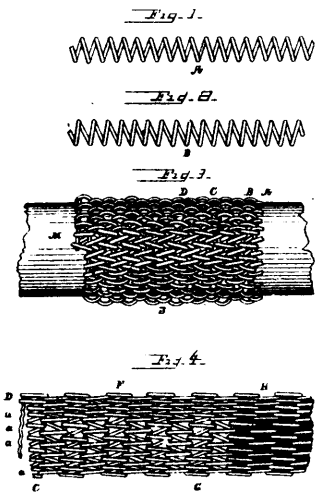
37604 Cleaveland's Bed Bottom.



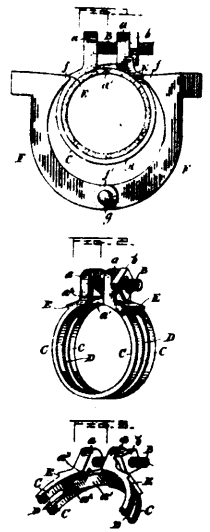
37605 Weld's Fastening Device.



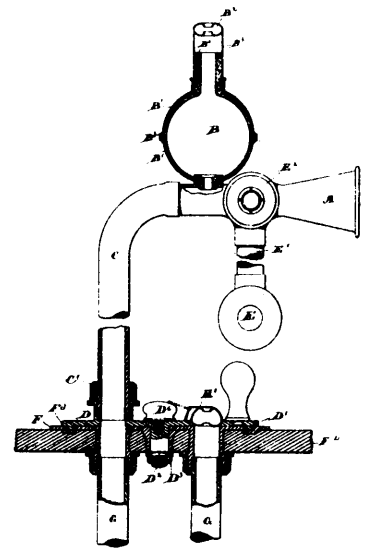
37606 Matson's Box Fastener.



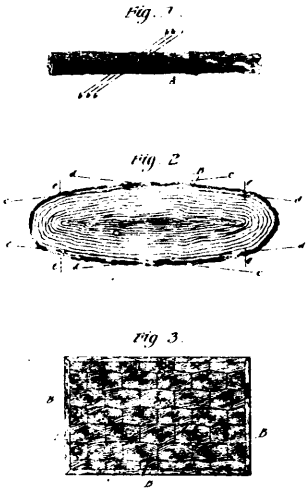
37608 Midgley's Wire Cable.



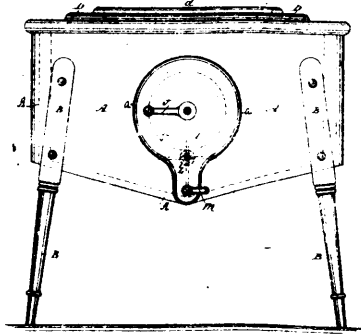
37610 Zerdon's Hose Coupling and Adjustable Clamp Therefor.



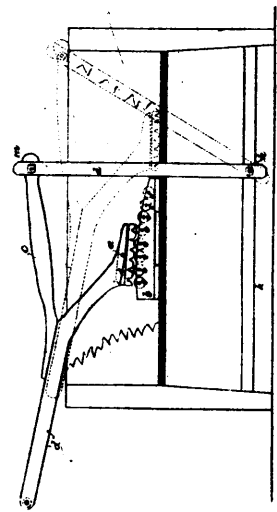
37611 Cutmore's Speaking Tube.



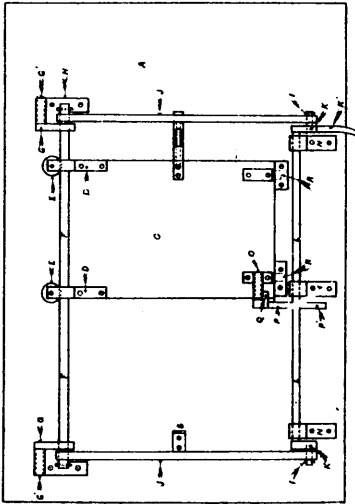
37612 Murch's Mode of Preparing Wood for Ornamental or Decorative Purposes.



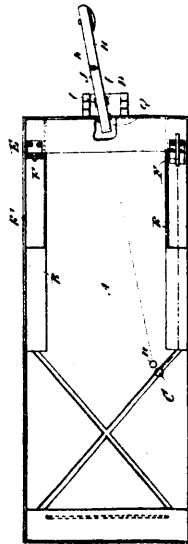
37613 Burke's Dish Washing Machine.



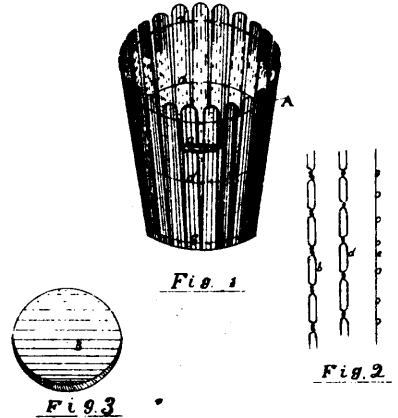
37614 Young's Washing Machine.



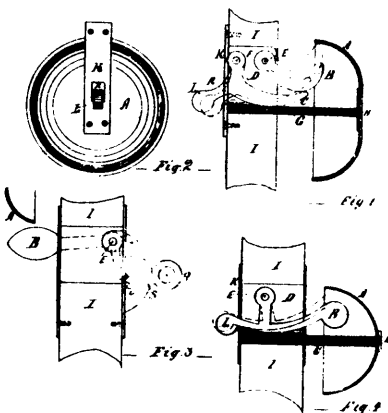
37615 Gray's Car Door.



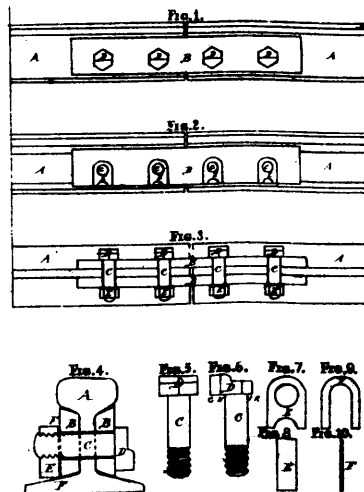
37616 Carpenter's Game.



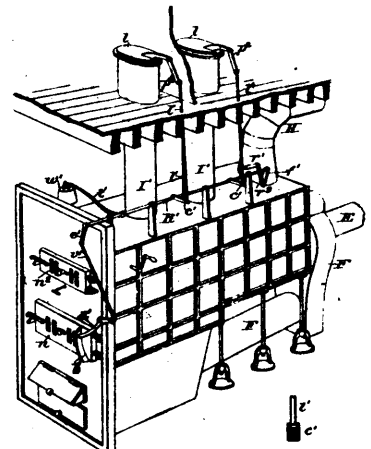
37618 Fowler's Art of Making Baskets.



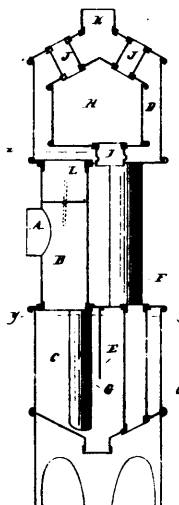
37619 Mutter's Gong.



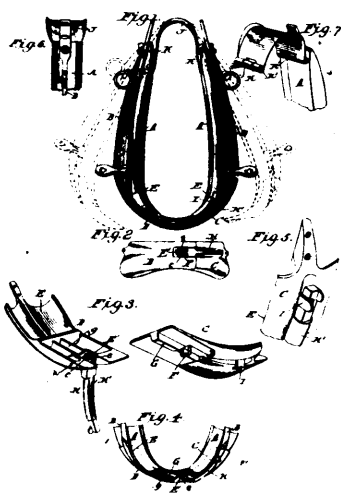
37620 Atkins, McMullen and Selfridge's Method of Connecting Rails of Railway Tracks.



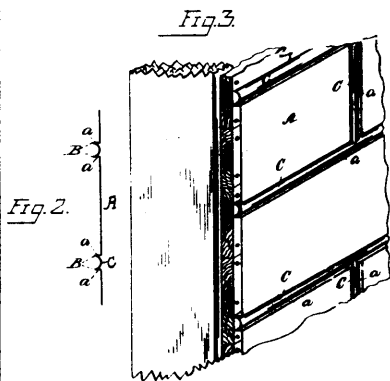
37621 Smead's Cremation Closet.



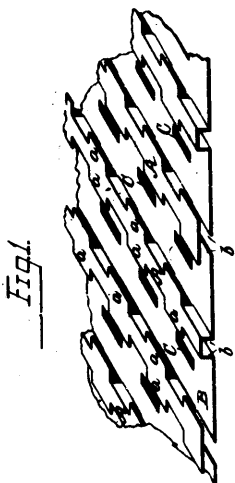
37623 Brock's Heating Drum



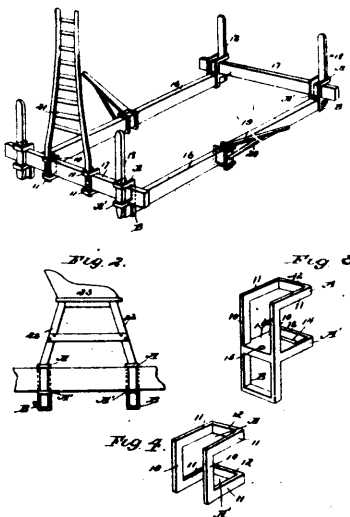
37624 Marlette's Horse Collar.



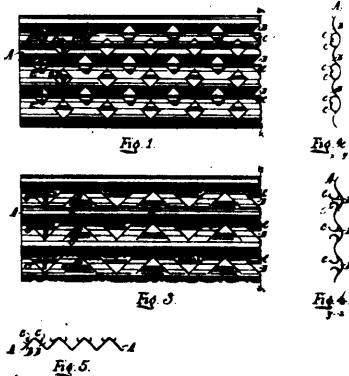
37625 Sagendorph and Harder's Metallic Facing for Buildings.



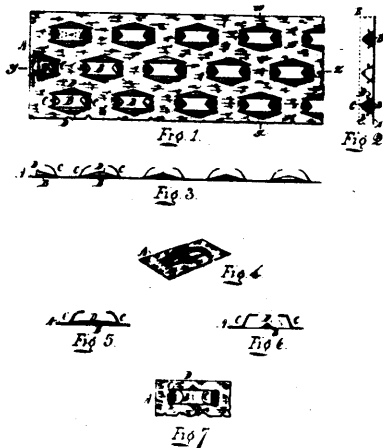
37626 Sagendorph and Harder's Metallic lathing.



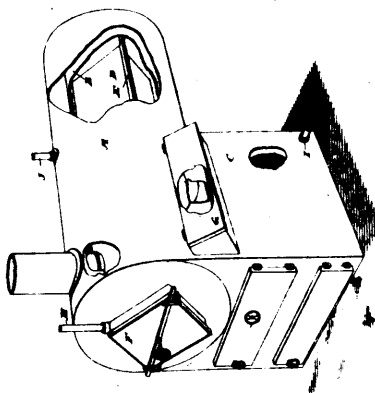
37627 Salisbury's Clasp for Connecting Timbers.



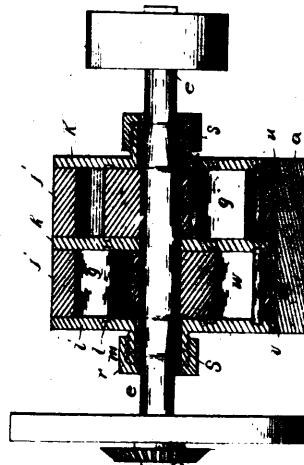
37628 Hayes' Metallic Lathing



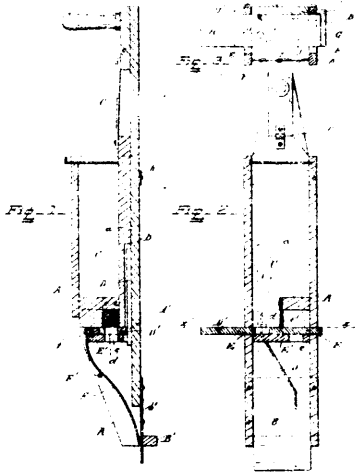
37629 Hayes' Metallic Lathing.



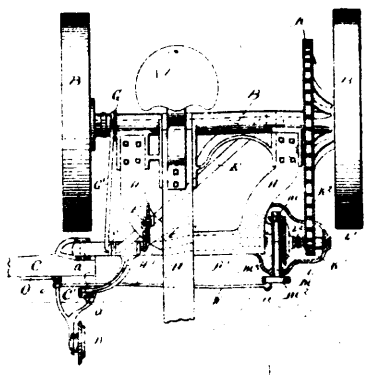
37630 Doty's Combined Gas Generator and Heater.



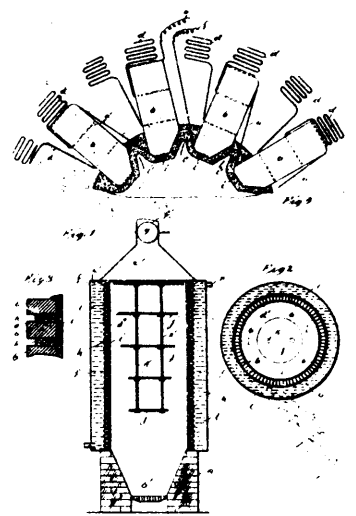
37631 Wiles' Rotary Engine.



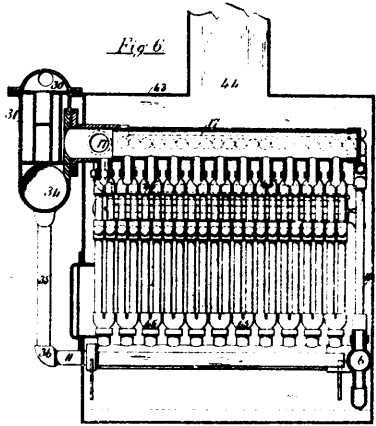
37632 Kling's Hand Seed Planter.



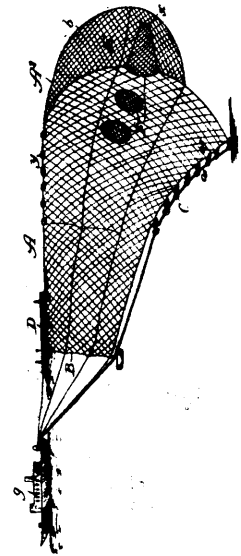
37633 Dixon's Mower.



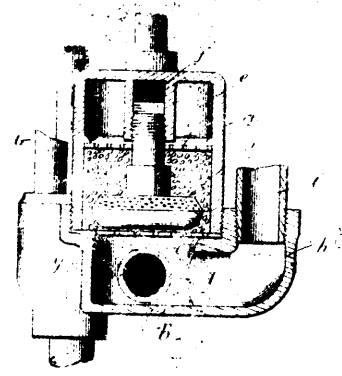
37634 Cox's Thermo Electric Generator.



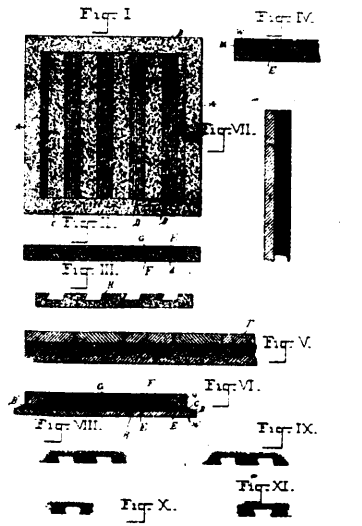
37635 Army's Steam Generator.



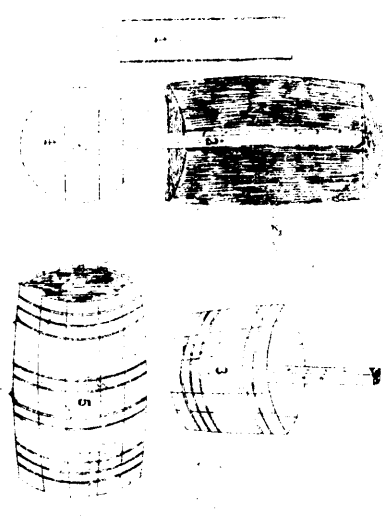
37636 Covey's Fish Trap or Net.



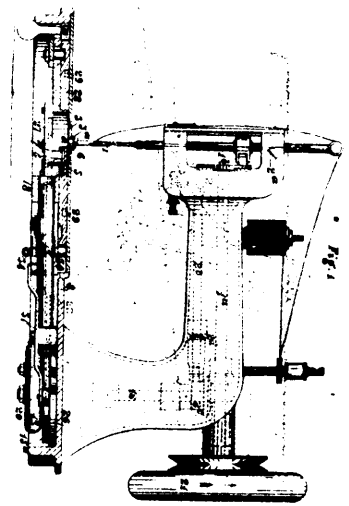
37638 McElroy's Water Heater.



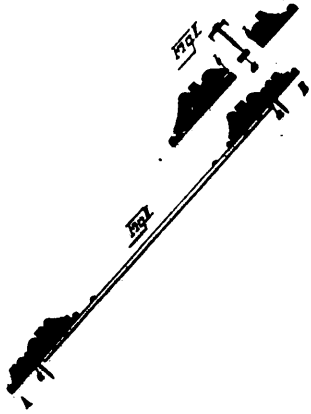
37639 Curran's Portable Plaster Slab and Mold Thereof.



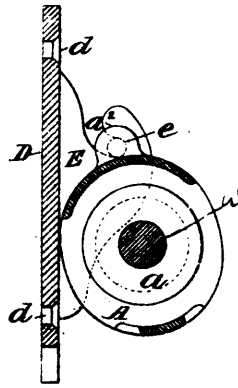
37640 Bayley's Air Tube for Preserving Fruit.



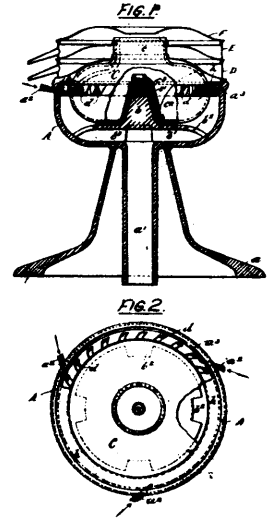
37641 Helwig's Button Hole Sewing Machine.



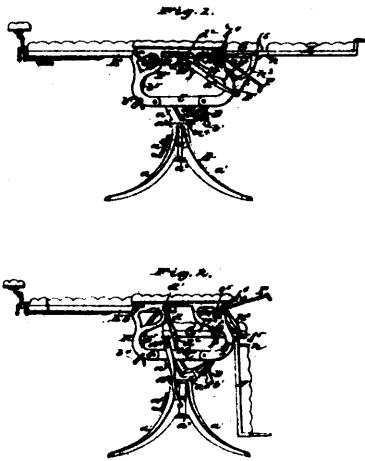
37644 Adels' Boarded and Wainscoted Ceiling.



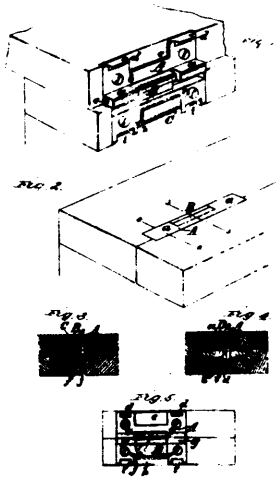
37645 Lund's Clothes Line Pulley and Bracket.



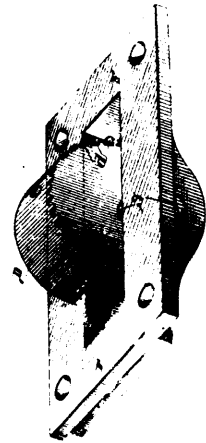
37647 Sharples' Centrifugal Liquid Separator.



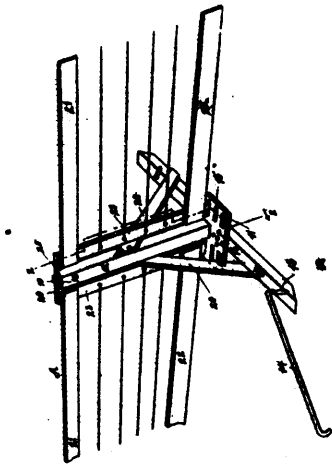
37648 Gould's Surgical Chair.



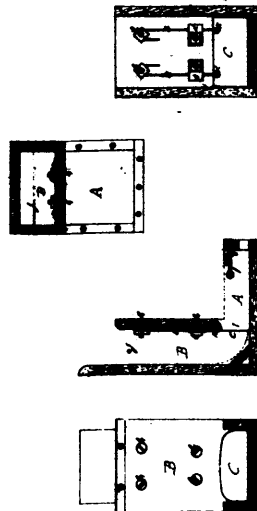
37650 Davis' Hinge.



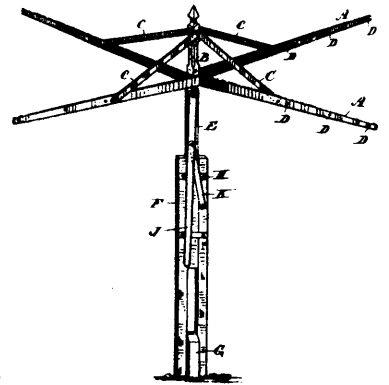
37651 d'Auria's Dog for Carpenters' Benches.



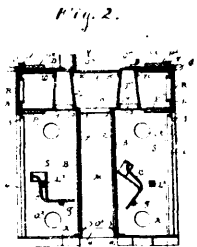
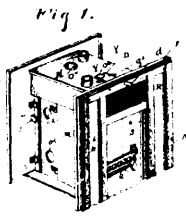
37652 Harris' Portable Fence.



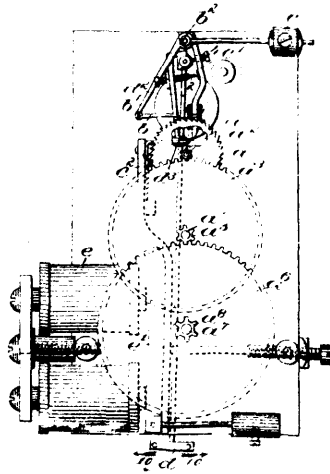
37653 Flurey and O'Leary's Box for Feeding Grain Chop, etc., to Animals.



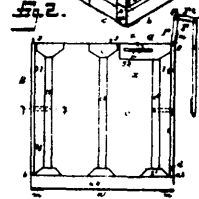
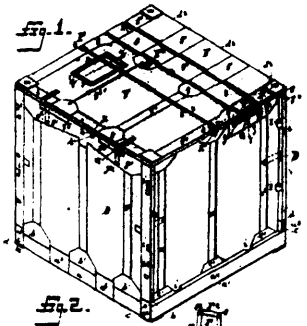
37654 Merriam's Clothes Drying Reel.



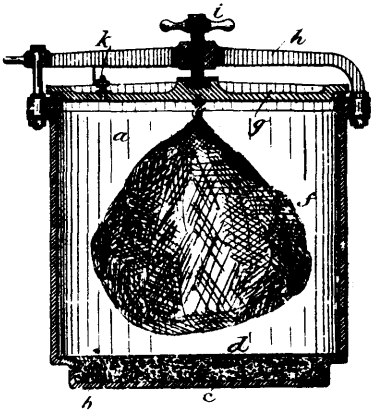
37655 Scates' Fire Place.



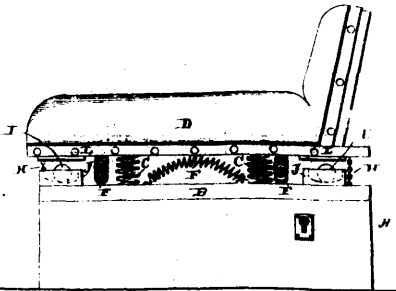
37656 Scales' Electric Clock.



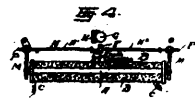
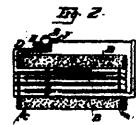
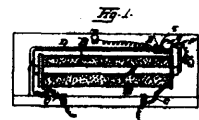
37657 Johnson's Folding Packing Box.



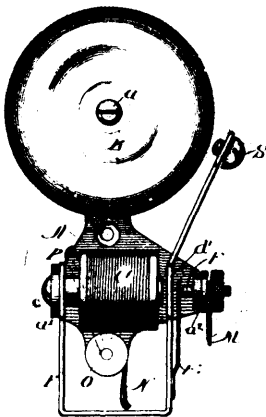
37658 Bregha's Apparatus for Preserving Food.



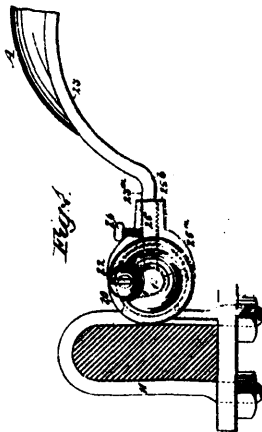
37659 Pepple's Seat.



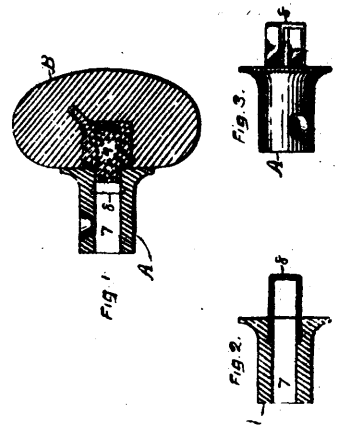
37660 Wiegand's Telephone Relay.



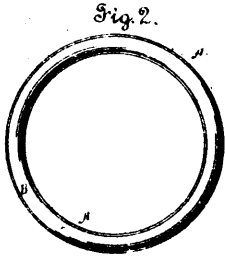
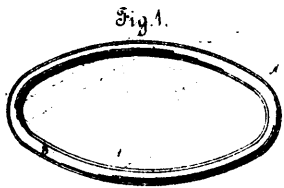
37661 Hay's Electric Bell.



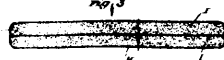
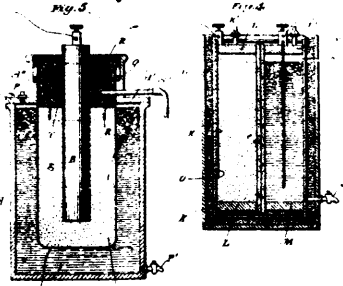
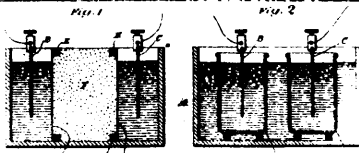
37662 Niekamp's Thill Coupling.



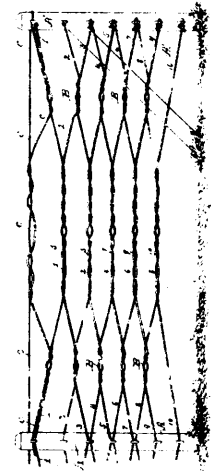
37663 Cooley's Method of Attaching Knobs to their Shanks.



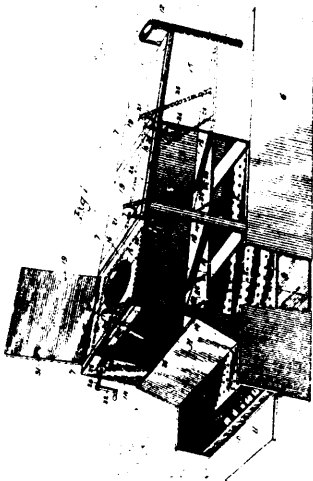
37664 Smith's Packing.



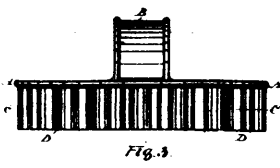
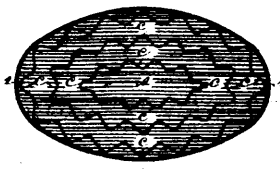
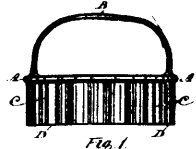
37665 Roberts' Apparatus for use in Electrolytic Decomposition of Metallic Salts.



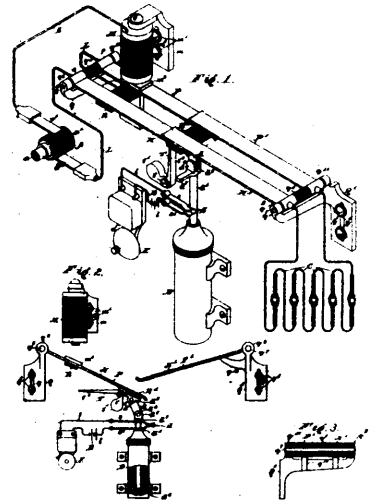
37666 Newman's Fence



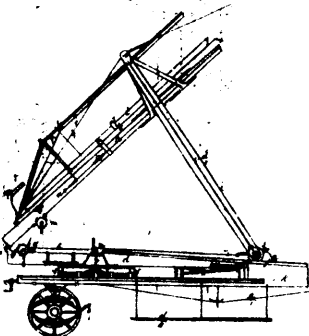
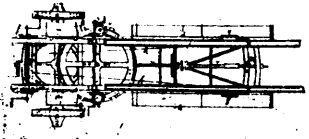
37667 Ross' Sanitary Closet.



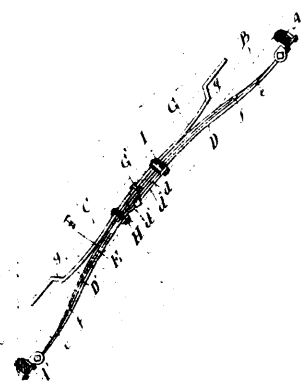
37668 Foster and McLeod's Curry Comb.



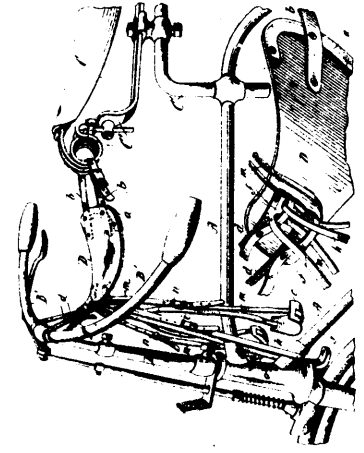
37669 Hall's Electrical Safety Switch.



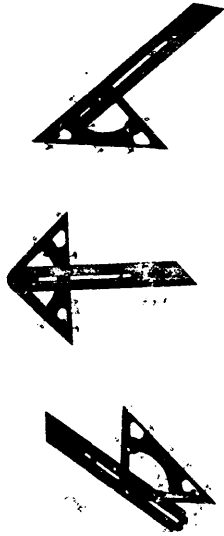
37670 Colleret's Extension Ladder



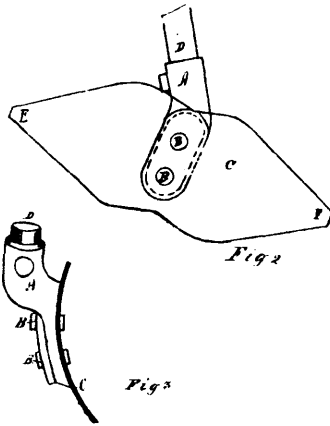
37671 Senecal's Vehicle Spring.



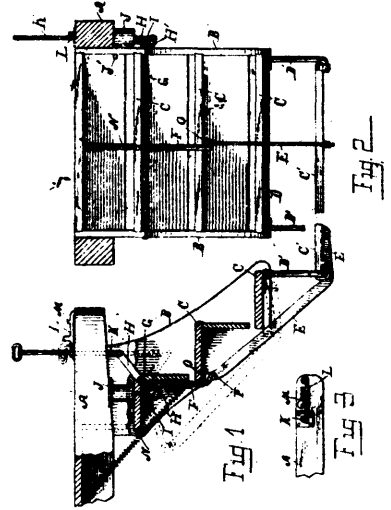
37672 Jones and Fisher's Supplemental Seat for Bicycles.



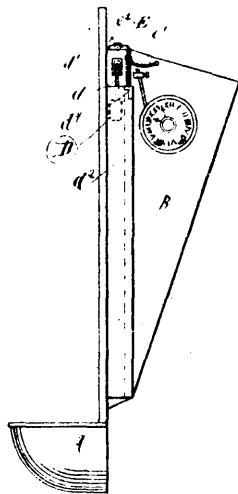
37673 Stilwell's Adjustable Square and Bevel



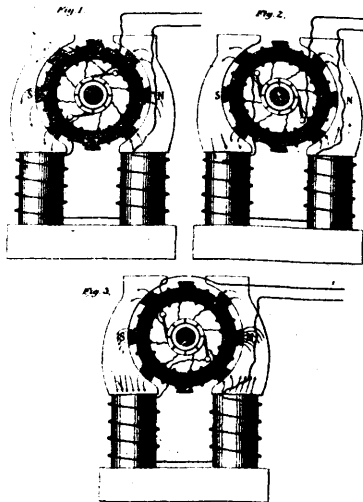
37674 Challen's Plow Skimmer.



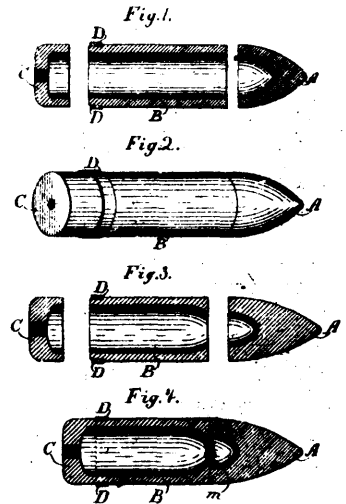
37675 Company's Extensible Car Step.



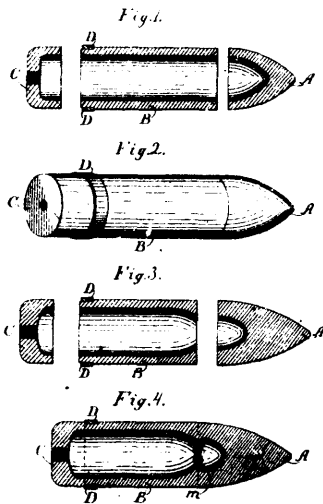
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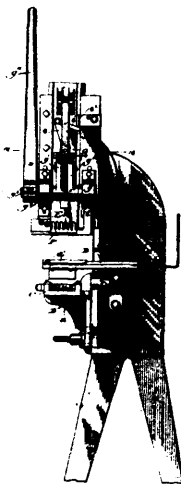
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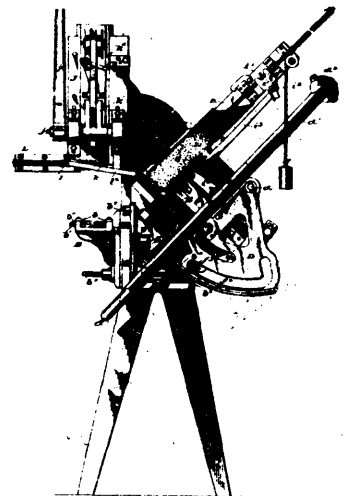
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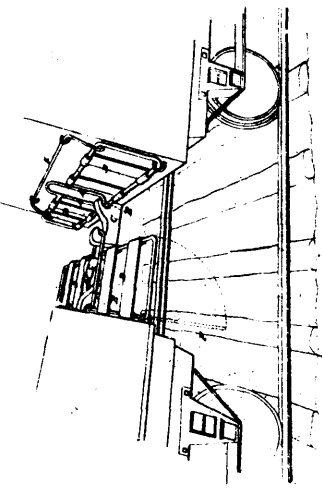
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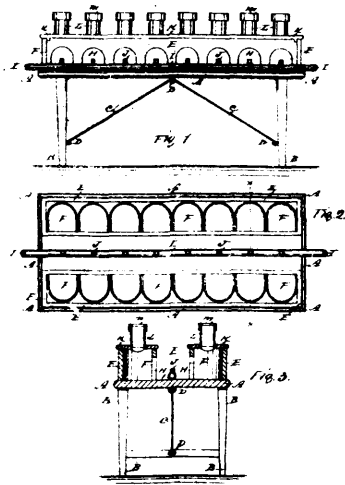
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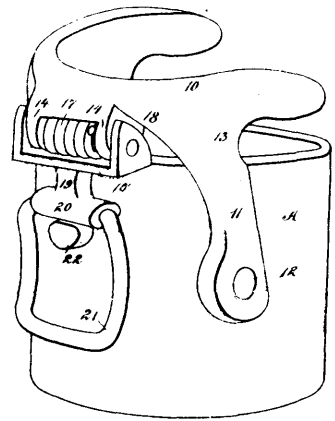
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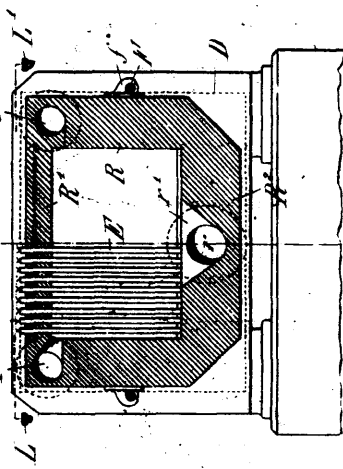
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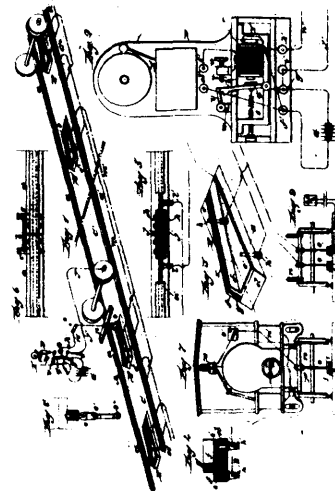
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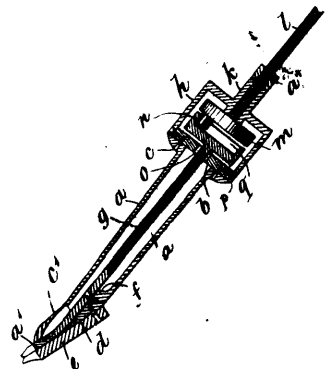
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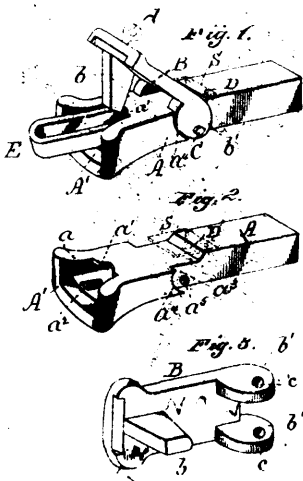
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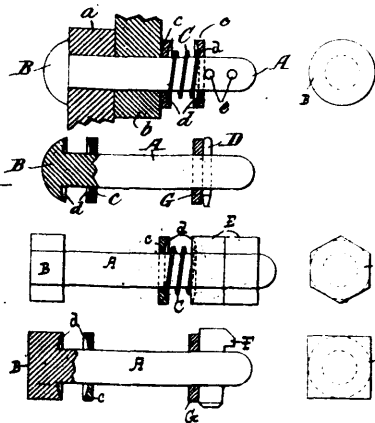
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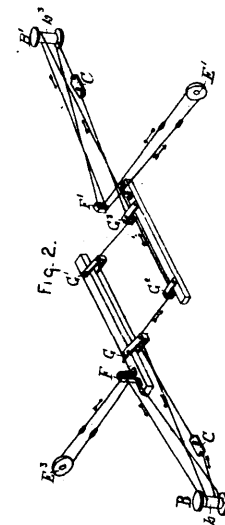
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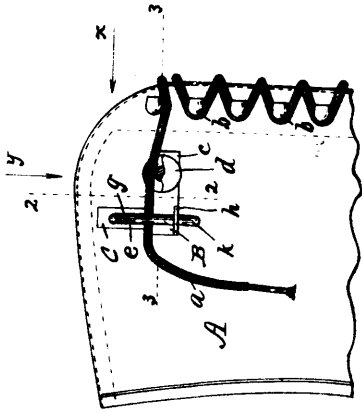
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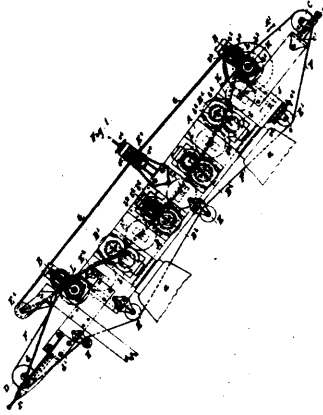


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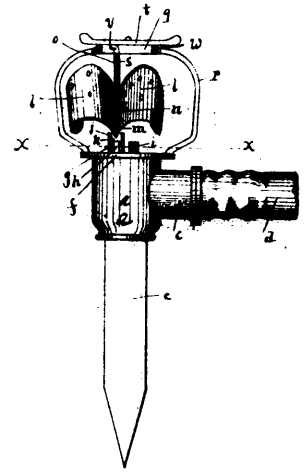


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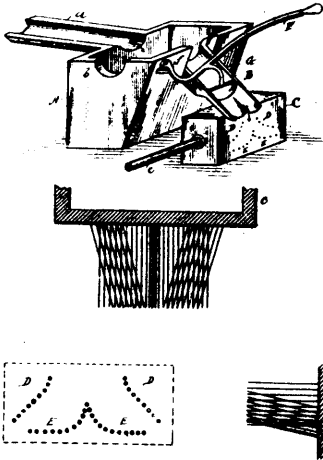


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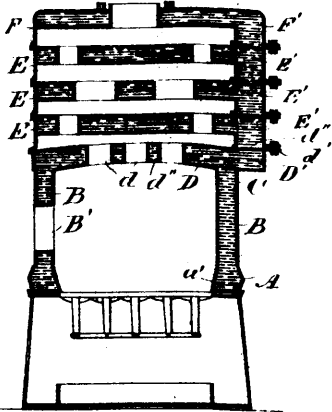
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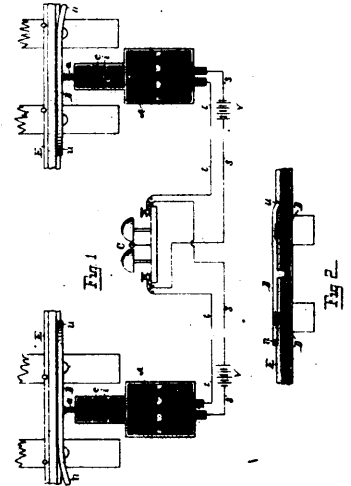
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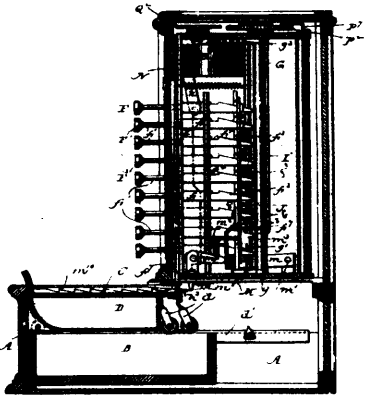
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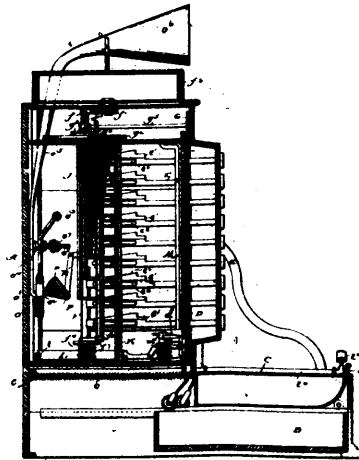
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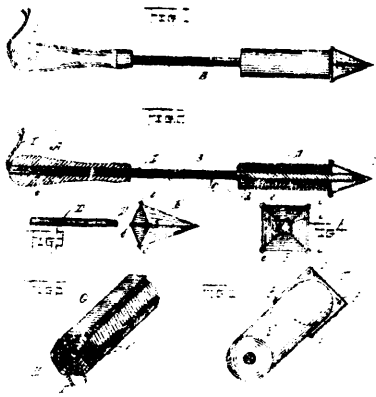
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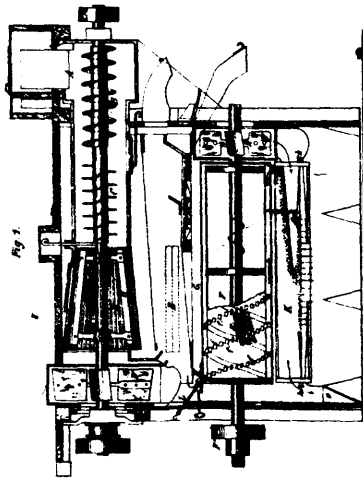


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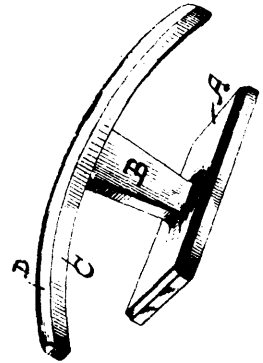
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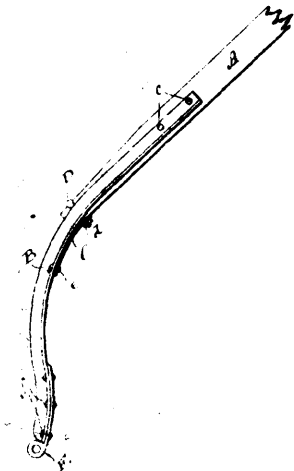
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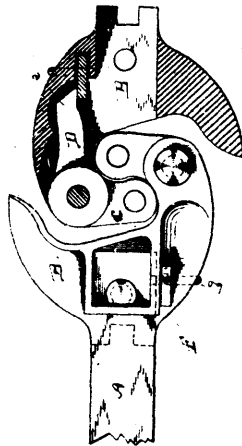
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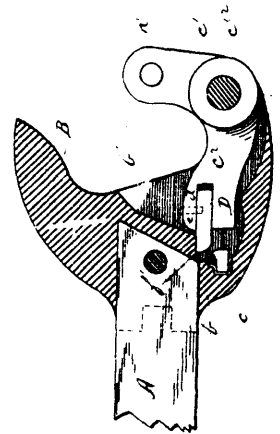
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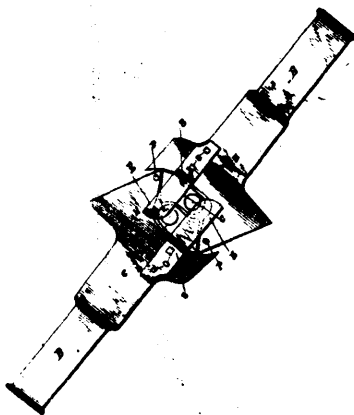
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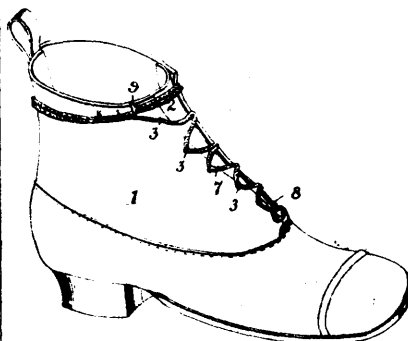
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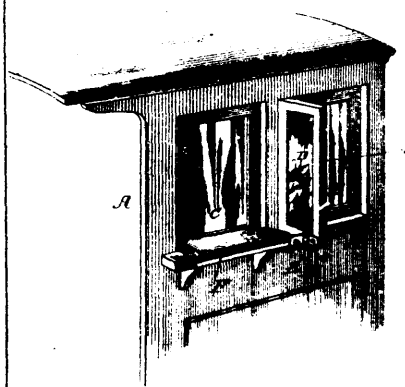
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