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No. 42,452. Wrench. (*Clé à écrou.*)

William Emmet Ayres, assignee of John Balz, both of Syracuse, New York, U.S.A., 4th April, 1893; 6 years.

Claim.—The improved duplex wrench consisting in the combination with the case or handle C, and the pivoted nut engaging heads D, D', provided with ratchets a,a, of the pawls b,b, one of which has its shank b^1, longer than that of the other pawl and constituting the adjusting lever of the wrench, the single thumb piece t on the said lever protruding through the slot t^1 in the case, and the spring c abutting with opposite ends against the ends of the two pawl shanks and having its intermediate portion bent serpentine-shape, substantially as described and shown.

No. 42,453. Rail. (*Rail.*)

John Crockett and James Furnival, both of Cleveland, Ohio, U.S.A., 4th April, 1893; 6 years.

Claim.—1st. A rail the head and base whereof are flanged and constructed in such a manner as to render the same reversible, substantially as set forth. 2nd. A reversible rail, having a flanged head and a flanged base corresponding in construction, with the flanges of the head and base located at opposite sides of the rail, respectively, substantially as and for the purpose set forth.

No. 42,454. Method of and Machine for Making Cigar Fillers. (*Méthode et machine pour préparer le tabac pour la fabrication des cigares.*)

Bernhard Baron, Baltimore, Maryland, U.S.A., 4th April, 1893; 6 years.

Claim.—1st. The method of forming a continuous filler to be afterward cut into proper lengths for cigars, herein described, which consists in first grouping a number of leaves of tobacco parallel in the direction of their length to form a bundle approximately the diameter of a cigar bunch to be formed, then feeding the bundles so formed to a compressing mechanism, lapping the end of each bundle onto the end of the one next preceding it, and successively compressing the bundles so fed to form a compact rope, substantially as specified. 2nd. The method of forming fillers for cigars, herein described, which consists in first grouping a number of leaves of tobacco parallel in the direction of their length to form a bundle of approximately the diameter of a cigar bunch to be formed, then feeding the bundles so formed to a compressing mechanism, lapping the end of one bundle onto the end of the one next preceding it, then successively compressing the bundles so fed to form a compact rope, and then cutting the rope into short fillers, substantially as specified. 3rd. In a machine for forming fillers for cigars, the combination of an endless grooved travelling band, a table having a flat surface situated directly over the said band, with a slot therein of a width practically the same as the groove in the travelling band, through which slot bundles of tobacco leaves are introduced directly into the said band, and suitable compressing devices which co-operate with the said grooved band, substantially as specified. 4th. In a machine for forming the fillers for cigars, an endless band having a groove therein to receive the bundles of tobacco, combined with a table situated over the said band, having a slot therein through which the tobacco is introduced directly to the said band, and an inclined block at the end of the said slot to force the tobacco as it leaves the hands of the feeding attendant within the said groove, substantially as specified. 5th. In a machine for forming the fillers for cigars, the combination of an endless grooved travelling band, devices to press tobacco therein, and a switch block having an aperture which extends longitudinally of the band, and a spur which enters the groove in the said band to guide the continuous filler formed in the same into the said aperture, substantially as specified. 6th. In a machine for forming the fillers for cigars, the combination of an endless grooved travelling band devices to press tobacco therein, a switch block having an apperture which extends longitudinally of the band, and a spur which enters the groove in the said band to guide the continuous filler formed in the same into the said aperture, and a knife adapted to have a reciprocating movement across the end of the said switch block, substantially as specified. 7th. In a machine for forming fillers for cigars, the combination of an endless grooved travelling band, devices to press tobacco therein, a switch block having an aperture which extends longitudinally of the band, and a spur which enters the groove in the said band to guide the continuous filler formed in the same into the said aperture, and a triangular knife adapted to have a reciprocating movement across the end of the said switch block, substantially as specified. 8th. In a machine for forming fillers for cigars, the combination of an endless grooved travelling band and devices for forcing tobacco therein, a hollow block having a triangular end, and a triangular knife adapted to have a reciprocating movement across the triangular end of the said block, substantially as specified. 9th. In a cigar machine, the combination of a filler forming mechanism, a table, a conveyer to carry the fillers longitudinally of the said table, and filler rolling up devices arranged on the said table and laterally of the said conveyer, substantially as specified. 10th. In a machine for forming the fillers for cigars, a chain belt having a groove in its upper surface, combined with corresponding devices to form the upper side of the said filler, a guide to turn out the continuous filler from the grooved chain belt, a knife in the rear of the guide having a reciprocating movement to cut the continuous filler into short pieces, and an endless apron to carry the completed fillers away from the said forming chain, substantially as specified. 11th. In a machine for forming the fillers for cigars, a chain belt having a groove in its upper surface, combined with compressing devices to form the upper side of the said filler, a guide to turn out the continuous filler from the grooved chain belt, and a knife in the rear of the guide having a reciprocating movement to cut the continuous filler into short pieces, substantially as specified.

No. 42,455. Anti-Friction Bearing.

(*Coussinet de tourillon sans friction.*)

Luther Kendall Jewett, Boston, Massachusetts, U.S.A., 4th April, 1893; 6 years.

Claim.—1st. In an anti-friction bearing or support, the combination, with two bearing surfaces provided with rack bars, of one or more intermediate anti-friction rollers provided at its opposite ends with gears to engage the rack bars on the bearing surfaces, substantially as described. 2nd. In an anti-friction bearing or support, the combination, with two bearing surfaces provided with rack bars, of one or more intermediate anti-friction rollers provided at its opposite

ends with gears to engage the rack bars on the bearing surfaces, and a locking device to hold said rollers in proper working position, substantially as described. 3rd. In an anti-friction bearing or support, the combination, with two bearing surfaces provided with rack bars, of one or more intermediate anti-friction rollers provided at its opposite ends with gears to engage the rack bars on the bearing surfaces, a spacing frame movable with the rollers, and a locking device to engage said spacing frame, substantially as described. 4th. In an anti-friction bearing or support, the combination, with two flat bearing surfaces provided with rack bars, a flange A^2, secured to or forming part of one of said bearing surfaces, and a packing interposed between the said flange and one of the bearing surfaces, of an anti-friction roller or rollers interposed between said surfaces and provided with gears to engage said rack bars, substantially as described. 5th. In an anti-friction bearing or support, the combination, with two flat bearing surfaces, a flange A^2, secured to or forming part of one of said surfaces, and a packing interposed between said flange and bearing surface, of an anti-friction device or roller interposed between said bearing surface, substantially as described.

No. 42,456. Electric Railway. (*Chemin de fer électrique.*)

James Ferguson Munsie, Brooklyn, New York, U.S.A., 4th April, 1893; 6 years.

Claim.—1st. An electric railway consisting of a series of wells, or man holes spaced at intervals along the line, slotted guard casings extending from one well to the next in the series, feeding conductors exterior to said casings, and contacts connected to the feeding conductors and located at the ends of the casings, substantially as described. 2nd. An electric railway consisting of a series of wells or man holes spaced at intervals along the line, slotted guard casings extending from one well to the next in the series, an underground feeding conductor conduit extending along the line exterior to the casings and communicating with the wells, and contacts connected with the feeding conductors and located at the ends of the casings, substantially as described. 3rd. An electric railway consisting of a series of wells or man holes spaced at intervals along the line, slotted guard casings extending from one well to the next in the series, feeding conductors exterior to said casings, contacts connected to the feeding conductors and located at the ends of the casings, an insulating support for said contacts, and a base of conducting material upon which the insulating support is mounted, said base being grounded, substantially as described. 4th. An electric railway consisting of a series of wells or manholes spaced at intervals along the lines, slotted guard casings extending from one well to the next in the series, feeding conductors, contacts connected to the feeding conductors and located in front of the ends of the casings, and collecting pipes for carrying off dripping from said ends, substantially as described. 5th. In an electric railway of the kind described, the combination with the insulator, of a support therefor consisting of a metallic pillar and an insulating tube located within said pillar for the reception of the feed wire, substantially as described. 6th. In an electric railway, a car provided with a flat contact bar flexible edgewise, substantially as described. 7th. In an electric railway, a car provided with a longitudinally and laterally flexible contact bar, substantially as described. 8th. In an electric railway, a car provided with a contact bar consisting of a plurality of sections connected together by flexible joints, substantially as described. 9th. In an electric railway, a car provided with a contact bar and consisting of a plurality of sections jointed together at points intermediate of its supports, substantially as described. 10th. In an electric railway, a car provided with a contact bar, consisting of a plurality of sections and side pieces rigidly connected to the end of one of the sections, and flexibly connected to the proximate end of the adjacent section, substantially as described. 11th. In an electric railway, a car provided with a contact bar, consisting of a plurality of sections, side pieces connected to the end of one of the sections by a plurality of bolts, and to the proximate end of the adjacent section by a single bolt, substantially as described. 12th. An insulator provided with a cup shaped base, an inner projection for the attachment of a contact, an outlying partition between the said inner projection and the interior surface of the base, and an overhanging cap piece, the space on each side of the partition containing hygroscopic material, substantially as described. 13th. In an electrical railway system, a conductor to take up the electric currents, combined with a tube or shield therefor, an insulator on said shield to prevent short circuiting therethrough, and a drying medium to counteract the effect of moisture the shield and conductor, substantially as described. 14th. In an electrical railway system, a conductor to take up the current, combined with a tube or shield therefor, an insulator and a hygroscopic material to dry said insulator, substantially as described. 15th. In an electrical railway system, a conductor to take up the current, combined with a tube or shield for the same, a cap piece on said shield, and a cup beneath said cap piece containing an absorbent or drier to absorb moisture within the cap piece, substantially as described. 16th. In an electrical railway system, a conductor to take up the electric current combined with a tube or shield for the same, a cap piece on the same having its opening facing downward, and a cup beneath the latter carried by said conductor and insulated from the cap piece, and an absorbent or drier in said cup, substantially as described. 17th. In an electrical railway system, a conductor to take up the electric current, combined with a tube or shield on the same, and insulators on opposite ends of the shield, and a drying medium to prevent moisture collecting between the insulator and the conductor at the ends of the shield, substantially as described.

No. 42,457. Process of and Apparatus for Extracting Metals from Ores. (*Procéde et appareil pour extraire les métaux des minerais.*)

James John Shedlock and Thomas Denny, both of 105 Gresham House, London, England, 5th April, 1893; 6 years.

Claim.—1st. In the process herein described for extracting metal from ores subjecting, the pulverized ore to violent agitation by jets of air and steam while it is heated by jets of gas. 2nd. In an apparatus for extracting metals from ores, the combination of the gas producer *a* and steam generator *g*, with the treating chamber c provided with the gas burners G, G, the steam and air jets B and E, E, whereby the pulverized ore blown into the chamber by the jet B is acted upon and agitated by the streams issuing from the jets E, E, whilst under the influence of the burning gas from the burners G, G. 3rd. Treating the pulverized deposit from the apparatus referred to in the preceding claims by subjecting it to abrading and crushing action in presence of fluid amalgamating or alloying metal. 4th. In an apparatus for extracting metals from ores, the amalgamating and alloying device consisting of the following elements in combination: the conoidal shell Q having a space or well at its lower end and pockets formed in its sides, the internal rotative shell P having a hollow shaft and pockets formed in its sides, and means for rotating the shell P, substantially as and for the purpose set forth. 5th. The herein described process for treating ores, first, by agitating the ores finely pulverized and heated by gas flames with air and steam thereby oxidizing some of their ingredients and driving off the gases and vapours evolved from them, and secondly, by subjecting the ores after such treatment to crushing and abrading action in presence of fluid amalgamating or alloying metal.

No. 42,458. Weighing Machine. (*Balance à bascule.*)

Charles Henry Phillips, Boston, Massachusetts, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. In a weighing machine, the combination, substantially as and for the purpose set forth, of two buckets or receptacles arranged side by side and having a vertical movement, a scale beam or balance connected to each bucket or receptacle, and operating to hold the bucket in position, but permitting its descent when it has received a load equal in weight to the weight indicated upon the balance or scale beam, an oscillating chute discharging alternately into one bucket or the other, according to the position of the end of the chute, mechanism operated by the movement of a loaded bucket to oscillate the chute, whereby it will discharge into the empty bucket, a double faced chute pivoted under the discharging chute and oscillating in an opposite direction, and mechanism operated by the downward movement of each bucket to simultaneously oscillate these chutes in opposite directions. 2nd. In a weighing machine, the combination, substantially as and for the purpose set forth, of two buckets or receptacles arranged side by side, and each having an independent vertical movement, a scale beam or balance connected to each bucket or receptacle, and operating to hold the bucket in position, but permitting its descent when it has received a load equal in weight to the weight indicated upon the balance or scale beam, an oscillating chute discharging alternately into one bucket or other, according to the position of the end of the chute, a double faced chute pivoted under the discharging chute and oscillating in the opposite direction, mechanism operated by the downward movement of each bucket to simultaneously oscillate these chutes in opposite directions, a weight attached to each bucket for raising the bucket when relieved of the weight of its contents by the discharge of the same, a hinged gate in the bottom of each bucket opening downward, and mechanism operating to automatically open said gate when the bucket is filled and descends, and to close the gate when the bucket is filled. 3rd. The combination, substantially as and for the purpose set forth, of the rod P, attached to the bucket E, the adjustable swinging piece S, pivoted on said rod and embracing the same, the scale beam R, and the arm *g*, on the same, embracing the rod P, and curved surfaces on the ends of the swinging piece S, and arm *g*, bearing against each other. 4th. The combination, substantially as and for the purpose set forth, of the rod P, attached to the bucket E, the adjustable swinging piece S, pivoted on said rod and embracing the same, the rollers 1, on said swinging piece S, the scale beam R, and the arm *g*, on the same, embracing the rod P, and carrying rollers *h*, which bear against the rollers 1. 5th. The combination, substantially as and for the purpose set forth, of the oscillating discharging chute, the rods P, P, each attached, respectively, to a bucket or receptacle E, arms T, T, each extending toward the centre of the case and attached to a rock shaft *t*, pivoted on the case on opposite sides of each rod, a pin *r*, on each rod above the free end of each lever and engaging with the same only on the descent of the rod, the lever *u*, one on each rock shaft, and the arm V, pivoted on the arm *u*, and attached to the oscillating chute, whereby the engagement of the pin *r*, with each arm T, effects the movement of the oscillating chute. 6th. The combination, substantially as and for the purpose set forth, of

the oscillating discharging chute N, the rods P, P, each attached respectively to a bucket or receptacle E, arms T, T, each extending toward the centre of the case and attached to a rock shaft *t*, pivoted to the case on opposite sides of each rod, a pin *r*, on each rod above the free end of each arm T, and engaging with the same on the descent of the rod, the levers *u*, one on each rock shaft, the arm V, pivoted on the levers *u*, and attached to the oscillating chute N, whereby the engagement of the pin *r*, with each arm T, effects the movement of the oscillating chute, the oscillating double faced chute G^1, pivoted with the chute N, and arms H^1, H^1, each pivoted to a lever *u*, and connected to opposite sides of the chute G^1, as described. 7th. The combination, substantially as and for the purpose set forth, with the top of the case A, of the opening J, on the same, the oscillating double faced chute G, moving in said opening, and the oscillating discharging chute N, having its discharging end not less in width than the width of the remainder of the chute.

No. 42,459. Food Warmer.

(*Machine à chauffer les aliments.*)

Clara A. Penniston, New York, State of New York, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. As a device for keeping food, &c., at a desired temperature, a hand bag divided longitudinally by a partition, one side of which contains the means for keeping such goods at the desired temperature and the other the goods themselves, all as and for the purposes set forth. 2nd. The portable bag A with handle B, compartments A^1 with funnel D, and A^2 with flap E, and pockets F F, substantially as and for the purposes set forth.

No. 42,460. Automatic Window Lock and Catch.

(*Serrure et arrêt automatique pour fenêtres.*)

Frederick G. Woodruff and Robert G. Sharp, both of Saint John, New Brunswick, Canada, 5th April, 1893; 6 years.

Claim.—1st. The sliding plate B B, as formed and made with the vertical slot *e*, and the circular terminus *f f*, and as connected with the front plate A A, by the knob D, and in combination with the square spindle E E, substantially as and for the purpose hereinbefore set forth. 2nd. The front plate A A, formed and made with the vertical slot *e e*, and the groove *a a*, on the back to secure the sliding plate B, B, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the plate A A, the sliding plate B B, the knot D, the square spindle E E, the case F F, and the gear wheel G G, with the track K K, as applied to windows and sashes, substantially as and for the purpose hereinbefore set forth.

No. 42,461. Nipple for Radiators.

(*Boucle d'accouplement pour calorifères.*)

Eugène S. Mamy and Charles F. Lalonde, both of Montreal, Quebec, Canada, 5th April, 1893; 6 years

Résumé.—1° Dans une boucle d'accouplement, les deux extrémités C B filletées à droit dans des proportions différentes, tel que ci-dessus décrit. 2° Dans une boucle d'accouplement, les deux extrémités C B filletées à gauche, dans des proportions différentes, tel que ci-dessus décrit. 3° Dans une boucle d'accouplement telle que décrite les boutons intérieurs H^{11} tels que spécifiés et pour les fins indiquées.

No. 42,462. Chromatic Pitch Pipe.

(*Diapason chromatique.*)

Charles Harris Congdon, St. Paul, Minnesota, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. In a device of the class described, the combination of the base, having a series of parallel transverse grooves, the adjacent grooves opening to different sides of the base, series of reeds arranged above said grooves, and an enclosing cap above said reeds, provided with a suitable vent, substantially as described. 2nd. In a device of the class described, the combination of the base having a series of recesses, series of recesses arranged respectively above said recesses, a cover above said reeds, notches or outlets respectively connecting said recesses with the different sides of the base in such manner that the outlets of adjacent recesses are upon different sides of the instrument, substantially as described. 3rd. In a device of the class described, the combination of the recessed base, a reed plate arranged thereon having a bottom and a top series of reeds, one of each series standing above each of the recesses in the base, a cover fitted upon said plate above said reeds and provided with a suitable vent, and notches or outlets in the sides of the base communicating severally with said recesses and serving as ports for said reeds, so that the outlets of adjacent recesses are upon different sides of the instrument, substantially as described.

No. 42,463. Safety Boiler Feed.

(*Alimentateur de surêté pour chaudières.*)

Willard Bingham Culver, Scranton, Pennsylvania, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. A boiler feed consisting of a chamber having communication with the steam and water of a steam boiler, and provided with a vessel which is connected with a valve for the escape of steam from said chamber, a valve connected with a water supply and also with the boiler, a lever attached to the last named valve, and a plunger operated by the steam escape valve and secured to said lever, said parts being combined, substantially as described. 2nd. A boiler feed, having the chamber A, the side of chamber 8, with steam outlet, the pivoted lever 6, the rod 5, secured to said lever, the valve C, connected to said lever and controlling said steam outlet, and the vessel B, loosely fitted on said rod 5, and adapted to operate the said lever 6, said parts being combined, substantially as and for the purpose set forth. 3rd. A boiler feed having a water and steam chamber, a side chamber communicating with said first chamber and having a steam outlet, a lever pivoted in said side chamber and provided with a valve controlling said steam outlet, a rod in said first chamber, a vessel adapted to bear on the rod so as to operate said lever and valve, and a spring adapted to normally close said valve, said parts being combined, substantially as and for the purpose set forth. 4th. A boiler feed, consisting of the chamber A, in combination with the boiler, a side chamber communicating with said chamber A, the chamber 9, with steam outlet, the lever 6, with rod 5, the vessel B, on said rod, the chamber 10, communicating with said chamber 9, a steam whistle connected with said chamber 8, and a water supply pipe leading to said chamber A, and a pivoted lever having a plunger working in chamber 10, a stem adapted to operate said whistle, and a valve controlling said water supply pipe, substantially as described. 5th. In a boiler feed, the vessel B, the chamber A, having the plunger chamber 10, and the whistle 16, communicating with said chamber A, substantially as and for the purpose set forth.

No. 42,464. Cattle Guard. (*Garde-bétail.*)

The Consolidated Railway Equipment Company, assignee of Samuel Street Fuller, Stratford, assignee of Thomas Richard Fuller and William Coe Nunn, both of Toronto, all in Ontario, Canada, 5th April, 1893; 6 years.

Claim.—1st. In a cattle guard, a grating, formed of a series of bars A, set on a fulcrum being arranged in a line transeverely of the track on one side of the centre of the length of the bars and said bars A being connected at their ends by the cross bars B, C, all substantially as shown and described. 2nd. In a cattle guard, a section of grating having its fulcrum supported on a line transversely of the track, in combination with a block C, arranged at one end of said grating and having an inclined upper surface, substantially as described,

No. 42,465. Disinfector. (*Désinfecteur.*)

Adolphus Davis, of Montreal, Quebec, Canada, 5th April, 1893; 6 years.

Claim.—1st. A disinfector characterized by the following elements: A receptacle arranged to receive the disinfecting agent and having two openings adapted to be hermetically sealed, trackways inside and outside of said receptacle, carriers for travelling on same and distinct or isolated entry and exit compartments into which said receptacle opens, as set forth. 2nd. A disinfecting apparatus consisting of a double jacketed tubular receptacle adapted to be hermetically sealed, a heating space provided by the double jackets, controlled inlet and outlet to and from said space for the disinfecting agent, and carriers for entering said receptacle as set forth. 3rd. A disinfecting apparatus consisting of a double jacketed tubular receptacle adapted to be hermetically sealed, a heating space provided by the double jackets, controlled inlet and outlet to and from said space for the disinfecting agent, evaporating ducts communicating with the interior of said receptacle, and carriers for entering said receptacle, as set forth. 4th. A disinfecting apparatus consisting of a tubular receptacle, adapted to be hermetically sealed, one or more perforated pipes arranged within said receptacle, suitably controlled connections between said pipes and a steam supply, and carriers for entering said receptacle. 5th. In a disinfecting apparatus, the truck or carrier having wheel mounted body, open framework sides and transverse connecting roller stays or supports, as set forth. 6th. In a disinfecting apparatus, the door clamping devices in the form of eccentric levers DD, pivoted in hinged brackets D^1, as shown and described.

No. 42,466. Form-Setting and Type-Casting Machine.

(*Serre-forme et machine pour couler les caractères.*)

George Corsa, New York, State of New York, U.S.A., 5th April, 1893; 18 years.

Claim.—1st. The combination of a series of blocks and a series of rigid radially pivoted carriers, and a slot into which they successively enter thereby forming a matrix for a line of type or other characters, substantially as set forth. 2nd. The combination with a series of blocks, of a series of pivoted carriers having each a longitudinally extensible stem, said carriers having the pivots arranged on a curved line, substantially as set forth. 3rd. The combination with a series of blocks bearing a series of characters, of a series of rigid carriers arranged in nests with their pivots on a curved line, substantially as set forth. 4th. The combination with the blocks, of carriers each

consisting of a stem 2, and a rod 1 connected to the block, and to the stem to slide thereon and form part thereof, substantially as set forth. 5th. The combination of the blocks, the pivoted carriers therefor, the shouldered plates carried by the stems of the carriers, and a lifter connected to be operated by a key and having a pawl engaging with the said shoulder, substantially as set forth. 6th. The combination with the blocks, of pivoted carriers therefor, the said carriers having their pivots arranged on a curved line, the plates to which the stems of the carriers are secured having shoulders, the pivoted lifters each carrying a pawl adapted to engage with one of the said shoulders and connected to be operated by a key, substantially as set forth. 7th. The combination with each series of blocks having like characters, of a nest of superposed carriers all secured to pivoted plates having shoulders arranged at different distances from the pivot, and a lifter connected to be operated by a key, and having a pawl engaging said shoulder, substantially as set forth. 8th. The combination of the rest of carriers secured to plates having shoulders, and a lifter consisting of a pivoted arm carrying a spring bolt bearing on the edges of said plates, substantially as set forth. 9th. The combination of a series of carriers bearing blocks at their ends and arranged one above the other, a nest of plates arranged side by side upon a common pivot and having angular extensions along their edges to which the stems of the carriers are secured, and a lifter for the carriers, substantially as set forth. 10th. The combination of a series of pivoted extensible carriers bearing blocks at their ends, and a bed provided with a slot having a flaring or expanded mouth which directs the carriers into the slot as they are swung on their pivots, substantially as set forth. 11th. The combination with the radially arranged rigid carriers and lifters therefor, of distributors consisting of bars arranged on a curved line and swinging to and from the carriers, substantially as set forth. 12th. The combination of the series of rigid carriers, a series of distributing bars connected to levers, and a movable curved bar connected to move all the levers, substantially as set forth. 13th. The combination of a series of carriers, the lifter therefor, the distributers L, supported by pivoted arms 7, and arranged to swing to and from the carriers, and a movable curved bar connected with the arms of the distributing bars, substantially as set forth. 14th. The combination of the lifters, the keys, cords connected with the lifters, and the keys and a revolving drum round which each cord is extended, substantially as set forth. 15th. The combination with the keys and parts to be actuated thereby, of intermediate cords extending round a drum in position to be drawn frictionally against the drum on depressing the keys, substantially as set forth. 16th. The combination of the keys, parts to be actuated thereby, the intermediate cords, levers and drum M, substantially as set forth. 17th. The combination of the carriers, bearing blocks at their ends, the lifters therefor, the operating keys, the cords connected with the lifters and with the keys, and a revolving drum with which the cords are made to engage by moving the keys, substantially as set forth. 18th. The combination of a series of radially arranged carriers bearing blocks at their ends and pivoted on a curved line, the lifters for the carriers, a series of keys, a series of cords connecting the keys and the lifters, and a revolving drum around which each cord passes in position to be drawn frictionally against the same by moving the keys, substantially as set forth. 19th. The combination of the blocks, radially pivoted carriers and guides consisting of wires strung extending radially between the different carriers, substantially as set forth. 20th. The combination of the carriers, guide wires and tightening pins, substantially as set forth. 21st. The combination of the carriers, and the guide wires adjustably supported at their ends, substantially as set forth. 22nd. The combination of the blocks, the radially pivoted carriers, the guides consisting of wires extending radially between the carriers, and the adjustable supports for the guide wires, substantially as set forth. 23rd. The combination, of the carriers, the guide wires between which the carriers move, the adjustable pivoted stems upon which the guide wires are supported at their ends and the clamp screws for the stems, substantially as set forth. 24th. The combination, of the carriers, the guide wires, the pins 109 around which the wires pass, the tightening pins 10 to which the ends of the wires are secured and the adjustable plate or stem carrying a supporting pin for the wire, mounted between the tightening pins, substantially as set forth. 25th. The combination of the blocks, carriers therefor, slotted platform, and clamp R having a bevelled edge substantially as set forth. 26th. The combination of the blocks, the carriers therefor, a platform provided with a slot having an inclined or expanded mouth into which the blocks are delivered, a movable slide having an inclined edge arranged near the outer or mouth end of the said slot and constituting a clamp for the blocks and mechanism for moving the slide transversely across the slot, substantially as set forth. 27th. The combination of the blocks, the carriers therefor, a platform provided with a slot, and a spring catch lying across the slot, permitting the blocks to freely pass into the slot, but preventing their accidental removal, substantially as set forth. 28th. The combination, of the blocks, the carriers therefor, a platform provided with a slot, a spring catch lying across the slot, a withdrawing device for the catch, and a travelling pusher which discharges the blocks from the slot, substantially as set forth. 29th. The combination of the blocks, the carriers therefor, a platform provided with a slot, a spring catch lying across the slot, a clamp R, and means for withdrawing the catch simultaneously with the forward movement of the clamp, substantially as set forth. 30th. The combination of the blocks, the carriers therefor, a platform provided with a slot, a spring catch lying across the slot, a mould movable over the blocks, a means for moving the mould, a bar connected with the said means which withdraws the catch from across the slot, and a clamp R having an inclined edge, substantially as set forth. 31st. The combination with the series of blocks of a series of justifiers each consisting of a movable bar having necks of successively increasing thickness, substantially as set forth. 32nd. The justifying bars each having a series of necks of different thicknesses and connecting inclined shoulders, substantially as set forth. 33rd. The combination of the justifying bars, a pusher for moving them longitudinally, a retainer for holding them out of position, and springs for moving them laterally into position, substantially as set forth. 34th. The combination of the series of justifying bars arranged side by side, a retainer situated to one side of the series of justifying bars, against which they may be brought successively, a pusher arranged adjacent to the retainer for moving each bar, and a spring for moving each bar laterally after it has been moved longitudinally by the pusher, substantially as set forth. 35th. The combination of a series of justifying bars arranged side by side, a retainer for holding the bars out of position, a pusher for moving the bars longitudinally away from the retainer, the bars 21, extending across the justifying bars rnd connected therewith, and springs connecting the bars 21, with some stationary part of the apparatus, substantially as set forth. 36th. The combination, of the series of justifying bars N, each provided with a pin 19, a retainer situated to one side of the series of justifying bars, and consisting of a shoulder on a stationary bar 34, against which the pins 19, are successively made to bear, a pusher arranged adjacent to the retainer and adapted to engage with the pins 19, to move the bars longitudinally, the bars 21, each connected with one of the justifying bars for moving them transversely, and the springs 23, connected with the bars 21, substantially as set forth. 37th. The combination, of a series of justifying bars arranged side by side, each having a support at its rear end, a retainer for holding the bars out of position, a pusher for releasing the bars from the retainer, and a spring or its equivalent, for moving each bar laterally after having been released by the pusher, substantially as set forth. 38th. The combination of a justifying bar, provided at its end with a socket, a rod having one end entering the said socket, and the other end provided with a stud supported in a bar, a spring surrounding said rod between the end of the justifying bar and said stud, a retainer for the bar holding it out of position, a pusher for moving the bar away from the retainer, and a spring for moving the bar laterally, substantially as set forth. 39th. The combination, of the justifying bars, a pusher for moving them longitudinally, a retainer for holding them out of position, springs for moving them laterally into position, and the alternately contractible and expansible springs 28, substantially as and for the purpose set forth. 40th. The combination, of the movable justifying bars N, of a retainer for holding them out of position, a pusher for moving each bar, when brought opposite it, away from the retainer, and a driver for moving the bars across the line of blocks, substantially as set forth. 41st. The combination of the series of independent parallel justifying bars, retainer, pusher, driver and yielding spring bearings between the driver and bars, substantially as set forth. 42nd. The combination of a series of justifying bars, a retainer for holding them out of position a pusher for moving them from the retainer, a series of rods 27, entersockets in the ends of the justifying bar, a driving bar 31, with which the said rods are connected, and springs arranged between the ends of the justifying bars and the said driving bar, substantially as set forth. 43rd. The combination of a series of justifying bars, a retainer for holding them out of position, a pusher for moving the bars away from the retainer, the rods 21 entering sockets in the ends of the justifying bars, and provided at their ends with studs 29, a slotted driving bar 31 into the slot of which said studs enter, the springs mounted between the bar 31 and the justifying bars and the justifying bars and operative connections between the bar 31 and some moving part of the machine, substantially as set forth. 44th. The combination of the movable justifying bars, pusher and key connected with the pusher, substantially as set forth. 45th. The combination with the slotted platform B and blocks and carriers therefor of the movable pusher W, substantially as set forth. 46th. The combination with the slotted platform, of the blocks, the carriers therefor arranged to carry the blocks into the slot of the platform, a movable block normally arranged at the rear or inner end of the slot and movable connections for moving the pusher to force the blocks out from the slot, substantially as set forth. 47th. The combination with the slotted platform B, of the movable blocks, the carriers therefor arranged to carry the blocks into the slot of the platform, a movable pusher normally lying at the rear or inner end of the slot and lever connections between the said movable block, and a cam on an intermittingly driven shaft of the machine, for moving the pusher to force the blocks out of the slot, substantially as set forth. 48th. The mould consisting of two sections side by side combined with devices for moving it into and out of position and for clamping the sections together, substantially as set forth. 49th. The combination of the movable two part mould and the wedge 94, substantially as set forth. 50th. The combination of the slotted platform and mould pivoted to the platform to swing to and from the slot, substantially as set forth. 51st. The combination of the slotted platform, the shaft supported in bearings and carrying the mould, and appliances for rocking said shaft, substantially as set

forth. 52nd. The combination of the slotted platform, the block 43 having a beveled face *a*, and movable two part mould, substantially as set forth. 53rd. The combination of the pivoted vertically swinging mould, and the lead box E, movable to and from its position above the mould, substantially as set forth. 54th. The combination with the pivoted vertically swinging mould of the heater H, substantially as set forth. 55th. The lead box provided with a plug cock in combination with an independent mould, substantially as set forth. 56th. The combination of the mould, the shaft 42, carried thereby and supported in bearings in the frame of the machine, a pinion mounted on the said shaft, a rack for rocking the pinion, and operative connections between a moving shaft of the machine and the rack, substantially as set forth. 57th. The combination of the blocks and carriers, plate B, slotted at *x*, justifying device G, mould movable to and from the slot, and lead box movable to and from the mould, substantially as set forth. 58th. The combination with a series of keys, of a series of rigid carriers supporting blocks, connections between the keys and carriers, and a justifying device the parts whereof are arranged in position to be introduced between the blocks when arranged in line by the action of keys, substantially as set forth. 59th. The combination with a series of keys, of a series of carriers supporting blocks, connections between the keys and the carriers, a justifying device the parts whereof are arranged in position to be introduced between the blocks by the action of a key, and a movable slide forming a clamp arranged to take its position at the end of the line of blocks, substantially as set forth. 60th. The combination with a series of keys, of a series of rigid carriers supporting blocks, connections between the keys and carriers, a justifying device, a movable mould, and a lead box separate therefrom arranged to move over the mould, substantially as set forth. 61st. The combination with the slotted platform, of the two part mould hinged to swing over the said slot, the bar 45, for closing the parts of the mould together, arranged adjacent to the slot, the wedge for separating the parts of the mould when moved away from the slot, the lead box movable to and from the mould, and operative connections for moving the mould and lead box, and for delivering the molten lead to the mould, substantially as set forth. 62nd. The combination of a continuously driven shaft, an intermittently driven shaft provided with cams for giving motion to various parts of the machine, a clutch between the said shafts, a revolving drum, a cord connected with a clutch operative lever and passing round said drum, and a key to which the said cord is connected, substantially as set forth. 63rd. The combination, with the key board and keys, of two fonts of blocks and carriers, connections whereby either font of blocks may be moved from the keys, substantially as set forth. 64th. The combination of two fonts of blocks and carriers and connections extending to a position adjacent to a shifting key board, substantially as set forth. 65th. The combination of a key board provided with a single series of keys, two fonts of blocks and carriers, two sets of levers arranged adjacent to the keys, operative connections between each set of levers and each set of carriers, and a shifting key board in which the keys are mounted, whereby the keys may be brought into position to operate either set of levers, substantially as set forth. 66. The combination of a movable key board provided with a single series of keys, two fonts of blocks and two sets of carriers for the blocks, two sets of levers arranged adjacent to the movable key board, operative connections between each set of levers and each set of carriers, levers bearing against the movable key board for shifting it to bring the keys above one or other set of levers and means for operating the levers bearing against the movable key board, substantially as set forth. 67. The combination of a movable key board having a single set of keys, two stationary key boards each having a single set of keys, two fonts of blocks and two sets of carriers for the blocks, two sets of levers arranged adjacent to the movable key board and a single set of levers arranged adjacent to each stationary key board, operative connections between one set of carriers and the levers adjacent to one of the stationary key boards and one set of levers adjacent to the movable key board, other operative connections between the other set of carriers and the levers adjacent to the other stationary key board, and the other set of levers adjacent to the movable key board, and means for moving the movable key board to bring its keys into position to operate either set of levers adjacent thereto, substantially as set forth. 68th. The combination of a continuously rotating shaft, a clutch thereon with a pin 78, a shaft intermittently driven from the shaft provided with a disk adjacent to the clutch and provided with a slot 125, arranged to receive the pin 73, and means for shifting the clutch, substantially as set forth. 69th. The combination of two fonts of blocks, two sets of carriers therefor, two sets of casting devices, two sets of mechanism for operating the casting devices, a set of keys in a moveable key board, connections extending from the two sets of carriers to a position adjacent to the key board, and keys for shifting the key board and throwing into operation the operating mechanisms, substantially as set forth. 70th. The combination of two fonts of blocks and two sets of carriers therefor, two sets of levers operatively connected with the carriers, a movable key board carrying a single set of keys for operating the said levers, two sets of casting devices, and mechanisms for operating them, clutches for putting the said mechanism into and out of operation, and keys connected to shift the key board in opposite directions and to simultaneously operate the clutches, substantially as set forth.

No. 42,467. Circuit Controller.

(*Contrôleur de circuit.*)

William Bingham Cleveland, Geneva, Ohio, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. The combination, with a stationary contact and a movable contact, of a casing and a comminuted, non-liquid filling in said casing, said filling being so disposed in the casing as to tumble into the space between the contacts when the movable contact is withdrawn, substantially as set forth. 2nd. The combination of a casing, a comminuted, non-liquid filling therein, a stationary contact above said filling, and a movable contact arranged to be withdrawn into the filling, substantially as set forth. 3rd. The combination of a casing, a comminuted, non-liquid filling therein, a slitted contact sleeve above said filling, and a contact rod sliding in the casing and through the filling and registering with and sliding into the contact sleeve, substantially as set forth. 4th. The combination of a casing, slitted contact sleeves in the upper and lower portions of said casing, a comminuted, non-liquid filling partly occupying the space in the casing between said sleeves, and a contact rod insulated from the casing and movably inserted through the latter and through the contact sleeves, substantially as set forth. 5th. The combination of a stationary and movable contact, a casing and a non-liquid filling in said casing, said filling being so disposed as to interpose between said contacts when the movable contact is withdrawn, substantially as set forth.

No. 42,468. Split Pulley. (*Poulie d'assemblage.*)

Daniel Taylor McNeil, Kokomo, Indiana, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. In a split pulley, two clamping blocks, between which the shaft passes, having a series of grooves in their outer faces, which extend entirely across them, and transverse bolt holes between the grooves, continuous truss arms placed in said grooves, a plate or plates which are applied to the blocks outside of the truss arms, and transverse to the grooves, and clamping bolts, which pass through the plates and the said bolt holes, substantially as shown. 2nd. In a split pulley, the rim, two clamping blocks between which the shaft passes, having a series of grooves which extend entirely across the outer faces of the blocks, and continuous truss arms, which are formed of plates having a straight central portion placed edgewise in the said grooves, bent edgewise outward from the blocks and then secured to the rims, and a means for securing the truss arms to the blocks, whereby they extend edgewise entirely across the pulley, and the arms in the two blocks diverge from each other, the parts combined, substantially as shown.

No. 42,469. Signal for Railways.

(*Signal de chemin de fer.*)

William Dart Sheldon, Providence, Rhode Island, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. The method herein described for lighting the roadbed of a railroad, the same consisting in lighting electric lamps and extinguishing the same automatically by closing and opening an electric circuit, as described. 2nd. The method herein described of signalling the approach of a train on a railroad, the same consisting in closing an electric circuit, conducting electric energy of high tension automatically by the passage of the train and lighting an electric lamp at a distance in advance of the train, as described. 3rd. A railroad signal consisting of an electric lamp lighted automatically in front of a passing train by closing the electric circuit, as described. 4th. The combination in a railroad signal, with a source of electric energy sufficient to supply two or more arc lights, of lamps placed at intervals along the road and the devices herein shown and described for automatically lighting and extinguishing the lamps, as described. 5th. In combination, with a source of electric energy sufficient to supply one or more arc lights and the positive and negative electrodes forming a circuit extending along a railroad, of switches constructed to operate by a passing train and signal the approaching train in advance of the switch operated upon, as described. 6th. A railroad signal, consisting in two lamps placed one near each end of a section of the railroad connected with conductor wires adapted to carry electric energy of high tension, a source of electric energy constructed to make the circuit to light the lamps and break the same to extinguish the lamps automatically by the passing train, as described. 7th. The combination, with the source of electric energy 8, of the conductors 9 and 10, and lamps connected with the conductors through an intermediate switch operated by the passage of a train, as described. 8th. The combination, with a source of electric energy of high tension sufficient to supply two or more arc lamps, of the conductors 9 and 10, a railroad, the conductors 11 and 12, a switch operated by the passage of a train, the magnet 27, and conductors 13, constructed to close the electric circuit and utilize the electric energy at a point in advance of the passing train, as described.

No. 42,470. Signal for Railway.

(*Signal de chemin de fer.*)

William Dart Sheldon, Providence, Rhode Island, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. In a railroad signal, the combination with the main circuit conductors, and an electro motor connected with one of the main circuit conductors, of a switch connected with the other main circuit conductor, a semaphore, and mechanism intermediate the semaphore and the electric motor, and the connections intermediate between the switch and the electro motor, constructed to start and stop the motion as described. 2nd. The combination with a railroad and a switch operated automatically by the train, of an electric motor, mechanism for operating a signal by the motor, and connections between the main circuit, the motor and the switch, constructed to operate the signal at a distance from the switch, as described. 3rd. A railroad block signal consisting of signals located at the ends of each section or block, electric motors connecting by mechanism, substantially as described, the motors with the signals, switches located near the end of each section or block, and connections between the switches, the motors and the electric conductors constructed to connect the motors with the circuit and operate the signal in advance of and in the rear of a passing train, as described. 4th. The combination with a railroad and a switch operated automatically by the train, of an electric motor mechanism for operating a signal by the motor, an electric lamp and a cut-out operated by the motor, and connections between the main circuit, the motor, the lamp, and switch, constructed to operate a signal and display a light in advance of the passing train, as described. 5th. The combination with a semaphore signal, an electric motor, mechanism for operating the semaphore, and automatically stopping the motor when the semaphore has moved to the desired position, and a railroad, of two switches placed one on each side and at any desired distance from the signal, each constructed to be operated automatically by a passing train, and the connecting conductor wires between the switches, the motor and the main circuit constructed to start the motor and operate the signal in advance of the passing train by one of the switches, and after passing the signal, start the motor and operate the signal by the other switches automatically, as described. 6th. The combination with a semaphore signal, an electro motor and mechanism intermediate between the motor and the signal, as described, of an electric lamp, a switch operated by the motor, conductor wires connecting the motor and lamp with the main circuit, and a switch or switches for closing the circuit and starting the motor, as described. 7th. The herein described system of automatic railroad signals, the same consisting of a series of semaphore signals placed at intervals along a railroad, electro motors connected by mechanism, substantially as described, with the semaphores, said mechanism being constructed to automatically stop the motor when the semaphore is placed in the predetermined position, switches placed near each semaphore signal connected with two signal operating motors in opposite directions, and a main circuit connected with a source of electric energy with the motor, and the switches constructed to successively start each motor and display a semaphore in advance of a moving train, and a semaphore in the rear of the train, and start the motor at the rear end of the section or block when the train leaves the section or block to operate the signal as described. 8th. A railroad signal system consisting of semaphores, electric lamps and electro motors for operating the semaphores, and lamp cut outs placed at intervals along a railroad connected with switches operated automatically by the passing train, and with a main circuit constructed to display a semaphore, and an electric light at each end of each section or block occupied by a train, as described. 9th. In a railroad signal, the combination with the curved arm 14, the lever 19, the standard 20, spring 21, base 25, magnet 24, armature 23, and contacts 26, of the electric motor 36, the semaphore 43, and intermediate mechanism for operating the semaphore by the motor, and the conductor wires connecting the motor and switch with the main circuit constructed to automatically connect the motor with the circuit by the passing train, as described. 10th. The combination with the electro motor 36, the pinion 37, the gear 38, the shaft 39, provided with the worm 40, the worm gear 41, provided with the pins 44 and 45, the shaft 42, and semaphore 43, of the contact posts 46 and 47, the spring arms 48 and 49, two switches located at points in opposite direction from the signal, and operated automatically by the passing of a train, and conductor wires connecting the electro motor and switches with the main circuit constructed to operate the signal, as described. 11th. The combination with the track of a railroad of the curved spring arm 14, the abutment 16, to which the arm is pivoted, and the plate 17, forming a bearing on which the free end of the arm 14 slides when the same is depressed by a passing train, as described. 12th. The combination with the motor 36, the shaft 42, and the disc 41, secured to the shaft 42, and provided with the pins 44 and 45, and intermediate mechanism between the motor and the shaft 42, of an electric lamp, the cam 57, secured to the shaft 42, the contacts 60 and 61, switches operated by the passing of a train, and conductor wires connecting the electric lamp, the motor and switches with an electric circuit, as described. 13th. The combination with the shaft 42, provided with a day signal or semaphore, of the cam 57, the contact 60 and 61, the worm gear 41, provided with the pins 44 and 45, the worm 40, shaft 39, gear 38, pinion 37, and motor 36, two switches constructed to close a circuit automatically by a passing train, located in opposite directions from the above signals, and connected with the main circuit and with the contact posts 46 and 47, the arms 48 and 49, and conductors connecting the motor and lamp with the main circuit, constructed to operate the signal and display the light, as described. 14th. The combination with the railroad track, and switches operated automatically by the passing train to close an electric circuit, of the posts 34 placed at intervals along the road, and provided with a box 35 containing an electric motor, and mechanism for operating a signal and connecting and disconnecting a lamp, the signal consisting of the disc 52, arms 53, and the lantern 54, provided with the electric lamp 55, constructed to display the signal and the light in front of and in the rear of each train, and extinguish the light and remove the signal when any section or block is cleared, as described.

No. 42,471. Gate for Railways.

(*Barrière de chemin de fer.*)

William Dart, Sheldon, Providence, Rhode Island, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. The combination with a railroad gate, of an electro-motor and mechanism for operating the gate by the motor and switches placed on each side of the gate constructed to operate a switch automatically by the passing train to connect the motor with the circuit, as described. 2nd. The combination with switches automatically operated to close a circuit, of a railroad gate, an electro-motor and mechanism constructed to operate the gate by the motor and break the circuit, as described. 3rd. The combination with a railroad gate an electro-motor and mechanism for opening and closing the gate provided with two contact points and two contact arms operated automatically, of a switch placed at a distance from the gate constructed to close a circuit by the passing train and start the electro motor to close the gate, and a switch placed at a distance beyond the gate and operated by the train to close a circuit and start the electro-motor to open the gate, as described. 4th. The combination with the switch 10 constructed to operate automatically by a passing train to close the circuit, of the conductor wires 48 and 44, the electro-motor 36, the conductor wire 47, and the circuit wires 8 and 9, the gate shaft 20 and intermediate mechanism for operating the gate by the motor, as described. 5th. The combination with the motor 36, the pinion 35, gear wheel 34, shaft 33, worm 32, the worm gear 29, shaft 26, and mechanism intermediate between the shaft 26 and gate shaft 20 constructed to operate the gate, as described. 6th. The combination with the electric motor 36 and mechanism for rotating the shaft 26, of the pins 30 and 31, the spring arms 39 and 40, the contact posts 42 and 43, connections with the circuit and the switches, and the crank 24, connecting rod 25 and crank 23 secured to the shaft 20 of the gate, as described. 7th. The combination with a gate having connections by which other gates are operated, of an electro-motor connected by mechanism, substantially as described, with the grate operating mechanism, two or more switches operated automatically to close the circuit with the motor by the passage of a train by one of the switches, two automatic circuit breakers operated by the motor and connections between the motor, the switches and the main circuit constructed to open the gates on both sides of the track on the approach of a train and close the same, after the train has passed the gates, automatically, as described.

No. 42,472. Machine for Coating Fabrics.

(*Machine pour enduire les étoffes.*)

William P. Cole, Montreal, Quebec, Canada, 5th April, 1893; 6 years.

Claim.—1st. An apparatus of the character described, comprising a fabric holding support, a tank arranged adjacent thereto and having a drum therein, parallel chain guides, clamping chains held to move over suitable pulleys and adapted to pass through the guides, the chains being adapted to carry the fabric, and brushes arranged between the guides and the tank and in the path of the fabric, substantially as described. 2nd. An apparatus of the character described, comprising parallel slotted guides, carrying chains adapted to fit together and pass through the guides, a fabric holding support at one end of the guides, a tank arranged between the guides and the support, means for immersing the fabric in the tank as it passes from the support to the guides, and movable brushes arranged between the tank and the guides and in the path of the fabric, substantially as described. 3rd. An apparatus of the character described, comprising groups or series of longitudinally slotted guides, carrying chains adapted to travel through the guides and to clamp the fabric between them, a sizing tank arranged at the forward end of the first group of tanks, means for immersing the fabric in the sizing tank, a paint tank arranged between the two groups of guides, means for immersing the fabric in the tank, brushes arranged adjacent to the tank and in the path of the fabric, and a winding device to receive the fabric as it comes from the guides, substantially as described. 4th. An apparatus of the character described, comprising parallel longitudinally slotted guides movable back and forth in relation to each other, clamping chains held to move longitudinally through the guides and adapted to hold the fabric between them, a tank arranged at the forward end of the guides, a drum mechanism for forcing the fabric into the tank, and movable brushes arranged between the tank and the guides, sub-

stantially as described. 5th. In an apparatus of the character described, the combination with the parallel guides having longitudinal slots on their inner sides, of the carrying chains adapted to pass together through the guides, one chain being longitudinally grooved and the other having projecting spurs to fit in the groove, substantially as described. 6th. In an apparatus of the character described, the carrying mechanism comprising longitudinally slotted parallel guides adjustable to and from each other, and the clamping chains adapted to move together through the guides, substantially as described. 7th. In an apparatus of the character described, the combination of the longitudinally slotted guides, the carrying chains adapted to move through them, and mechanism for adjusting the guides in relation to each other, substantially as described. 8th. In an apparatus of the character described, the combination of parallel, longitudinally slotted guides, the clamping chains adapted to move together through the guides, the slideways arranged transversely beneath the guides, the guide supports adapted to slide in the slideways, and the screws for actuating the supports, substantially as described. 9th. In an apparatus of the character described, the combination of longitudinally slotted parallel guides arranged in tiers as described, the carrying chains held to move longitudinally through the several guides, the connected supports for sustaining the guides, and a screw mechanism for moving the guides latterly, substantially as described. 10th. The combination, with the carrying chains and guides and the dipping tanks, of reciprocating brushes arranged between the tanks and guides adapted to infringe upon the fabric carried by the chains, substantially as described. 11th. The combination, with the carrying chains and guides, of dipping tanks arranged adjacent to the guides, and reciprocating and rotating brushes arranged between the guides and tanks and in the path of the fabric carried by the chains, substantially as described. 12th. In an apparatus of the character described, the rotary brushes made up in double sections bolted together and fastened to a shaft, substantially as described. 13th. The combination with the guides, the carrying chains and a winding mechanism, of the cutting disks arranged in pairs at the delivery ends of the guides, substantially as described. 14th. In an apparatus of the character described, the combination with the guides and carrying chains of the winding mechanism comprising a driving shaft having a friction pulley thereon, a winding roller mounted above the shaft and provided with a pulley, and a treadle mechanism for forcing the pulleys together, substantially as described. 15th. In a machine of the character described, the combination with the slotted guides, of guide pulleys arranged in pairs at the front end of the lower guides, the pulleys being arranged one above another, and clamping chains adapted to converge between the pulleys and move together through the guides, substantially as described.

No. 42,473. Manufacture of Treads or Coverings for Floors, Stairs and the like. (*Fabrication de couvertures pour planchers, escaliers, etc.*)

Jonathan Mason, Joseph Mason and William Squires Codner, London, England, 5th April, 1893 ; 6 years.

Claim.—1st. In "treads" or coverings for floors, stairs and the like, a base plate with dividing strips or ribs on its surface and intermediate openings for the reception of anti-slipping filling material strips, as and for the purpose herein set forth. 2nd. The combined "tread" covering or strip having a base plate with ribs on its surface, furnishing a dovetailed opening intermediate of said ribs for the reception of an anti-slipping filling material strip, as and for the purpose herein set forth. 3rd. The combined "tread" covering or strip having the plate a, the open V-ribs a^1, the intermediate openings a^2, and the filling pieces b, held by the arms of the V's, as and for the purpose herein set forth. 4th. In treads or coverings as set forth, the headed buttons, studs or staples c, for holding the filling pieces b, as herein described and shown. 5th. In the manufacture of treads for floors, stairs and the like ; first, rolling or stamping a base plate to produce thereon raised ribs, with V-shaped depressions running longitudinally of their length and separated by vacant spaces ; secondly, re-rolling said plate to further open or spread said depressions in the ribs ; thirdly, chilling said plate to harden it ; fourthly, introducing anti-slipping material or substance into the vacant spaces between the ribs, and, finally, rolling or pressing the whole as set forth.

No. 42,474. Pulp Screening Machine.

(*Tamis pour la pulpe.*)

Charles Joseph Foster, Gray, Maine, U.S.A., 5th April, 1893 ; 6 years.

Claim.—1st. In a pulp screening machine, the combination of the balancing piston diaphragms D, D^1, having packings H, K, as described, the troughs L, the screen plates and tank all adapted to form a bellows or suction screen without the use of leather or other flexible packing, substantially as and for the purpose set forth. 2nd, In a pulp screening machine, the combination of the balancing piston diaphragms D, D^1, having packings as described, with the air pipes P, having check valve P^1, and regulating valve P^4, operating, substantially as and for the purpose set forth. 3rd. In a pulp screening machine, the combination of the balancing piston diaphragms D, D^1, having packings as described, with outlet pipe N, having valves as described, and adapted to operate, substantially as and for the purpose set forth. 4th. In a pulp screen, the combination with a tank of a screen within said tank, a pair of piston diaphragms beneath said tank, open ended cylinders within which said piston diaphragms move, piston rods connecting said pistons with the opposite ends of the rocking beam, or other equivalent mechanism, whereby the said piston diaphragm will counter balance each other, and means for operating said rocking beam, substantially as described.

No. 42,475. Feeding Device for Threshing Machines.

(*Appareil à alimenter les machines à battre.*)

John P. Monnett, Rensselaer, Indiana, U.S.A., 5th April, 1893 ; 6 years.

Claim.—1st. In a threshing machine, the combination with the throat or hopper, of the fixed feed board, the pusher rods operating in said throat partially beneath the feed board, and provided with the branch rods which extend over the feed board, the fixed guides arranged below the feed board and receiving the pusher rods, and the crank shaft for reciprocating the pusher rods longitudinally of the hopper, as and for the purpose described. 2nd. In a threshing machine, the combination with the throat or hopper, of the guides situated in the throat or hopper, the detachable feed board fitted within the forward end of the throat or hopper, and the branched or divided pusher rods arranged within the hopper, and each having one member connected to the operating crank, and the other member extending over the feed board, said pusher rods being provided with a series of upwardly extending fingers, as and for the purpose described. 3rd. In a threshing machine, the combination with the throat or hopper, of the inclined feed board, the branched pusher rods arranged along the bottom of the throat or hopper and over the feed board, said rods being provided with upwardly extending inclined fingers, the double crank shaft having the cranks thereon situated on opposite sides of the axis of the shaft, and connections below the feed board and intermediate of the pusher rods and the cranks of the crank shaft, as and for the purpose described. 4th. In a threshing machine, the combination with a throat or hopper, of a series of parallel pusher rods arranged in the bottom of the throat or hopper, and provided with upwardly extending fingers, a detachable feed board arranged above the pusher rods, a series of parallel rods provided with upwardly extending fingers and attached to the main pusher rods and extending over the feed board, and mechanism, substantially as described, for reciprocating the pusher rods over the surface of the bottom of the hopper and the feed board, as and for the purpose described. 5th. In a threshing machine, the combination of the throat or hopper, a fixed feed board, a series of pusher rods provided with the branches which extend over the feed board, the guides arranged below the feed board and receiving the pusher rods, a double crank shaft supported at the rear of the hopper over the inner ends of the pusher rods, a series of fingers carried by said shaft, and two horizontal oscillating bars journalled in the side walls of the throat or hopper and receiving the fingers on the crank shaft, as and for the purpose described.

No. 42,476. Combination Tool. (*Outil à combinaison.*)

Edward Alexander Cochran, Oak Park, Illinois, U.S.A., 5th April, 1893 ; 6 years.

Claim.—1st. The combination of a wrench bar, having a fixed jaw and a movable jaw which slides on the wrench bar, said movable jaw consisting of a steel blank bent to provide perforated arms G, G, and flat spring H, together with the block I, held between the perforated arms G, G, substantially as described. 2nd. The combination of the bar D, having a fixed jaw, and the movable jaw, consisting of a steel blank bent to form parallel arms G, G, and flat spring H, with roughened face G^1, the arms G, G, being perforated at g, g, and the serrated block I, having lateral lugs or bosses J, J, that enter perforations g, substantially as described. 3rd. The combination with the bar D, having a fixed jaw and a serrated face d, and also a corrugated scale E, the graduations of said scale corresponding to the number of teeth d, of the movable jaw consisting of the serrated block I, whose serrations i, engage the serrations d, said block having lateral bosses J, and the frame having arms G, G, and flat spring H, said arms G, G, supporting the block I, and said spring H, bearing on the opposite side of the bar D, all substantially as described.

No. 42,477. Device for Utilizing the Water Power of Falls. (*Appareil pour utiliser les pouvoirs d'eau des chutes.*)

Christian Jacob Zeitinger, Della, Maryland, U.S.A., 6th April, 1893 ; 6 years.

Claim.—1st. The combination of the coffer dam arranged above the falls and having a port in its side, a turbine whose casing is connected with said port, and a race leading from the said turbine through the bed of the river to a point below the falls, substantially as set forth. 2nd. In a device for utilizing waste water power, the combination of the coffer dam sunk to the bed rock above the falls of the river, the vertical shaft sunk through said bed rock from within said coffer dam, the drift shaft connected to the vertical shaft and opening out at the foot of the falls, the tubular suction cylinder that passes through said vertical shaft and drift, and the pendant

tube that descends therefrom into the water and thus constitutes a water seal to secure suction through the tail race, substantially as and for the purpose set forth. 3rd. In a device for utilizing waste water power, the combination of the coffer dam sunk to the bed rock above the falls of a river, the shaft sunk through said bed rock from within said coffer dam to a point below the falls, the tail race passing through said shaft, the pendent tube dipping into the water below the falls, the open grated ports in the side of the coffer dam, the turbine chambers into which said ports open, the turbine wheels in said chambers, and the quarter turn pipes leading from the turbine chambers and emptying into the tail race to effect a suction draw on the turbines, substantially as and for the purpose set forth. 4th. In a device for utilizing waste water power, the combination of the coffer dam sunk to the bed rock above the falls, the vertical and drift shafts through said bed rock drifting out at the foot of the falls, the tubular cylinder within said shaft having its lower end submerged and forming a suction tail race, the open posts through the coffer dam, the turbine chambers into which said ports open, the quarter turn pipes through which the water passes from the turbine chambers to the suction cylinder, the turbine wheels in said turbine chambers, the flumes, the flood gates that work in said flumes, the rotary shaft that carry said turbines, the drive shafts, the bevel pinion gear that carries the power from the turbine shafts to said drive shafts, and the endless bands, drive pulleys and friction gear that communicate the engendered power to the dynamos for generating electricity or otherwise utilizing said power, as also said dynamos substantially as and for the purpose set forth.

No. 42,478. Weather Guard Attachments to Lantern.

(*Attache de garde de lanterne.*)

John P. Warner and Anthoney F. Navarre, both of Washington, Columbia. U.S.A., 6th April, 1893; 6 years.

Claim.—1st. The combination of a lantern with a weather guard attachment, consisting of a hood, to which four sides, forming a rectangular receptacle, are hinged, the lower one of which produces the rest for the hand, and the upper one provided with transparent material, to observe writing to be done, all arranged as specified. 2nd. The combination of a lantern A having a hood B, secured to it, with the weather guard attachment, consisting of the top C provided with the isinglass *c* or equivalent and hinged to said side, and supported on the flange *g*, having a pin *h*, and hinged to said top C, all as shown and set forth. 3rd. The combination of a lantern A, having a hood B, to which the four folding sides, C, D, E and F are hinged, and said side E provided with pins and spring catch *k*, for securing the sides in folded position on the side of the hood, as shown and described. 4th. The combination with railroad lanterns, of a weather guard attachment, consisting of a bottom or hand rest, to which the sides are attached and a hinged top, provided with transparent material, and a holding device for the paper, as specified.

No. 42,479. Furnace Grate. (*Grille de foyer.*)

Milo Carl, Buffalo, New York, U.S.A., and Joseph Ruse, Toronto, Ontario, Canada, 6th April, 1893; 6 years.

Claim.—1st. A grate bar composed of a central rib flanked by two outer ribs, the top of the central rib being higher than the top of the outer ribs, longitudinal spaces being left between the ribs, substantially as and for the purpose specified. 2nd. A grate bar composed of a central rib flanked by two outer ribs, the top of the central rib being higher than the top of the outer ribs, longitudinal spaces being left between the ribs which are strengthened by bridges extending across the spaces, substantially as and for the purpose specified. 3rd. A pivoted grate bar composed of a central rib flanked by two outer ribs, the top of the central rib being higher than the top of the outer ribs, longitudinal spaces being left between the ribs and flanges or ledges formed on the outer edges of the outer ribs, substantially as and for the purpose specified.

No. 42,480. Can Lacquering Machine.

(*Appareil pour lacquer les boîtes métalliques.*)

Robert Deniston Hume, Gold Beach, Oregon, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. An apparatus for lacquering cans, consisting of the inclined lacquer containing trough, supply chute and open link chain, with driving pulleys by which the cans are immersed in a lacquer, and delivered from the upper end of the trough, in combination with a series of brushes beneath which the cans pass, whereby the surplus lacquer is removed therefrom, substantially as herein described. 2nd. An apparatus for lacquering cans consisting of the inclined lacquer containing trough, a supply chute, an endless traveling open link chain passing around supporting and driving pulleys adapted to receive the cans, and move them through the lacquer trough to the discharge end, a receiving belt consisting of endless chains having transverse pins with sharp edge flanges, upon which flanges the cans are received and supported, the drying chamber consisting of the inner and outer annular cylinders, the inner one having open ends through which the chain and cans pass and the outer one being closed and having steam supply and discharge pipes whereby it forms a steam jacket for the inner tube, substantially as herein described. 3rd. An apparatus for lacquering cans consisting of the inclined lacquer containing trough, endless open link carrying chains dipping into said trough, chutes by which the cans are delivered to the lower end of the trough between the links of the chain by which they are carried to the upper and discharge end, a second belt consisting of open link chains having transversely adjustable pins with raised flanges upon which the cans are received, an enclosed annular drying chamber through which the carrying chain passes, a second cylindrical chamber forming a continuation of the drying chamber, an air blast apparatus and pipes leading from said air blast into the second cylindrical chamber whereby the cans are cooled while passing through said chamber, and a series of brushes situated at intervals with relation to the carrying chains whereby the surplus lacquer is removed from the cans as they pass, substantially as herein described. 4th. An apparatus for lacquering cans consisting of an inclined lacquer containing trough, endless open link chains by which the cans are passed through the lacquer and then transmitted through successive drying and cooling chambers, brushes situated at intervals with reference to the transmitting chains, whereby the surplus lacquer is removed from the cans, an air blast apparatus and a pipe delivering air therefrom into the cooling chamber, and gate controlled openings between the drying and cooling chambers, whereby a regulated amount of air is admitted to the cooling chamber independent of that supplied from the blast apparatus, substantially as herein described.

No. 42,481. Manufacture of Mineral Wool.

(*Fabrication de laine minérale.*)

Charles Henry Hubbell, Stanhope, New Jersey, U.S.A., 6th April, 1893; 6 years.

Claim.—The improvement in the manufacture of mineral wool, consisting in the use of granite, in combination with lime or lime bearing material, in about the proportions stated, fusing the same in a suitable cupola, and subjecting the molten mass to the action of the steam or air, substantially as described.

No. 42,482. Adjustable Shelf Support.

(*Support de tablettes.*)

Sarah Anne Morden, assignee of Walter Henry Morden, Toronto, Ontario, Canada, 6th April, 1893; 6 years.

Claim.—An adjustable shelf support, consisting of a post provided with a series of equidistant and linable holes, and a bracket having on its vertical shank a pin or pins adapted to engage any one or more of said holes, and having its inner upper corner bevelled off and provided with a strap passing around said post, substantially as set forth.

No. 42,483. Combined Hammer and Nail Feeding Device. (*Marteau et appareil d'alimentation du clou combinés.*)

Thomas Gorman, assignee of William H. Smith, both of Appleton, Wisconsin, U.S.A., 6th April, 1893; 6 years.

Claim.—1st, In a combined hammer and nail feeding device, the combination, with a handle provided with a chamber or recess, of a hammer head, said hammer head and handle formed at their junction, upon one side, with a substantially T shaped slot in horizontal section to which the nails in the receptacle are fed, said slot communicating upon one side with a depression or recess, substantially as set forth. 2nd. In a combined hammer and nail feeding device, the combination, with a handle provided with a chamber or recess, of a hammer head, said hammer head and handle formed at their junction, upon one side, with a substantially T shaped slot in horizontal section to which the nails in the receptacle are fed, said slot communicating upon its inner side with a depression or recess and upon its outer side, extending to an offset or shoulder, substantially as set forth. 3rd. In a combined hammer and nail feeding device, the combination with a handle, comprising side pieces having a butting inwardly extending flanges at their lower ends, forming a longitudinal recess the length of said handle, side plates secured to the handle, a plate covering the upper end of the longitudinal recess, and a hammer head, said hammer head and handle formed at their conjunction with a nail slot, to which the nail in the receptacle are fed, substantially as set forth. 4th. In a combined hammer and nail feeding device, the combination of a handle provided with a longitudinal recess, a plate covering said recess for a portion of its length, a hopper secured to the handle registering with the open portion of the recess, and a hammer head, said hammer head and handle formed at their conjunction with a nail slot, to which the nails in the recess are fed, substantially as set forth.

No. 42,484. Cutter Bar for Mowers.

(*Porte-lames pour faucheuses.*)

Adolph Doctor, assignee of Isaac Franklin Bassford, both of Milwaukee, Wisconsin, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. The herein described cutter for mowing machines, comprising a finger bar provided with a series of fingers or guards, each provided at its rear end with a transverse groove in its upper side, anti-friction rollers journalled in said grooves and a knife bar arranged to reciprocate within said grooves, and to rest upon said anti-friction rollers, substantially as set forth. 2nd. The herein described cutter for mowing machines, comprising a finger bar provided with a series of fingers or guards each provided at its rear end

with a transverse groove in its upper side, anti-friction rollers journalled in said grooves, a knife bar arranged to reciprocate within said grooves, and to rest upon said anti-friction rollers, and suitable guard lugs or fingers upon the upper side of the finger bar, arranged to engage with the upper side of the knife bar to hold it in engagement with said rollers, substantially as set forth. 3rd. The herein described knife bar for mowing machines, comprising a bar having a longitudinal groove in its upper side, and a series of triangular knife sections, each provided upon its rear under side with a transverse rib adapted for engagement with the groove in said bar, and screws passed through each of the knife sections into said bar, for detachably securing said sections to said bar, substantially as set forth.

No. 42,485. Nut Lock. (*Arrête-écrou.*)

Edward Elijah Poole, John David Dunn, Edward Thomas Collins, and Algernon Sidney Holderness, Fordyce, Arkansas, U.S.A., 6th April, 1893; 6 years.

Claim.—In a nut lock, the combination of a plate or washer A, provided with means for preventing the same from turning, and angular incisions on opposite sides corresponding in position and angle with the side of the nut or head which is to bear on the same, substantially as set forth.

No. 42,486. Track Flanging and Cleaning Machine. (*Appareil pour abattre et dégager les voies de chemin de fer.*)

The Nevens Flanger Company, Portland, assignee of George Nevens, Brunswick, all of Maine, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. In a flanging and clearing machine for railroad tracks, the combination with a mold board extending diagonally across the track, foot pieces attached to said mold board, hangers for suspending said mold boards to the car, means for raising and lowering said mold board, of springs having one end attached to the car and the other adapted to bear against said hangers, substantially as and for the purposes set forth. 2nd. In a flanging and clearing machine for railroad tracks, the combination with a mold board extending diagonally across the track, hangers for suspending said mold board to the car, means for raising and lowering said mold board, and a cutter attached to the lower edge of said mold board having a portion projecting downward on the inside of each rail, of a shoe having the form of an angle iron extending transversely to said mold board adapted to rest upon the top of the track and extend down on the inside, substantially as and for the purposes set forth. 3rd. In a flanging and clearing machine for railroad tracks, the combination with a mold board extending diagonally across the track, the rear end of said mold board being wider than the forward end, and its upper end being curved or turned forward in the direction of travel, said mold board being constructed in two overlapping and telescopic sections, of a shoe having the form of an angle iron extending transversely to the mold board adapted to rest on the top of the track and against the inside thereof, means for suspending said mold board to the car and for raising and lowering said mold board, substantially as and for the purposes set forth. 4th. In a flanging and clearing machine for railroad tracks, the combination with a mold board extending diagonally across the track, pivoted hangers to suspend said mold board to the car, springs having one end attached to the car frame and the other adapted to rest against said hangers, a cutter attached to the mold board having a portion projecting downward on the inside of each rail, of an angle iron attached to the mold board adapted to rest on the top of and against the side of the rail, and means for raising and lowering said mold board, substantially as and for the purposes set forth.

No. 42,487. Boot Treeing and Crimping Machine. (*Machine pour emboucher et ourler les chaussures.*)

Hugo Kranz and Henry Aletter, both of Berlin, Ontario, Canada, assignees of Charles L. Heisler, Philadelphia, Pennsylvania, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. A stretcher comprising the leg sections, the rear section being composed of two parts overlapping each other, and connections between the sections whereby as the leg is expanded the parts of the rear sections will slide on each other, substantially as described. 2nd. A stretcher comprising the front section, the rear sections in two parts sliding on each other, links connecting both the rear sections to the front sections and a locking device for locking the parts of the rear section together when expanded, substantially as described. 3rd. A stretcher, comprising the front leg section, the rear leg sections, made in two parts sliding on each other, links connecting the inner part of the rear section to the front section, a link connecting the upper part of the inner section to the front section, the inner part being slotted for the passage of the latter link, substantially as described. 4th. In a stretcher, the combination with the front section, of the rear section made in two parts arranged to slide on each other, one of the parts being slotted, a stud for holding the two parts in connection and a connection between the front and rear sections, substantially as described. 5th. In a stretcher, the combination with the front section, of the two part rear section, one of the parts being provided with a slot and the other with a stud, and connections between the front and rear sections, whereby the parts of the rear section may slide with relation to each other and be locked together, and the front and rear sections can be expanded and retracted with relation to each other, substantially as described. 6th. The combination, with a stretcher, of a perforated pipe extending through the stretcher, having a socket piece connected to the pipe and a socket conforming to the shape of a portion of the last and adapted to support the same and having a steam pipe arranged therein adapted to fit the socket piece in the last substantially as described. 7th. The combination, with a socket, of a collapsible stretcher, having means for locking the parts in their expanded position, of a lever and hook carried by the lever and adapted to engage with the stretcher and unlock the parts thereof, substantially as described. 8th. The combination, with the socket of a last, comprising a front and rear section, one of the sections being made in two parts, sliding with relation to each other, a locking device uniting the two parts, connections between the front and rear sections and a hook carried by a lever and arranged to engage the locked parts to release them and collapse the stretcher, substantially as described. 9th. The combination with the crimping machine having a hooked sector and lever for operating the same, of a collapsible last consisting of the front and rear sections and links connecting the same, whereby the sections of the last may be expanded by the hook, substantially as described. 10th. The combination in a crimping machine of a collapsible last supporting the mitten, a clamp or clamps engaging the mitten and means for actuating said clamps, substantially as described. 11th. The combination in a crimping machine with a collapsible last for supporting the mitten, of means for expanding the last and clamps for engaging the mitten on the last, substantially as described. 12th. The combination in a crimping machine, with a collapsible last, of means for expanding the last, clamps bearing on the mitten outside the last, and mechanism for moving the clamps to stretch the mitten, substantially as described. 13th. In a crimping machine, the combination, with a collapsible last, of a hooked sector for expanding the last, clamps bearing on the mitten outside the last and mechanism for causing the clamp to stretch the mitten as the last is expanded, substantially as described. 14th. In a crimping machine, the combination with a collapsible last, of a spring supported clamp bearing on the last and an operating arm connected by links to the clamp, substantially as described. 15th. In a crimping machine, the combination with a collapsible last, of a spring actuated clamp supporting the last and a link connecting the clamp to the frame of the machine, substantially as described. 16th. In a crimping machine, the combination, with a collapsible last, of means for expanding the last, spring actuated clamps bearing on the last, an operating arm connected to move the clamps to draw the mitten on the last and means for securing the operating device, whereby the clamps will produce a further drawing action as the last is expanded, substantially as described. 17th. In a crimping machine, the combination, with a collapsible last, of a hooked sector engaging the last, the hook of the aforesaid sector being located near the axis of the sector and engaging one sector of the last, while another section of the last bears against the sector, substantially as described.

No. 42,488. Electrically Heating Crucible and Holder therefor. (*Chauffage électrique des creusets et support.*)

The American Electric Heating Company, Boston, assignee of Willis Mitchell, Malden, all of Massachusetts, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. A crucible consisting of the sections A and B, of electrically conducting material and the U-shaped insulating bar or partition C, substantially as set forth. 2nd. In combination with a crucible consisting of two insulated parts of electrically conducting material, a holder which is provided with a handle adapted to be held by the hand and with two terminal plates in contact with the said parts respectively, these plates being insulated from each other and forming part of an electric circuit, substantially as set forth. 3rd. In combination with a crucible consisting of two insulated parts of conducting material, a holder consisting of two bars in a handle, these bars being adapted to fit against the said parts respectively and connected to wires completing an electric circuit through them and through the said crucible, substantially as set forth.

No. 42,489. Devices for Electrically Heating Crucibles and other Articles. (*Appareil pour chauffer par l'électricité les creusets et autres objets.*)

The American Electrical Heating Company, Boston, assignee of Willis Mitchell, Malden, all of Massachusetts, U.S.A., 6th April, 1893; 6 years.

Claim.—1st. A heating receptacle for crucibles and other articles and substances consisting of the conducting and sections B^1, B^2, of relatively high resistance having electrical circuit connections in combination with the interposed U-shaped insulating strip B^3 and the filling of pulverized conducting material, substantially as set forth. 2nd. A heating receptacle for crucibles and other articles and substances, the said receptacle being composed of two sections of refractory heating material of electrically high resistance and an interposed strip of insulating material and provided with a filling of pulverized graphite or similar substance in combination with electrical circuit connections to the said sections, substantially as

set forth. 3rd. The end sections B^1, B^2, of fire brick and graphite mixed in combination with the interposed insulating material B^3, the conducting plates imbedded in the said sections, and electrical connections for the said plates, the receptacle which is composed of the said sections and interposed insulating material being adapted to contain a crucible or similar article, substantially as set forth. 4th. A heating receptacle provided with a filling of pulverized graphite or similar substances, and consisting of two sections of electrically conducting material and an interposed insulating strip in combination with an enclosed crucible attached to and removable with the said strip and the electrical circuit connections to the said sections, substantially as set forth. 5th. A hollow heating receptacle or electrical forge consisting of two conducting sections of high electrical resistance and interposed insulating material, in combination with broad plates imbedded in the said sections and presenting a considerable surface for the electrical discharge, and the necessary circuit connections for these conducting plates, substantially as set forth.

No. 42,490. Metal Wheel. (*Roue métallique.*)

Abram Harton Benton Neff and Edmund Henry Norman Neff, both of Peterborough, Ontario, Canada, 7th April, 1893; 6 years.

Claim.—A metal wheel having light metal spokes, each spoke being rigidly fastened at one end to the felloe, its other end extending through a spiral spring secured at one end to the hub of the wheel, and having its other end formed to act as a butt for a collar fixed to the spoke, substantially as and for the purpose specified. 2nd. A metal wheel having light metal spokes, each spoke being rigidly fastened at one end to the felloe, its other end extending through a spiral spring secured at one end to the hub of the wheel and having its other end formed to act as a butt for a collar fixed to the spoke which extends through the spring and hub and has a head formed on its end, substantially as and for the purpose specified. 3rd. A metal wheel having light metal spokes, each spoke being rigidly fastened at one end to the felloe, its other end having a spiral spring formed on it and being fitted within the hub of the wheel, substantially as and for the purpose specified. 4th. A wheel having a series of metal spokes A, each spoke being screwed into a sleeve C, fixed to the felloe B, the other end of the spoke A, extending through a spiral spring D, and having a projection F, fixed to the spoke, in combination with a collar H, fixed to the spoke A, and designed to butt against the plug G, fixed to the spring D, substantially as and for the purpose specified.

No. 42,491. Sprinkling System. (*Système d'arrosage.*)

William Neracher, Cleveland, Ohio, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. In combination, in a dry pipe system, the main supply valve, with mechanism acted upon by the air pressure for controlling said supply valve, a cut off valve in the dry pipe for cutting off a section of said pipe adjacent to the main supply valve, from the system and the sprinklers, and the means for allowing the air to escape from the section thus cut off, substantially as described. 2nd. In a dry pipe system of water sprinklers, the water supply valve and mechanism for holding it, a valve as L, located in the dry pipe, a branch conduit connecting the dry pipe above with the dry pipe below the said valve L, connections between the branch conduit, and the mechanism for operating the water supply valve and a valve for reducing the air pressure in the dry pipe below the valve L, with operating connections, all substantially as described. 3rd. In combination, with the water supply valve, located in the pipe A, having mechanism whereby it is held to the seat by the pressure of the water, a valve L, located in the dry pipe, a branch or conduit K, connected with the dry pipe above and below said valve connection, a conduit between the branch pipe or pipe A, and the connection, which controls the water supply valve, and a valve L^1, held to its seat by the pressure and mechanism arranged to be controlled by the operator for releasing said valve, substantially as described. 4th. In combination in a dry pipe system adapted to hold compressed air, the main supply pipe, the water supply valve therein, the sprinklers operating automatically under the action of the heat for releasing the air, the check valve L mechanism for controlling the supply valve, said mechanism being under pressure of the air in the system, a valve for controlling the air pressure on said mechanism independently of the sprinklers and the hand operating connections to said valve, substantially as described. 5th. In combination, the water supply pipe, the valve casing interposed in said pipe, a valve therein, a piston casing on the valve casing, the piston therein connected with the valve, the supplemental valve box above the piston cylinder, the diaphragm casing above the valve box, the vertically operating valve, the vertically operating diaphragm on the valve stem, the inclined pipe E extending from the lower part of the main casing to the supplemental valve box, and the air pipe from the diaphragm casing to the dry pipe system, substantially as described. 6th. In combination, the sprinkler frame and the disc having the holes, the exterior row of overhanging studs, and the inner alternately placed row of studs. 7th. In combination, the sprinkler frame, the valve disc, the levers for holding the same and the two part link, one part being formed with holes and having solder therein.

No. 42,492. Packing Box. (*Caisse d'emballage.*)

Clarence Rudolph Mengel, Louisville, Kentucky, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. In a box, the combination with the side A, grooved on its inner face as at *a*, of the top fitting within the sides, of the box and the cleat or lining seated in the groove and bearing upon the top, all substantially as shown and described. 2nd. In a box, the combination with the side grooved on its inner face, of the top fitting within the sides and cut away along the edges as at *e*, to form a shoulder *f*, and the cleats C, seated in the grooved side, and resting upon the top at its edges. 3rd. In a box, the combination with the grooved side, of the top, the cleat seated in the groove and bearing upon the top, and the hole or opening for the insertion of a cleat removing tool. 4th. In a box the combination with the sides and the top, of the retaining cleats, and an eye or staple *i*, secured to the top. 5th. In a box, the combination with the grooved side, of a cover or top, and a sectional cleat seated in the groove and bearing upon the top. 6th. In a packing box, the combination with the sides, of a top or cover fitting within the sides and a cleat frame also fitting within the sides and engaging one of the latter, said frame having outer dimensions exceeding those of the top or head.

No. 42,493. Automatic Railway Pumping Mechanism. (*Mécanisme automatique pour pompes de chemin de fer.*)

Hiram D. Lyman, Little Rock, Arkansas, U. S. A., 7th April, 1893; 6 years.

Claim.—1st. The combination with the track, the well at one side of the same, and the tank located at one side of the well, of the series of pump cylinders, the intermediate water box with which they communicate, the discharge pipe leading from the water box to the tank, the transverse shaft supported within and partly without the well, the gear wheel mounted loosely thereon and provided with a pawl, a ratchet wheel fixed upon the shaft at one side of the gear, the rewinding drum mounted on the shaft, the cable thereon, and provided at its lower end with a rewinding weight, the power drum fixed upon the shaft, the cable wound thereon and extending therefrom, guide devices for the cable, and an engaging device at the free end of the same lying at the side of the track, the pair of opposite short transverse shafts arranged at the sides of the main shaft, and terminating at their ends in cranks, piston rods connected to the crank, and descending into the pump cylinders, and gears mounted on the shafts and engaging the gear of the main shaft, substantially as specified. 2nd. The combination with the track, the tank, the pump mechanism, the drum, the cable extending from the drum and terminating at one side of the track, of an engaging device located at the end of the cable and adapted to engage a bar extending from the moving train, and the curved throw-off rod or automatic detacher 40^1, located in the path of the engaging device and at one side of the track, substantially as specified. 3rd. The combination with the pump operating mechanism, comprising a cable, combined with the herein described bar engaging device, consisting of an eye to which the cable is attached, and the series of three prongs bent to form loops and diverging from the eye, substantially as specified. 4th. The combination with the track, the pump operating mechanism, the cable for operating the same and the connecting three pronged catch 19 secured to the cable at one side of the track, of a tender, its sand bolster, the pair of bolts extending through the same, the offset, strap or keeper perforated to receive the bolts, the engaging bar mounted for reciprocation in said keeper, and the hand lever pivotally connected to the inner end of the bar and extending within reach of the engineer, substantially as specified.

No. 42,494. Milk Aerator and Cooler.

(*Garde-lait aérateur.*)

Edward Bartlett, Belleville, Ontario, Canada, 7th April, 1893; 6 years.

Claim.—1st. In a device of the character described, the combination of a reservoir, a strainer, an aerator, and cooler, substantially as shown and described. 2nd. In a device of the character described, the combination of a reservoir R, a strainer S, a rim or flange N, attached to the lower extremity of the reservoir R, a cylindrical body H, a corrugated adjustable flange K, a projecting rib 41, with apertures or orifices 12, opening upward, substantially as described. 3rd. The combination of the corrugated top of cooler 21, a body part H, and orifices open upward, a corrugated adjustable flange K, substantially as set forth. 4th. The combination of a top E, of a cooler 21, provided at its centre with an aperture and cover 8, a side x^2, and legs L, a bottom W, a flange 22, substantially as shown and described. 5th. In a device of the character described, the combination of a reservoir R, a strainer S, a rim or flange N, attached to the reservoir R, a body H, a flange K, either a ljustable or rigid, orifices 12, a rib 41, a top E, of a cooler 21, an aperture and cover for the same 8, a side x^2, a bottom W, a rim 22, and legs L, a can A, substantially as and for the purpose specified.

No. 42,495. Press. (*Presse.*)

Alexander Doig, Toronto, Ontario, Canada, 7th April, 1893; 6 years.

Claim.—1st. In a machine of the class described, the combination with a compression block having a cylindrical hole, and a resistance block or blocks located therein, of a plunger designed to co-act with the resistance block, and means whereby the plunger derives a vertical reciprocating motion, as and for the purpose specified. 2nd. In a machine of the class described, the combination with a compression block having a plurality of shoulders designed to rest against corresponding shoulders in the supporting block, a cylindrical hole, and a resistance block or blocks located therein, and a plunger designed to co-act with the resistance block, and means whereby the plunger derives a vertical reciprocating motion, as and for the purpose specified. 3rd. In a machine of the class described, the combination with the compression block having a cylindrical hole, and a resistance block or blocks located therein, of a vertical plunger and eccentric for operating on the top of the plunger in order to give it a vertical motion, as and for the purpose specified. 4th. The combination with the compression blocks C, provided with a cylindrical hole D, having resistance blocks inserted in the same and supported as specified, of the plungers, X, secured in the lower end of the vertical rods V, and the blocks U, secured on the upper ends of the vertical rods V, having a concave recess *u*, the concave blocks T, having the convex ribs *t*, which fit within and rock in the recess *u*, and the eccentrics S, caused to rotate and coact with the concave block T, as and for the purpose specified. 5th. The combination with the compression blocks C, provided with a cylindrical hole D, having resistance blocks inserted in the same and supported as specified, of the plungers X, secured in the lower end of the vertical rods V, and the blocks U, secured to the upper ends of the vertical rods V, which are driven downward by the eccentrics S, set in relation to each other as shown, and the gear pinion W, meshing with the racks *r*, on the vertical rods V, as and for the purpose specified. 6th. The combination with the compression blocks C, provided with a cylindrical hole, D, having a resistance block or blocks inserted in the same and supported as specified, of the plunger X, vertical rods V, gear pinion W, meshing with the racks *r*, on the vertical rods, and the eccentrics S, chain of gearing R, Q, M, O, and fly wheel 2, arranged as and for the purpose specified. 7th. In a machine of the class described, the combination with the compression block having a cylindrical hole, air ducts leading from such hole, and a resistance block or blocks located therein, of a plunger designed to co-act with the resistance block, and means whereby the plunger derives a vertical reciprocating motion, as and for the purpose specified.

No. 42,496. Cast Iron Sectional Boiler.

(*Chaudière à carneaux en fonte.*)

Henry A. Smith, Detroit, Michigan, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. A sectional boiler consisting of sections H, having the parts K and P connected together by the pipes M, N, the box L, and the pipes M^1, N^1, substantially as shown and described. 2nd. A sectional boiler consisting of opposing rows of sections H, each section having an intermediate water box L, a damper between the opposing boxes L, end sections covering the vertical space between the two rows of sections H, a manifold at the base of each row of sections, and a drum connected with the top of all the sections, substantially as shown and described.

No. 42,497. Door Closer. (*Appareil à fermer les portes.*)

Milo Jackson Althouse, Vaupun, Wisconsin, U.S.A., George Tait Blackstock and John Charles McKeggie, both of Toronto, Ontario, and James Herbert McKeggie, Barrie, Ontario, assignees of Harman Bunker, Barrie, Ontario, Canada, 7th April, 1893; 6 years.

Claim.—1st. The combination, with a door and its jamb, of a single piece of wire having angularly bent ends, secured respectively to the door and its jamb by means of staples, substantially as set forth. 2nd. The combination of a door and its jamb, a single piece of wire having angularly bent ends and pointed extension, engaging the wood work and staples securing the wires at their angles, substantially as set forth. 3rd. As an improved article of manufacture, a door closer, consisting of a single piece of wire bent into approximate V-form having a series of coils at the bend and its ends bent angularly, substantially as set forth.

No. 42,498. Disc Harrow. (*Herse à disque.*)

William Pitt Millar, Morrisburg, Ontario, Canada, 7th April, 1893; 6 years.

Claim.—The combination in a disc harrow. with the arms carrying the discs, of a horizontal rigid bar secured to the seat casting, carrying adjustable levers pivoted at its outer ends, the said levers carrying a frame having a segmental lower edge eccentric to the pivot of the lever, substantially as and for the purpose set forth.

No. 42,499. Milking Machine.

(*Appareil pour traire les vaches.*)

James Calvin McCollum and William Warren Murphy, both of Los Angelos, California, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. In a milking machine the combination of two series of teat compressing rollers and suitable mechanism arranged to operate such rollers to bring pairs of rollers into juxtaposition successively and move them downward for a distance in substantially parallel planes whereby the cow's teat may be successively engaged by such pairs of juxtaposite rollers to force the milk down and out of the nipple. 2nd. In a milking machine the combination of a series of endless belts provided respectively with a series of teat compressing rollers and arranged oppositely upon suitable belts carrying and driving rollers arranged to rotate the belts; such carrying and driving rollers and means for rotating such rollers. 3rd. In a milking machine the combination set forth of two endless belts arranged with a space between them and provided with teat compressing rollers, and means for rotating the belts. 4th. The combination of the series of belt carrying and driving rollers, the train of cogs connecting the driving rollers; the endless belts mounted upon such rollers and arranged in pairs and provided respectively with the seriei of teat compressing rollers, and means for rotating the driving rollers. 5th. In a milking machine the combination of two series of teat compressing rollers arranged to operate in pairs as set forth and a collapsable tube arranged in the space between such series of rollers. 6th. The combination of the endless belts arranged in pairs and provided with the teat compressing rollers; the belt driving rollers, the adjustable belt carrying rollers, and springs arranged to press the belt carrying rollers toward each other to close the space between the belts. 7th. The combination of the endless belts arranged in pairs and provided with the teat compressing rollers, the carriers pivoted at their lower end, the belt driving rollers, the belt carrying rollers journalled in the movable carriers, and springs arranged to press the carriers toward each other. 8th. In a milking machine of the class described, the combination of the belt carrying rollers, the slotted slides S, S^1, the toggle joint T pivoted to the slides, the frame of the machine provided with the vertical slot, and the pin of the toggle joint arranged to slide in such slot. 9th. In a milking machine of the class described, the combination of the slotted frame, the movable slotted slide provided with the sockets, the belt carrying rollers journalled therein, the collapsable tube and the tube supporting brackets inserted in such sockets.

No. 42,500. Rock Drilling Machine. (*Foret de mine.*)

Theodore Weld Sterling, New York, State of New York, assignee of Eugene Moreau, Philadelphia, Pennsylvania, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. In a rock drilling machine, comprising a striking device composed of two hammers reciprocating in the direction of impact and also in a line crossing that of the impact, mechanism for imparting the desired movements to the striking mechanism, a drill tool, and a rock shaft connected to the drill tool, or to a part holding a drill tool, and receiving motion from the operating mechanism of the striking device, substantially as described. 2nd. In a rock drilling machine, comprising a striking device composed of two hammers reciprocating in the direction of impact and also in a line crossing that of impact, mechanism for imparting the desired movements to the striking mechanism, a drill tool, and a rock shaft connected to the drill tool or to a part holding a drill tool by a ratchet feed, and receiving motion from the operating mechanism of the striking device, substantially as described. 3rd. In a rock drilling machine, comprising a striking device, composed of two hammers reciprocating in the direction of impact and also in line crossing that of impact, mechanism for imparting the desired movements to the striking device, a standard upon which the machine is mounted, a connection between the standard and the operating mechanism of the striking device, and a screw receiving motion from the operating mechanism, and imparting a longitudinal movement to the connection, substantially as described. 4th. In a rock drilling machine, comprising a striking device composed of two hammers reciprocating in the direction of impact and also in a line crossing that of impact mechanism for imparting the desired movements to the striking device, a standard upon which the machine is mounted, a longitudinally movable connection between the standard and the operating mechanism, and a clutch attaching the connection to the operating mechanism, substantially as described. 5th. In a rock drilling machine comprising a striking device composed of two hammers reciprocating in the direction of impact and also in a line crossing that of impact, mechanism for imparting the desired movements to the striking device, a standard upon which the machine is mounted, a longitudinally movable connection between the standard and the operating mechanism, a drill tool holder having a limited longitudinal movement, and a connection between the tool holder and the clutch, substantially as described.

No. 42,501. Striking Device. (*Marteau.*)

Theodore Weld Sterling, New York, State of New York, assignee of Eugene Moreau, Philadelphia, U. S. A., 7th April, 1893; 6 years.

Claim.—1st. In a striking device, in combination, a pair of independently reciprocating hammers and mechanism for reciprocating simul-

taneously both hammers in a line crossing that of impact, substantially as described. 2nd. A striking device, consisting of two hammers, in combination with mechanism operating to reciprocate each in the required direction, of impact, and with mechanism operating to reciprocate them to and from the line of direction of impact, alternately, substantially as and for the purpose described. 3rd. A striking device, consisting of two hammers in combination with actuating springs and mechanism for drawing back the hammers to compress the springs and to reciprocate each hammer in the required direction of impact, and mechanism operating to reciprocate them to and from the line of direction of impact alternately, substantially as described. 4th. A striking device, consisting of two hammers and a reciprocatingly movable frame in which the hammers are mounted, in combination with mechanism operating to reciprocate each hammer in the required direction of impact and with mechanism operating to reciprocate the frame in a direction crossing the line of direction of impact, substantially as set forth. 5th. A striking device, consisting of two hammers, in combination with actuating springs and mechanism for drawing back the hammers and for compressing the springs to reciprocate each hammer in the required direction of impact, hammer locking and releasing devices, and mechanism operating to reciprocate the hammers to and from the line of direction of impact alternately, substantially as described.

No. 42,502. Horse Gear. (*Manège.*)

Robert Ashton Lister, Dursley, Gloucester, England, 7th April, 1893; 6 years.

Claim.—In a horse gear, the combination of three sets of gearing, comprising an internally toothed ring engaging with a series of pinions, a second set of gearing comprising a series of gear wheels connected to or formed integral with the pinions of the first mentioned set of gearing, and all engaging with a common pinion connected with a set of bevel gearing, through the medium of which the motion of the second set of gearing is communicated to the lay shaft, substantially as described.

No. 42,503. Case for Books, etc. (*Bibliothèque, etc.*)

Charles E. Foster, Washington, Columbia, and James W. Hine, Jamestown, New York, all in the U.S.A., 7th April, 1893; 6 years.

Claim.—1st. A book case provided with movable shelves each adapted to independently support two books, one in front of the other and supports for holding the shelves in position to expose both books when drawn forward, substantially as set forth. 2nd. A book case provided with movable shelves, each provided with separate supports for two books, one in front of the other and supports for the shelf when turned down in front of the case, substantially as set forth. 3rd. The combination with the sides of a book case, of guides for horizontally sliding shelves each having independent supports for two books, one in front of the other, and means for supporting said shelves in hanging position in front of the case, substantially as set forth. 4th. The combination with a book case, of a horizontally sliding shelf having a front closing piece 6, constituting a support for one book and a support 7, for another book, substantially as described. 5th. The combination with the sides of a book case, of sliding shelves each in two connected sections, one movable upon the other, and each adapted to support a separate book, substantially as set forth. 6th. A book provided with horizontal sliding shelves each in two sections hinged together to permit the forward section to swing down when withdrawn, and with a support 6, for a book upon the forward section, substantially as set forth. 7th. A book case provided with horizontal sliding shelves each in two sections hinged together, a rear section provided with roller supports for a book, substantially as set forth. 8th. A book case provided with horizontal shelves, each in two hinged sections, the rear sections having anti-frictions rollers, resting upon horizontal guides, substantially as described. 9th. A shelf for a book case in two sections hinged together to afford independent supports for two books, one in front of the other, substantially as set forth. 10th. A shelf for a book case, consisting of two sections hinged together, the rear section provided with roller bearings, substantially as described. 11th. A shelf for books consisting of two sections hinged together at one side to permit the forward section to swing to one side when supported by the rear section, substantially as set forth. 12th. A shelf for books consisting of two sections hinged together the front section consisting of a front plate 6, and two parts y, z, formed by bending the bars to form side pieces 18, front bearings 19, and to receive between their ends the bars of the rear section, substantially as described.

No. 42,504. Perforating Attachment for Printing Presses. (*Appareil à perforer pour presses d'imprimerie.*)

Grant Hiram Slocum, Walter Joseph Gamble and Timothy Charles Quinn, all of Caro, Michigan, U.S.A., 7th April, 1893; 6 years.

Claim.—1st. In a perforating attachment, the combination of the outer case, the longitudinally moving bar located in said case having a series of inclined bearings in its upper edge, the vertically reciprocating bar or case carrying the perforating teeth located in said outer case above the longitudinally moving bar, and having a series of inclined bearings in its under edge, the actuating lever pivoted in the end of the outer case, the inner end thereof engaging the end of the longitudinally moving bar, substantially as set forth. 2nd. In a perforating attachment, the combination of the outer case, the longitudinally moving bar located in said case, said bar having a series of inclined bearings in its upper edge, the vertically reciprocating bar or inner case carrying the perforating teeth, and having a series of inclined bearings in its under edge, the spring secured at one end in the edge of the longitudinally moving bar, the opposite end of said spring lying in a recess in the under edge of the inner case, the actuating lever pivoted in the end of the outer case, its inner end engaging the end of the longitudinally moving bar, the spring secured in the end of the outer case, and bearing against the end of said lever, substantially as specified. 3rd. In a perforating attachment, the combination of the outer case, the longitudinally moving bar located therein, said bar having a socket in one end, the inner case carrying the perforating teeth located in the outer case above the longitudinally moving bar, and adapted to be actuated thereby, the lever pivoted in the end of the outer case, said lever having a ball on its inner end adapted to lie in the socket in the end of the longitudinally moving bar, as set forth. 4th. In a perforating device, the combination of the outer case, the inner case slidingly located therein, the perforating blade detachably secured to the inner case, substantially as specified. 5th. In a perforating device, the combination of the outer case, having an opening through the side thereof, the inner case carrying a perforating blade, a screw passing through said case for detachably securing the blade thereto, the inner case located in the outer case so that said screw in the inner case will register with the opening in the side of the outer case, substantially as specified.

No. 42,505. Portable and Variable Shafting.
(*Arbre de couche portatif et variable.*)

William Ross, Montreal, Quebec, Canada, 7th April, 1893; 6 years.

Claim.—1st. The combination with a main driving shaft invariable as to position; of a portable shafting pivotally connected with said main driving shaft and variable in position relatively to said main driving shaft as set forth. 2nd. The combination with a main driving shaft invariable as to position, of a portable shafting having a sliding connection with said main driving shaft and variable in position relatively to same, as set forth. 3rd. The combination with a main horizontal driving shaft invariable as to position, of a portable shafting suspended from said driving shaft and variable in position relatively to same, as set forth. 4th. The combination with a main driving shaft, of one or more bevel gear wheels mounted therern, a spindle arranged at right angles to said main driving shaft, a bevel gear wheel on one end of said spindle adapted to intermesh with the gear wheels on said shaft, a rotatable guide with universal joint connection between one of the same and said spindle, and a tool carrying extension from the opposite end of said guide and adapted to be rotated by same, as set forth. 5th. In a portable safting, the combination with a rotatable guide and means for rotating same, of a tool carrying extension moveable in and out of said guide and being for the greater part of its length of an angular cross section, corresponding to that of an aperture in the end of said guide through which it works and whereby it is rotated and of a circular cross sectior towards its outermost end for the purpose set forth. 6th. In a portable shafting, the combination with a rotatable guide and means for rotating same, of a tubular counter balance weight suspending cord and pulley within said guide and a tool carrying extension moveable in and out of said guide and connected by a swivelling attachment with one end of said suspending cord, as set forth. 7th. The combination with a main horizontal driving shaft invariable as to position, of a portable shafting comprising a hanger having a pivotal and sliding connection with said main shaft, one or more bevel gears mounted upon and adapted to slide on and be rotated by said shaft, a vertical spindle carried by said hanger and having a bevel gear on its upper end adapted to mesh with said bevel gear or gears on said main shaft, a rotary guide, a ball link and fork joint connection between said guide and spindle, a tubular counterbalance weight suspended within said rotatory guide, a rod extension attached to one end of the suspending cord for said weight and a tool holder at the end of said rod extension with ball link and fork joint connection between it and said extension, the said rod extension being square in cross section and adapted to project through a square aperture in the lower end of said rotatory guide as, set forth.

No. 42,506. Electrical Propulsion of Railway Vehicles, etc. (*Propulsion électrique des trains de chemin de fer.*)

Jean Jacques Heilmann, de Belfort, Département du Haut-Rhin, France, 7th April, 1893; 6 years.

Réclamation.—1st. Une locomotive électrique formée d'un véhicule monté sur deux bogies, dont toutes les roues sont actionnées par des moteurs électriques, et portant une chaudière, une machine à vapeur et une dynamo génératrice, le courant produit par cette dernière alimentant les moteurs qui actionnent les roues. 2ème. Une locomotive électrique formée d'un véhicule monté sur deux bogies, une machine à vapeur et dynamo génératrice, montées au devant du dit véhicule, une chaudière portée en arrière et le foyer de la dite chaudière disposée centralement du véhicule et en avant de la chaudière tel que montré et pour les fins indiquées. 3ème. Dans une locomo-

tive électrique la combinaison avec la génératrice de vapeur une dynamo génératrice et moteurs électriques recevant mouvement, d'une machine à vapeur M tels que decrite ci-dessus. 4ème. Dans une locomotive électrique formée d'un véhicule monté sur deux bogies, dont toutes les roues sont actionnées par des moteurs électriques, et portant une chaudière, et une machine à vapeur des machines à courants alternatifs triphasés, tant pour la génératrice que pour les réceptrices. 5ème. Dans une locomotive electrique la combinaison des roues motrices rotatant sur l'essieu fixé, et serré à leurs [illegible]ux extrémités dans les leviers du butté L L telle que décrite.

No. 42,507. Dental Chair.

(*Fauteuil pour opération dentale.*)

Dewell Stuck, Rochester, New York, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. The combination of the standard, the parallel levers having fulcrums therein, the seat frame, the bar 39 pivoted to each of said levers and extending backwardly and over the point of application of power to said levers and journalled in said frame, and mechanism for moving the levers and connected to the same at one side of said fulcrums and immediately under the connection of bar 39 with the seat frame, consisting of a piston having a rod pivotally connected therewith and with the levers and means for raising the piston, substantially as set forth. 2nd. The combination of the standard, the parallel levers having fulcrums therein, the seat frame, the bar 39 pivoted to each of said levers and extending backwardly and over the point of application of power to said levers and journalled in said frame, and mechanism for moving the levers, consisting of a piston having a rod pivotally connected therewith and with the levers and means for raising the piston, substantially as set forth. 3rd. The combination of the standard, the parallel levers having fulcrums therein, the seat frame, the bar 39, pivoted to each of said levers and journalled in said frame, and mechanism for moving the levers about the fulcrums, consisting of a piston having a rod pivotally connected therewith, and with the levers, means for raising the piston and means adapted to automatically lower the same, substantially as set forth. 4th. In combination, the seat frame, a rack fast on said frame, an elevating bar 39, loosely connected to and supporting the frame, mechanism for raising the bar, consisting of the parallel bars fulcrumed in a chair standard, and the piston and piston rod, said rod being pivotally connected both to the piston and to the levers, and a pawl having a lever extension pivoted to and movable with said elevating bar, whereby the chair seat can be raised and automatically lowered and also tilted and locked in the tilted position at any desired elevation, substantially as set forth. 5th. The standard having an open side and top, and having its upper part enlarged or laterally extended, levers having fulcrums in said extensions and extending through the open side of the standard, the seat supported on said levers, and means for raising and lowering the latter, substantially as set forth. 6th. The rotatable chair standard, provided with a lateral extension near its upper part and a vertical slot on the side opposite extension, a seat elevating piston, a reservoir containing the same, and situated adjacent to standard wall below said extension, a centrally situated clamping lever, and seat elevating levers extending through said slot, substantially as set forth. 7th. The standard having a closed bottom and circumferential walls adapted to enclose seat elevating devices, and provided with a lateral extension and with elevating levers fulcrumed in its extension and slotted in one side for the passage of a standard clamping handle 7, and of the elevating levers, the open topped reservoir situated on said bottom at one side of its centre, the pump and the main piston cylinders situated in the reservoir, and a valve having an operating handle situated above the reservoir, and extending through the enclosing wall of the standard, substantially as set forth. 8th. In combination, the seat frame, the back frame slotted in its bottom and rear and pivotally connected to said seat frame, the brace pivoted to the same frame, and having at its outer end a pivoted screw and clamping nut, said screw being adapted to move in the rear slot of the frame when not clamped, substantially as set forth. 9th. The combination of the head rest, the lever having arms embracing a part of said rest, a second lever crossing the first and having a seat for said part, said levers having a common fulcrum, and overlapping the first named pair, a bolt passing through the overlapping arms of the four levers and engaging the interior ones, and mechanism for forcing together the ends of the said second pair of levers, which are opposite said bolt, to clamp the head rest, substantially as set forth. 10th. In combination, the swinging back frame 56, provided with grooves, the sliding frame 66, fitting said grooves and itself provided with grooves, the bar 69, fitting the latter grooves, the rod situated in a passage in the bar, and a friction pawl pivoted in the bar, and adapted to be operated by the rod to lock the slide bar to the sliding frame, means for relatively moving the bar and rod, means for clamping the main sliding frame to the back frame, and a head rest supported from the bar and rod, substantially as set forth. 11th. The foot roll frame, having a curved groove in each end and a foot rest or platform frame provided with lugs fitting said grooves, the roll frame being provided with one or more rolls and adapted to be slid on the lugs to and from the chair seat to give various elevations of a roll, substantially as set forth. 12th. A supporting roll frame having a curved groove in each end and a foot rest frame, having lugs fitting said grooves provided with one or more rolls, the roll frame adapted to be slid on the lugs to and from the chair seat to give various elevations of a roll, one of said grooves communicating with notches on its under side to receive a lug whereby the roll frame is secured in different positions, substantially as set forth.

No. 42,508. Plow. (*Charrue.*)

John E. Mitchell and Elma M. Mitchell, both of Salem, Iowa, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. A plow mould board, consisting of a series of parallel bars or sections, curved to conform to the shape of a mould board, and presenting a series of disconnected points at their lower ends. 2nd. A plow mould board, consisting of a series of parallel bars or sections, curved to conform to the shape of a concave mould board and relatively arranged, substantially as described, to form a plow point and to present a series of disconnected points at the lower ends of the bars. 3rd. The combination, with a standard and supporting braces, of a mould board, consisting of a series of independent curved bars secured upon said braces, the lower ends or points of said bars being arranged to form an inclined cutting edge, consisting of disconnected points, as set forth.

No. 42,509. Needle Threader and Setter.

(*Enfileur d'aiguille.*)

James Cook, New York, State of New York, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. A needle threader comprising a supporting arm passing around the presser bar, and having the arms E extending therefrom, a screw or rivet for holding the two arms together, a screw for clamping the circular portion to the presser bar, the inner side of the outer end of one of the arms E being cut away, lever pivoted between them, a clamping screw forming the pivot, and a hook on the lower end of the lever, substantially as described. 2nd. A needle threader comprising a supporting arm, a lever pivoted at its upper end thereto, the lower end of the lever carrying a hook, and a guide extending alongside the hook and beyond its outer end, the outer end of the guide being bent away from the hook, substantially as specified. 3rd. A needle threader comprising a supporting arm a lever pivotally connected at its upper end to the said supporting arm, the lower end of the lever carrying a hook, a guide extending alongside of the hook and a suitable distance therefrom, the said guide having a cut away portion between its ends and its outer end extending down substantially in front of the end of the hook, substantially as described. 4th. A needle threader comprising a supporting arm, a lever pivoted at its upper end thereto, the lower end of the needle carrying a hook, and a guide extending alongside the said hook, the guide being bent away from the hook and extending parallel therewith, then towards the hook, and then away from the hook again, substantially as shown. 5th. A needle threader comprising a supporting arm, a lever pivotally supported at its upper end thereby, the lower end of the lever having a groove, and a hook having a portion extending into the said groove, and the end opposite the hook bent at right angles to engage the said lever and form a means for regulating its inward movement and for removing it, substantially as specified. 6th. A combined threader and thread cutter comprising a supporting arm, and a threading lever pivotally supported by the said supporting arm, the supporting arm having a groove extending in a line parallel therewith, and a cutter placed in said groove and extending in the opposite direction from the said arm, substantially as and for the purpose described.

No. 42,510. Tool for Wire Fencing.

(*Outil pour clôture en fil de fer.*)

Daniel D. Stetler, Minneapolis, Kansas, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. The combination of handle B, having recess E at its forward end, vertical shoulder *b* at one side of the recess, and horizontal shoulder *f* at its opposite side with handle A, having depended rounded head H at its forward end, which is pivoted eccentrically in the recess E, and horizontal shoulder *e* to the rear of said head, substantially as shown and described. 2nd. An improved wire fencing tool consisting of a handle B having a curved end *a* cut out to form a clamping shoulder *b*, and a handle A, substantially of the same length as the handle B, and having a jaw pivoted in rear of said shoulder, the said jaw having its forward end formed on the arc of a circle eccentric to the said pivotal point, the handle A being on the same side of the tool as the concave side of the said curved end *a*, and separate from the handle B, for the purpose described whereby, a pull can be exerted on the handle A, independently of the handle B, when clamping and tightening the wire, substantially as specified.

No. 42,511. Corset. (*Corset.*)

Jane Grieve Patterson, Lancaster, Lancashire, England, 8th April, 1893; 6 years.

Claim.—In corset the method of locking together the adjoining busks by means of pins and staples, substantially as herein described, and for the purpose set forth.

No. 42,512. Damper for Stove Pipes.

(*Clé de tuyaux de poêle.*)

Houghton Wardelle Wilson, Kingston, Ontario, Canada, 8th April, 1893; 6 years.

Claim.—In a stove pipe damper, the combination of a stationary ring contracting the passageway of the pipe, provided with two lugs on its lower edge, and having its lower surface bevelled to form a deflecting face, and its upper surface bevelled outwardly and upwardly to prevent the formation of a pocket, a deflector some distance above and smaller than the throat of the ring above recited, a bail secured to said ring transversely to the lugs and holding said deflector on a wide spreading top, an axle curved to form a crank in the centre passing through and having its ends bearing and rotate in the stove pipe, and the lugs of the ring, which latter it supports, and being provided with balanced handle at one end and a deflecting disc somewhat smaller than the throat of the ring secured to the crank of said axle, substantially as set forth.

No. 42,513. Bellows. (*Soufflet.*)

David Howard Baker, Boston, Massachusetts, U.S.A., 8th April, 1893; 6 years.

Claim.—A flexible sleeve E, connecting the vessel A, with the plunger H, of a bellows or pump, substantially as described.

No. 42,514. Cabinet for Cream. (*Buffet pour la crème.*)

Peter Hugh McIntosh, L'Orignal, Quebec, Canada, 8th April, 1893; 6 years.

Claim.—A cream cabinet A, having an air-tight cover B, secured by clamps E, or other fastenings, an internal lining G, offset from the interior of the cabinet, and the intervening space filled with charcoal J, a cream vat or chamber K, offset from the lining G, and an intervening water space N, said chamber or vat K, having one or more tubes P, passing through and connecting the water space on opposite sides, and valves to empty the water and cream, as set forth.

No. 42,515. Creamer. (*Crémeuse.*)

Peter Hugh McIntosh, L'Original, Quebec, Canada, 8th April, 1893; 6 years.

Claim.—A creamer having a cylindrical external wall A, inner wall B, concentric therewith, and a central bottomless tube C, bearing on an inclined bottom D, supported by the wall B, a chamber E, below said bottom, said wall B, provided with an observing glass and valve within a recess in the outer wall A, said creamer having a conical lid or cover N, provided with projections S, and an inserted funnel strainer R, having a flange T, as set forth.

No. 42,516. Egg Carrier. (*Boîte à œufs.*)

William A. Oswald, Belle Rivière, Quebec, Canada, 8th April, 1893; 6 years.

Claim.—1st. In a cabinet for carrying eggs, the combination, with an outer casing, having its front closed by a door, and having shelves dividing the interior into shallow horizontal compartments, of the trays sliding in the said compartments, the said trays having levers or latches pivoted at their rear, the said levers projecting through slots in the sides of the said trays, and sliding in grooves formed in the side of the said compartment, a vertical rise in the said grooves near the front and means for raising the said levers up the said vertical rise, substantially as and for the purpose set forth. 2nd. In a cabinet for carrying eggs, the combination, with the trays sliding in horizontal compartments, and divided for the reception of eggs, of the tablets I and H, substantially as and for the purpose set forth.

No. 42,517. Curling Tongs. (*Fer à friser.*)

Edward Seybold and John Elliott Brown, both of Ottawa, Ontario, Canada, 8th April, 1893; 6 years.

Claim.—1st. In a curling iron, the combination of an insulated handle A cored out to receive the conducting wires, the conductors C, C¹, in circuit with an electric lamp, a tubular metallic stem B having its open end secured in the end of said handle and receiving the conductors, an insulating lining *b* in the forward end of said stem, a rod D secured to one of the conductors having an insulation wrapper *d*, the resistance coil E wound upon the insulation of said rod and having one terminal connected with the forward end of said rod and the other with the other conductor, and a clasp F with lever *f* pivoted to said stem, substantially as set forth. 2nd. In combination with an electric light bracket, another circuit C, C¹, in series therewith, a pair of contact pieces I, I, in the circuit C, C¹, a connecting piece I¹, suspended by a spring *i*, and provided with a hook *i*¹, and a curling iron adapted to be suspended from said hook and bringing the connecting piece in contact with the contact pieces, substantially as set forth. 3rd. The combination with an electric light circuit, of conductors C, C¹, inserted therein, a conducting core D, connected to one conductor, insulation *d* upon said core, a resistance coil E wound upon said insulation and having one terminal connected to the terminal of the core and the other to the conductor C¹, an insulating wrapper *b* upon said coil, a tube B in which said coil is inserted and a handle A in which said tube is secured, substantially as set forth.

No. 42,518. Buckle. (*Boucle.*)

Jacob Ziegler, Arlington, Nebraska, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. In a trace buckle, the combination of a bail carrying a post or stud intermediate of side bars, and an open end, the termination of the side bars at the opposite sides of said end being formed with bearing forks, and a keeper having openings for the removable reception of the said bearing forks, substantially as described. 2nd. In a trace buckle, the combination of a bail having side bars connected at one end and in the middle part thereof and open at the opposite end, the termination of the side bars at said open end being formed with bearing forks and the part connecting the middle of said side bars having an upwardly projecting stud, and a keeper adapted to be secured to the opposite trace section and having recesses arranged to receive the upper arms of the bearing forks and provided with a downwardly projecting flattened flange or lip, substantially as described. 3rd. In a trace buckle, the combination of a two strap sections, one of which has a keeper or loop at one end and a cock eye at the opposite end, a bail carrying a post or stud and having an open end and open forks on opposite sides of said open ends, and a keeper having openings for the removable reception of said bearing forks, substantially as described.

No. 42,519. Sleigh. (*Traîneau.*)

Olaus A. Normann, St. Oloff, Minnesota, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. In a sleigh, the combination, with the runners and knees secured thereto, of a body pivotally supported on the knees, springs connected to the body, one at each side thereof, and link connections between the springs and the runners, substantially as described. 2nd. In a sleigh, the combination, with the runners and knees secured thereto, of a body pivotally supported on the knees, springs connected to the body, one at each side thereof, rods secured to the runners, and links pivoted to the said rods and to the ends of the springs, substantially as described. 3rd. In a sleigh, the combination, with the runners provided with knees, of a body pivotally supported on the knees, springs connected to the body, one at each side thereof, rods secured to the runners, links pivoted to the rods and springs, and springs connecting the upper ends of the runners with the forward part of the body, substantially as herein shown and described. 4th. In a sleigh, the combination, with the runners and knees secured to the runners and provided with diagonal braces, said knees and braces having laterally extending lugs, of a body provided on its under side with a bolster having eyes to receive the said lugs, springs secured to the bolster, cross bars connecting the springs and secured to the body, rods secured to the runners, and links pivoted to the rods and springs, substantially as described. 5th. In a sleigh, the combination, with the runners and knees secured thereto, of a body provided on its under side with a bolster, to which the knees are pivoted, springs secured to the ends of the bolster, cross bars connecting the springs and secured to the body, rods secured to the runners, links pivoted to the rods and springs, and springs hinged to the upper ends of the runners and to the forward part of the body, substantially as herein shown and described.

No. 42,520. Self Winding and Synchronizing Clock.

(*Horloge à remontoir automatique et simultané.*)

Arthur Gottlob Wiseman, St. Louis, Missouri, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. In a self winding clock, the combination of a circuit breaking wheel, a shaft upon which said wheel is loosely mounted, a gear wheel securely mounted on said shaft, a drum secured to said gear wheel, and a main spring secured by one end to said circuit breaking wheel and by the other end to said drum, substantially as set forth. 2nd. In a self winding and synchronizing clock, the combination of a magnet, an armature lever, mechanism operated by said magnet and lever to wind the clock, and mechanism operated by said magnet and lever to synchronize the clock, whereby but one magnet and armature is required to both wind and synchronize, substantially as set forth. 3rd. In a self winding and synchronizing clock, the combination of a magnet, an armature lever, mechanism operated by said magnet and armature lever to wind the clock, mechanism operated by said magnet and armature lever to synchronize the clock, and mechanism for disengaging said lever from the clock mechanism when the clock is to be synchronized, substantially as set forth. 4th. In a self winding and synchronizing clock, the combination of a magnet, an armature lever, a disc or dial adapted to move with the minute hand of the clock, a pin or projection on said disc, mechanism operated by said disc to close the circuit, and mechanism operated by said disc to disconnect said armature lever from the winding mechanism of the clock, when the clock is to be synchronized, consisting essentially of arms 96 and 97, and a lever 51, substantially as set forth. 5th. In a synchronizing clock, the combination of a magnet, an armature lever, a disc or dial adapted to move with the minute hand of the clock, a pin or projection on said disc, and mechanism operated by said disc to close the circuit, substantially as set forth. 6th. In a synchronizing clock, the combination of a magnet, an armature, a disc or dial adapted to move with the minute hand of the clock, mechanism moved by said disc to close the circuit, an arm moved by said disc into position to be

engaged by the armature lever, and mechanism moved by said arm, when the armature is attracted to the magnet, to disconnect the second hand shaft from the escapement of the clock, substantially as and for the purpose set forth. 7th. In a synchronizing clock, the combination of a magnet, an armature lever, a disc or dial adapted to move with the minute hand of the clock, a pin carried by said disc, a lever adapted to be engaged by said pin, an arm 55, having an inclined face, a pin or projection moved by said lever and bearing against said inclined face on the arm to move the arm laterally, a projection on said armature lever adapted to engage the end of said arm, when the armature is attracted by the magnet, an arm 66, operated by said arm 55, to move the second hand shaft longitudinally, a projection carried by the cage on said second hand shaft, and which is adapted to engage a toothed disc on the escapement wheel, a pin 81, on said cage, and a stop 82, substantially as and for the purpose set forth. 8th. In a synchronizing clock, the combination of a magnet, an armature lever, an arm 55, adapted to be moved by the minute hand shaft, bell crank lever 67^a, a second hand shaft 71, a cage on said second hand shaft, a projection 79 carried by said cage, and adapted to engage a toothed wheel or disc secured to the escapement wheel, a pin 81 on said cage, and a stop 82, substantially as and for the purpose set forth. 9th. In a synchronizing clock, the combination of the magnet, an armature lever, an arm 55, having an inclined end 59 adapted to be engaged by a pin on said armature lever and having an incline 54, a rod 52 having a pinion 53 and a lever 51, a disc or dial 4 having a pin 50, a bell crank 67^a, an arm 66 depending from the arm 55, adapted to engage and move said bell crank lever, a second hand shaft 71, a disc on said second hand shaft behind which said bell crank lever fits, a cage on said second hand shaft having an arm 80 carrving a pin 79, a toothed disc or wheel 78 secured to the escapement wheel, a projection or pin 81 on said cage, and a stop 82, all substantially as and for the purpose set forth. 10th. In a synchronizing clock, the combination of a magnet, an armature lever, mechanism moved by said armature lever to disconnect the second hand from the escapement wheel, and mechanism moved by said armature lever to correct the minute hand of the clock, said mechanism consisting essentially of a notched disc, an arm having a conical end, and a lever arranged to move said arm to press its conical head into said notch, substantially as and for the purpose set forth. 11th. In a synchronizing clock, the combination of a magnet, an armature lever, a notched disc connected to the minute hand of the clock, an arm having a conical end to engage in said notch, and a lever adapted to bear against said arm, and which is moved by said armature, substantially as and for the purpose set forth. 12th. In a synchronizing clock, the combination of the rod 52, having a lever 51, a disc carried by the minute hand shaft, and adapted to move said lever, and an arm 60 on said shaft, carrying an insulated contact plate 62 for closing the circuit, substantially as and for the purpose set forth. 13th. In a synchronizing clock, the combination of an arm 102, lever 105, having an inclined end 108, a stop 107 secured to said lever, a cage carried by the second hand shaft and having a pin adapted to engage a toothed disc carried by the escapement wheel, a pin 81 on said cage, an arm 110 adapted to be moved by said arm 102, and a bell crank lever 67^a, adapted to move said second hand shaft, substantially as and for the purpose set forth. 14th. In a synchronizing mechanism for clocks, an armature, a seconds hand shaft, a cage 73 carried loose on said shaft, a pin 79 and wheel 78, adapted to connect the said shaft to said cage, and mechanism between the armature and seconds hand shaft adapted to rotate the shaft and disconnect it from the cage 73, for the purpose set forth. 15th. In a synchronizing mechanism for clocks, an armature, an armature lever, the seconds hand, a shaft giving motion to the seconds hand, and an escapement wheel 72 having pin and wheel connection with the said shaft, and mechanism between the armature lever and said wheel adapted to rotate the wheel by the simple movement of the armature lever, for the purpose set forth. 16th. In a synchronizing mechanism for clocks, an armature lever having a pawl, a wheel acted upon by the pawl on the movement of the lever, and a wheel upon a shaft of the clock mechanism adapted to engage a wheel on the axis of the pawl wheel and having frictional connection with its shaft, substantially as and for the purpose set forth. 17th. In a synchronizing mechanism for clocks, a seconds hand shaft, a cage 73, a pin 79 and wheel 78 engaging the shaft with the cage 73, and which are disengaged by an endwise movement of the shaft, an armature lever, mechanism in connection with the armature lever adapted to revolve and give the said endwise motion to the seconds hand shaft, and a spring restoring the shaft to engagement with the cage, substantially as set forth. 18th. a synchronizing mechanism connecting the pawl wheel with the clock mechanism, a bell crank lever 67, 69, mechanism for moving the bell crank lever, a seconds hand shaft having endwise movement, and which is engaged by said bell crank lever, a cage on the shaft, a pin and wheel connection between the shaft and cage, adapted for engagement and disengagement by the endwise movement of the shaft, and a spring acting on the shaft in opposition to the bell crank lever, substantially as and for the purpose set forth. 19th. In a synchronizing mechanism for clocks, an armature lever carrying a pawl, a wheel acted on by the pawl, a bell crank lever 67, 69, mechanism for moving the bell crank lever, seconds hand shaft with wheel and pin connection with a cage, and having a collar apapted to receive the pressure of the bell crank, and a spring acting upon the shaft in opposition to the bell crank, substantially as and for the purpose set forth. 20th. In an electric winding clock, the shaft 3, the wheel 22, on said shaft and connected with the main spring, the wheel 20 on said shaft, the circuit breaking lever with its brush 26, the lever 28, the catch 30, lever 35, catch 41, having a finger 42, and a studd 44 on said wheel 22, substantially as set forth. 21st. In an electric winding clock, the shaft 3, the wheels 20 and 22 on said shaft, the main spring connected to the shaft and to the wheel 22, a movable contact device 26, and a disc 17 adapted for continuous contact with the device during the rotation of the wheels 20 and 22, substantially as set forth. 22nd. In an electric winding clock, the shaft 3, a wheel 22 on said shaft and having an incline 36, a stud 44, a wheel 20 on said shaft, a rod 37 parallel with said shaft and having bearing in the wheel 20, the levers 39, 28 and 24, with springs 27 and 33, and the catch 41, substantially as set forth. 23rd. In an electric winding clock, the shaft 3, wheel 22 on said shaft, having incline 36 and stud 44, wheel 20 on said shaft, main spring 21, rod 37 with wheel 38, lever 24 with brush 26, the conducting disc 17, the levers 28, 35, 39, catches 30 and 41, and an electric winding device, substantially as set forth. 24th. In an electric winding clock, the described combination of the main spring 21, and wheel 20 on the shaft 3, and the electric winder, composed of the magnet 8, armature lever 9, pawl 11, ratchet wheel 12, and spur wheel 13^a, all constructed substantially as set forth.

No. 42,521. Umbrella. (*Parapluie.*)

Robert Ralston, Hamilton, Ontario, Canada, 8th April, 1893; 6 years.

Claim.—1st. In an umbrella, a tube to receive the handle attached to the notch ring, to which the ribs are secured, and provided with an opening for the insertion of a pin through the tube and handle, by which the said handle is rendered removable, substantially as and for the purpose specified. 2nd. In an umbrella, the combination of the ribs *c*, tube C, with notch ring *b*, and tube runner B, *d*, pin *a*, and braces E, substantially as and for the purpose specified.

No. 42,522. Plow. (*Charrue.*)

William A. Keahey, Garnett, Arkansas, U.S.A., 8th April, 1893 6 years.

Claim.—1st. The combination in a plow, of the beam, the handles, the stirrup pivoted thereto and embracing the beam, and the downwardly depending arms having a series of holes pivoted to the beam and to the handles, substantially as described. 2nd. The combination with the beam and the adjustable handles, of the standard, the brace, the adjustable guide and the shovel secured thereto, substantially as described. 3rd. The combination with the beam, the adjustable handles, the standard, the brace, the adjustable guide and the shovel, of the fender pivoted to the beam, substantially as described. 4th. The combination in a plow, of the beam, and the clevis consisting of a metal plate or bar bent over at the centre forming two arms, the ends of which are curved upwardly and bent inwardly forming lugs, engaging with the upper side of the beam, substantially as described.

No. 42,523. Steamboat for Passengers.

(*Bateau à vapeur pour passagers.*)

Alexander McDougall, Duluth, Minnesota, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. The combination of a hull of a general tubular form, for giving torsional strength thereto, of a metallic deck rigidly supported above said hull for imparting longitudinal strength to the same, substantially as described. 2nd. An improved steam passenger boat, consisting of a hull of a general tubular form, for giving torsional strength thereto, a horizontal deck rigidly supported above said hull for imparting longitudinal strength to the same, and cabins mounted on said horizontal deck, substantially as described. 3rd. An improved steam passenger boat, consisting of a hull of a general tubular form, a horizontal deck rigidly mounted above said hull upon turrets E and F, and supporting pipes, and cabins on said horizontal deck, substantially as described. 4th. An improved steam passenger boat, consisting of a hull of a general tubular form, bulk heads within said hull extending from the false bottom thereof to the extreme top, a horizontal deck rigidly mounted above said hull on turrets and supporting pipes, and cabins on said horizontal deck, substantially as described. 5th. An improved steam passenger boat, consisting of a hull having straight parallel sides, a long spoon shaped bow, a fine cut-away stem, a rounded bottom, and a curved top, a horizontal deck rigidly mounted above said hull on turrets and supporting pipes, and cabins on said horizontal deck, substantially as described.

No. 42,524. Eye-glass, etc. (*Lorgnon, etc.*)

Fritz George Schmidt, New York, State of New York, U.S.A., 8th April, 1893; 6 years.

Claim.—1st. The improved nose piece for eye-glasses or analogous devices, consisting of the substantially flat metallic piece H, adapted to be connected to the glasses, having integral portion *a*, constituting the usual forward nose piece, extending substantially in the plane of the lenses and constructed on its back face to be attached directly to the usual stud of the glasses and on its front face to be

connected directly to the shell of the nose piece, having the integral adjustable rearwardly extending shank G, projection from said portion *a*, and having the integral rearward portion *b*, at the end of said shank constructed on its front face to be connected directly to a shell and constituting an auxiliary nose piece adapted to engage the nose of the user rearwardly of the plane of the lenses, whereby only one piece of metal is required for the usual and auxiliary nose pieces of each lens of the glasses, substantially as and for the purpose set forth. 2nd. In eye-glasses or analogous devices, the lenses or lens frames, their studs D, and the intermediate bridge connected thereto, in combination, of a nose piece for each lens, consisting of a substantially flat metallic piece as H, having an elongated forward portion *a*, extending in the plane of the lens, constructed at the upper end of its back face to be connected directly to the stud of the glasses and on its front face to be directly connected to a facing *e*, and constituting the usual front nose piece E, for engaging the front of the nose, a lateral shank, as G, integral with and projecting from the rear side of said portion *a*, in substantially the same plane therewith, and a rearward portion *b*, integral with and projecting from said shank, extending substantially parallel with said portion *a*, constructed on its front face to carry a facing *f*, and constituting an auxiliary nose piece F, said portions *a*, G and *b*, all constructed of one integral piece, substantially as and for the purpose set forth.

No. 42,525. Sole Sewing Machine.

(*Machine à coudre les semelles.*)

George Richard Peare, Lynn, Massachusetts, U.S.A., 8th April 1893; 6 years.

Claim.—1st. In a sole sewing machine, the following instrumentalities, viz: a horn spindle, as A^5, having a gear A^9, a toothed segment, a compound connection composed of rods and a spring and blocks, and means to actuate one of the said rods positively, substantially as described, the other rod transmitting its power to the segment in a yielding manner, for the purposes set forth, substantialy as described. 2nd. In a sole sewing machine, a horn, a vertical horn spindle A^5, and the shaft *c*, in the horn, the gear c^2 thereon, and the whirl actuating pinion connected to said shaft, combined with a clutch composed of separable members or parts constituting a yielding element of the looper train and adapted to yield one part with relation to the other upon undue obstruction of the rotation of the shaft *c*, by stoppage of the whirl actuating pinion, substantially as described. 3rd. The shaft A^5, its attached plate d^1, having dogs or projections 3, 4, arranged out of line with the diameter of the said plate d^1, and at different distances from the centre of the shaft A^5, and a plate *d*, and a spring to force it toward the plate d^1, said plate having conical recesses to receive the said dogs or projections, combined with a horn and a shaft *c* therein, provided with a gear c^2, to operate substantially as described. 4th. The combination, with a horn of a sole sewing machine, of a whirl actuating pinion therein having its shaft slotted at its lower end and threaded and a sleeve screwed thereon, as described, a rotating shaft c^1, having a tongue to enter the slot of the said whirl actuating pinion, and the said sleeve, to operate substantially as described. 5th. A sole sewing machine horn and shafts *c*, c^1, therein, and bevelled gears *c*, c^1, connecting them, combined with a bearing c^2, having an ear, and a bearing c^6, pivoted at c^5, to the said ear, and with a tipping bearing c^7 for the lower end of the shaft *c*, substantially as described. 6th. A sewing machine horn having shafts *c*, c^1, gearing connecting the said shafts, and a thread support *b*, and tension device, the said horn being closed at its concave side and being open at its convex side from at or near a point opposite the said gears to a point below the tension device, as and for the purpose set forth, substantially as described. 7th. A sewing machine horn having its concaved side from its tip to the base closed, a solid portion of the horn nearer its concaved face being provided with a thread hole, as and for the purpose set forth, substantially as described.

No. 42,526. Stock Cutter. (*Tranche rotatoire.*)

Isaiah Hardee, Burke, Texas, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A rotary stock cutter comprising a hub adapted to be secured to a spindle, a disc formed on the said hub and provided with a flange, a set of cutters seated in the said disc and abutting against the said flange, a middle disc placed on the said first named disc and containing a set of cutters arranged alternately with the cutters of the said first named disc, and a third disc fitting into the middle or second disc and also provided with a flange and sets of cutters, substantially as shown and described. 2nd. A rotary stock cutter comprising a hub adapted to be secured to a spindle, a disk formed on the said hub and provided with a flange, a set of cutters seated in the said disc and abutting against the said flange, a middle disc placed on the said first named disc and containing a set of cutters arranged alternately with the cutters of the said first named disc, and a third disc fitting into the middle or second disc and also provided with a flange and sets of cutters and bolts for fastening the several discs together, as set forth.

No. 42,527. Drum for Hot Air Furnaces.

(*Dôme pour fournaises à air chaud.*)

John Alfred Crossman and John Alfred Laws, both of Amherst, Nova Scotia, Canada, 10th April, 1893; 6 years.

Claim.—1st. A drum heater comprising the external wall 5 an inlet pipe or tube 2, closed at the top by a cap 3, and provided with a port 4, discharging laterally into the drum, a wall 8, having the ends secured to the inlet pipe or tube 2, at opposite sides of the port 4, and following the external wall parallel and heads 12, at both ends covering the smoke space or divided flue 7, whereby the wall of the inlet pipe or tube and the wall 8, of the smoke passages 7, form a circulating air space 6, and said space divides the volume of smoke in passing through the drum, as set forth. 2nd. An oval shaped drum having in cross section a horse shoe shape circulating air space 6, extending from end to end of the drum and a central inlet pipe or tube 2, closed at the upper end and provided with a cap 3, and having a port 4, oppositely to said space, and an outlet 9, located at the greater distance from said port, as set forth. 3rd. The combination with a stove A, of a hot air furnace, of a drum attached to the smoke pipe or connecting with the smoke outlets, said drum having a tubular inlet 2, passing through an open space 6, and closed at the upper end, and provided with a port 4, discharging laterally into the drum and having a divided flue 7 around said air space, as set forth.

No. 42,528. Spring Tyres and Apparatus for their Manufacture. (*Bandage à ressort et appareil de fabrication.*)

John Boyd Dunlop, sr., and John Boyd Dunlop, jr., Blackrock Dublin, Ireland, 10th April, 1893; 6 years.

Claim.—1st. The combination with a wheel having a rigid rim, of a spring tyre made up of rows of elastic blocks secured at intervals on the rim, and bands of canvas wrapped round each said row of blocks, substantially as and for the purpose specified. 2nd. The combination with a wheel having a flexible rim, of a spring tyre made up of rows of elastic blocks secured at intervals on the rim, and bands of canvas wrapped round each said row of blocks, substantially as described for the purpose specified. 3rd. The combination with a wheel, of bands of canvas broader than and secured to the rim thereof, a row of blocks of indiarubber secured at intervals to said band, the sides of said blocks being cemented to the overlapping edges of said band, and other bands and blocks placed outside said row of blocks, substantially as and for the purposes specified. 4th. The combination with a wheel, of bands of canvas secured at intervals on the rim thereof, blocks of indiarubber secured to the said canvas bands, other bands and blocks secured outside the inner row, and an outer band of canvas and indiarubber furnished with a projecting contral ridge or ridges, substantially as described for the purpose specified. 5th. The combination with a wheel of bands of canvas secured on the rim, blocks of rubber secured at intervals to the said bands, an outer canvas band covered with indiarubber to form the thread surfaces of the wheel, and side strips of rubber or other suitable material to cover the spaces between the blocks, substantially as described for the purpose specified. 6th. The combination with a wheel having a rigid corrugated or castellated rim, of bands of canvas secured thereon, and a row of blocks of indiarubber secured at intervals in said bands, and other bands of canvas placed outside said row of blocks, substantially as described and for the purpose specified. 7th. In the manufacture of a spring rim or tyre having blocks of rubber or the like spaced at intervals on the rim of a wheel, the employment of a flat disc of larger diameter than the rim of the wheel and having projections on the sides thereof of the shape, size and position of the desired spaces between the blocks to be placed on the rim of the wheel, substantially as described for the purpose specified.

No. 42,529. Handle. (*Manche.*)

Nelson Hindley Prouty, Charlton, Massachusetts, U,S.A., 10th April, 1893; 6 years.

Claim.—As an improved article of manufacture, a handle, consisting of a disc, or circular plate, provided with holes or openings in the edge thereof, and a coiled wire extending around the edge of said disc, and passing through the holes therein, substantially as shown and described.

No. 42,530. Aerator and Cooler for Milk and Cream.

(*Garde-lait et crème aérateur.*)

Patrick Star Ryan, Rutland, Vermont, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A cream and milk cooling apparatus, consisting of a shallow vessel having a closed water chamber formed under it, and around its sides, an inlet for the water into the said chamber, an overflow for the said water, the entrance to the said overflow being formed above the level of the top of the sides of the said shallow vessel, an air escape tube permitting the water to enter the chamber and means for agitating the water in the said chamber, substantially as set forth. 2nd. In a cream and milk cooling apparatus, the combination with a milk vat C, of the water chamber A, D, air escape tube E, and overflow T, substantially as set forth. 3rd. In a cream or milk cooling apparatus, the combination with the vat C, and water chamber A, of the cylindrical chamber H, having a cover I, having a perforated raised ring I_2, an ice pounder consisting of a perforated cone *n*, and rod N, the said rod passing through a perforation in the said cover, substantially as set forth. 4th. In a cream and milk cooling apparatus, the combination with a milk vat, having a water chamber formed under and around the sides of the blades *p*, on the vertical rod Q, adapted to rotate in the said water chamber, the air escape tubes E, connected to the said water chamber and the overflow tube T, substantially as set forth.

No. 42,531. Vehicle Gear. (*Train de voiture.*)

Thomas F. Updegrove, Avery, Kansas, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. The herein described running gear for a wagon, consisting of an axle, an axle beam of I-shaped form to provide upper and lower flanges projecting from opposite sides thereof, an I-shaped bolster mounted on said beams and above the same and in like manner formed with flanges, and single bolts extending through the flanges of said parts at opposite sides and ends thereof, and having their lower ends secured against the under portion of the axle beam, substantially as described. 2nd. The herein described running gear for a wagon, consisting of an axle, an axle beam of I-shaped form to provide upper and lower flanges projecting from opposite sides thereof, U-shaped angle plates centrally mounted on said axle beam apart from each other to form a guide, an I-shaped bolster mounted on said angle plate and secured thereto, a reach bar adapted to fit between and move through said angle plates, and a single bolt arranged at each of the opposite ends of said parts on opposite sides of the same and extending through the flanges thereof and secured at their lower ends against the under portion of the axle, a space also being formed by the said angle plate between the bolster and axle beam for the insertion and retention of the hounds, substantially as described. 3rd. The herein described running gear for a wagon, consisting of an axle of hollow metal having solid ends formed into spindles, an axle beam of I-shaped form to provide upper and lower flanges projecting from opposite sides thereof and having the ends bevelled or cut away, an I-shaped bolster mounted on and above said beam, U-shaped angle plates mounted between the said beam and bolster to provide an intervening space or guide, hounds of U-shaped form having portions thereof between the said beam and bolster and the front ends of the same formed into boxes, a tubular reach bar adjustably mounted on the hounds and extending through the space or guide formed by the angle plates and vertical bolts extending through the flanges of the hounds, bolster and beam, and located on both sides of said parts at opposite ends thereof and being of single form at said opposite ends of said sides and having the lower ends of the same secured adjacent to the under side of the axle, substantially as described.

No. 42,532. Baker's Oven. (*Four de boulangerie*)

Fritz Duhrkop, New York, state of New York, U.S.A, 10th April, 1893; 6 years.

Claim.—1st. A baker's oven having a double front wall that encloses an upright air space g^2, a fire door a^1, openings g^3, back of the fire door that communicate with the air space, and a top air outlet, substantially as specified. 2nd. A baker's oven having hot air flues, a disconnected air space below the baking chamber, a heating space above the baking chamber, and a second air space in front of the baking chamber, substantially as specified. 3rd. The combination of baking chamber *d*, having perforated floor, with an evaporating tray beneath said floor, substantially as specified. 4th. The combination of baking chamber *a*, having perforated floor, with drip cup *i*, tube i^1, and tray *h*, substantially as specified.

No. 42,533. Method of and Apparatus for Annealing Metals. (*Méthode et appareil pour recuire les métaux.*)

James Douglas Storie, Oshawa, Ontario, Canada, 10th April, 1893; 6 years.

Claim.—1st. The herein described method of annealing metals consisting in providing in the fire chamber two separate beds of coal fuel, the high state of combustion of one of which acts upon the other and cokes it so that the combined flames arising from the portion being coked and the portion in a high state of combustion produces a flame of great heat which is materially augmented by the introduction of heated air into the combustion chamber, from which the natural draught causes the then intensely heated flame to enter through a flue into the top of the annealing chamber, as and for the purpose specified. 2nd. The herein described apparatus for annealing metals consisting of the fire chamber C, having the grate bars G, upon which is placed the coal screenings in a high state of combustion, and the shelf H, upon which is placed the screenings which are coked, and the usual ash pit with opening or door, the combustion chamber B, having flues J, leading from the top of the fire chamber into the combustion chamber, and the flue K leading from the combustion chamber into the annealing chamber, the openings Q extending into the annealing chamber from the hollow wall, and connected to the outer air by the opening O, as and for the purpose specified. 3rd. The combination with the fire chamber C, having the grate bars G, and shelf H, the openings R closed by the cover *v*, and the usual ash pit and door as specified, of the combustion chamber B, provided with openings J and Q, and openings K leading into the annealing chamber, arranged as and for the purpose specified. 4th. The combination with the fire chamber C, having the grate bars G and shelf H, and the usual ash pit and door, as specified, the combustion chamber B, provided with openings J and Q, and opening K leading into the annealing chamber, of the blast pipe N, leading into the ash pit D, and designed as and for the purpose specified

No. 42,534. Sash Fastener. (*Arrête-croisée.*)

Adelbert Raymond and Francis Smith North, both of Detroit, Michigan, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. In a sash fastener, the combination of a series of key plates adapted to be secured in the upper sash, of a detachable key having means for locking in said plate and a stem extending freely into the path of the lower sash, substantially as described. 2nd. In a sash fastener, the combination of the upper sash having a key plate, a detachable key having means for securing it in said plate, and a stem extending over the lower sash, a wing on said stem having a curved bearing and a wearing plate on the meeting rail of the lower sash against which said wing is adapted to bear, substantially as described. 3rd. In a sash fastener, the combination of the upper sash having a vertical series of key plates, a detachable key having means for securing it in said plate, and a stem extending over the lower sash, a wing on said stem having a curved bearing, a wearing plate on the meeting rail of the lower sash, against which the curved bearing is adapted to be turned, and a cam-shaped lug on the wearing plate against which the side of the wing bears to draw the meeting rails together, substantially as described. 4th. In a sash fastener, the combination of a key plate in the upper window sash, a detachable key adapted to engage therein, a locking lug on said key, and a wing on the stem at right angles to the lug, whereby the wing normally tends to turn the key by gravity to its locked position, substantially as described.

No. 42,535. Method of and Machinery for Making Nets. (*Méthode et machine pour faire des filets.*)

William Ireland, Buckhaven, Fife, Scotland, 10th April, 1893; 6 years.

Claim.—1st. In a machine for the manufacture of fishing nets the combination of the hooks *f* with the needles *a*, hooks *b*, fallers *c* and chopping bar *x*, operating to produce a double hitch or twist knot, substantially as described. 2nd. In a machine of the class set forth the combination in conjunction with ordinary knotting mechanism of hooks *f*, actuated to produce in conjunction with the said mechanism a double hitch knot, substantially as described. 3rd. In a machine of the class set forth a cam *s* having at one part of its circumference a fish-shaped piece *r* swivelling on a center r^1 carried by a strip *t* secured to the cam in combination with the bar *n* having a pin or roller t^1, which alternately passes under and over the fish piece and causes the hook bar *k* to move to the right and left alternately as described.

No. 42,536. Friction Clamp. (*Crampon à friction.*)

James M. Ulsh, Harrisburgh, Pennsylvania, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A friction clamp, substantially as described, comprising the jaws arranged to be drawn together by a single bolt to hold itself and an implement or part upon a frame or object, as and for the purpose described. 2nd. A friction clamp, substantially as described, comprising the jaws, an intermediate plate, and a bolt, as set forth. 3rd. A friction clamp made of a single casting, and comprising the two jaws, and the intermediate plate arranged relatively to the jaws to bind with one jaw upon a frame and with the other jaw upon an implement, and a bolt, substantially as described. 4th. A friction clamp, comprising the jaws, the binding plate joined to the jaws and terminating at its free end between or within the same, and means for drawing the jaws together, substantially as described. 5th. A friction clamp having the intermediate plate between its jaws, said plate and one jaw conforming to the frame or part to which the clamp is to be applied, and the other jaw being arranged relatively to the plate to form a socket for an implement or other part, the jaws being adapted to be compressed by suitable means, as set forth. 7th. A friction clamp comprising the segmental jaw, the segmental plate, another jaw joined to the other parts and forming, with the plate, a socket, and a single bolt, substantially as described. 7th. A friction clutch comprising the two jaws, the intermediate plate joined to the jaws and arranged between the same, and with its free end terminating within the space inclosed by the jaws the free ends of said jaws being converged to receive a single through bolt, substantially as described.

No. 42,537. Churn. (*Baratte.*)

Carl Gustaf Patrik De Laval, Stockholm, Sweden, 10th April, 1893; 6 years.

Claim.—1st. The combination, with the stationary shell or casing of the churn, of an axial supply inlet at one end, revolving beaters arranged within the shell or casing, and a central discharge at the opposite end, through which the product of butter and churn milk is continuously discharged, substantially as set forth. 2nd. The combination, with the stationary shell or casing of the churn, having a supply inlet at one end, of revolving beaters arranged within the shell or casing, and a discharged tube secured to the beaters and rotating therewith, substantially as set forth. 3rd. The combination, with the stationary shell or casing of the churn, of a hollow supply shaft arranged in the inlet end of the shell or casing, means whereby said hollow shaft is rotated, and beaters arranged within said shell or casing and connected with said shaft, substantially as set forth. 4th. The combination, with the stationary shell or cas-

ing of the churn, of a hollow supply shaft arranged in the inlet end of the churn, a driving pulley secured to the outer end of said shaft, and a beater shaft arranged within the shell or casing and attached to the inner end of said shaft, substantially as set forth. 5th. The combination, with the stationary shell or casing of the churn, of a hollow supply shaft arranged in the inlet end of the shell or casing, rotating beaters arranged within the shell or casing and connected with said hollow shaft, a discharge for the product of separation at the opposite end of the churn, and a receiving hood inclosing said discharge, substantially as set forth. 6th. The combination, with the stationary shell or casing, provided with a supply inlet at one end, and a discharge for the product at the opposite end, revolving beaters arranged within the shell or casing, and a water jacket surrounding said shell or casing, of a hollow cooler having its cream discharge connected with the supply inlet of the shell or casing, and its water space connected with the water jacket of the shell or casing, substantially as set forth.

No. 42,538. Device for Attaching Horse-Shoes.

(*Appareil pour assujeter les fers à cheval.*)

Roland D'Anvers, Hastings, Hawke's Bay, New Zealand, 10th April, 1893; 6 years.

Claim.—1st. In a nailless horse-shoe, the combination, with the shoe plate *a*, of the heel shoe *c*, the half bands *d*, front strap *b*, and screw b^5, substantially as described. 2nd. In a nailless horse-shoe, the combination, with the shoe plate *a*, of the heel shoe *c*, the half bands *d*, front straps *b*, spikes b^3 and screw b^5, substantially as described. 3rd. In a nailless horse-shoe, the combination, with the shoe plate *a*, of the heel shoe *c*, the half bands *d*, elastic packings *e*, front straps *b*, screw b^5, substantially as described. 4th. In a nailless horse-shoe, the combination, with the shoe plate *a*, of the heel shoe *c*, the half bands *d*, front strap *b*, screw b^5, elastic packings *e*, screws b^3 and *c*, with calks *f*, substantially as described.

No. 42,539. Machine for Producing Ozone.

(*Machine pour la production de l'ozone.*)

Christen Rainsback Poulsen, Horsens, Denmark, 10th April, 1893; 6 years.

Claim.—1st. Apparatus for production of ozone by the oxydation of phosphorus consisting of a reservoir, a suitable liquid in the lower part of the same, a finely perforated diaphragm some distance above the level of the liquid and a holder containing a piece of phosphorus, said holder passing through the diaphragm and being adapted to be adjusted so as to be in contact with the liquid, the apparatus operating so that the phosphorus acid developed and arising against the diaphragm is deflected down upon the liquid and transformed into phosphoric acid while the ozone in a pure state escapes through the perforations of the diaphragm and out through the top, substantially as set forth. 2nd. Apparatus for production of ozone by the oxydation of phosphorus consisting of a reservoir, a suitable liquid in the lower part of same, an open worked cap or lid, a finely perforated diaphragm between the cap and the level of the liquid and a holder containing a piece of phosphorus, said holder passing through a cork in the cap and through the diaphragm, and being adapted to be adjustable so as to be in contact with the liquid, substantially as and for the purpose set forth. 3rd. Apparatus for the production of ozone by the oxydation of phosphorus consisting of a reservoir, a liquid in the lower part of same composed of distilled water, pure sulphuric acid and permanganate of potash as described, a finely perforated diaphragm some distance above the level of the liquid and a holder carrying a piece of phosphorus and adapted to be adjusted so as to be in contact with the liquid, substantially as and for the purpose set forth. 4th. Apparatus for the production of ozone by the oxydation of phosphorus consisting of a reservoir A, a suitable liquid in the lower part of same, an open worked cap B with cork E, a finely perforated diaphragm G between the cap and the level of the liquid and a bent holder C with cup C^1 containing a piece of phosphorus D, said holder passing through the cork E and the diaphragm G, substantially as and for the purpose set forth.

No. 42,540. Stool. (*Tabouret.*)

Robert Mostyn Burrows, Cleveland, Ohio, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. The combination of a stationary plate K, an upright supporting stand, arm I, a revolving plate or member I^1, pivoted to the aforesaid stationary plate and having one or more notches I^6, lever O, and a spring P, all operating substantially as set forth. 2nd. The combination of a stationary plate K, having lug or bearing K^4, an upright supporting stand, arm I, revolving plate or member I^1 provided with a hole or perforation I^6, and a bolt I^2 and washer M, all operating substantially as set forth. 3rd. In a stool, the combination with the seat and supporting stand terminating at its upper end in an upright sleeve E, of a rotating jointed spindle D suitably secured to the seat, nicely fitting within the aforesaid sleeve, and having a shoulder or bearing D^1, the parts being arranged substantially as set forth. 4th. In a stool, the combination with the seat, and supporting stand having an upright sleeve, of a jointed and vertically movable spindle D rigidly secured to the seat and revolubly supported by said sleeve, and a stop for limiting the elevation of the spindle, the parts being arranged substantially as set forth.

No. 42,541. Burner for Hydrocarbon.

(*Foyer à hydrocarbures.*)

William F. Otis, Norwalk, Ohio, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. The combination with the casting and its diaphragm and curved air pipes, of the generator, with central hole, and the elbow pipe communicating with the generator, and having the vent beneath the hole of the generator and the air pipes terminating below said hole, and centrally over the vent in said pipe, as set forth. 2nd. The combination with the casting and its air pipes, of a generator with central opening, the supply pipe communicating with the generator and the elbow pipe communicating with the generator, and having a vent hole beneath the opening in the generator, said air pipes being oppositely curved and terminating over the said vent hole and below the central opening of the generator, as and for the purposes specified. 3rd. The combination with the casting having integral depending flange, horizontal diaphragm and curved air pipes rising from the diaphragm, of the generating chamber, the pipe having vent below and between the said air pipes, and having a nozzle within the generating chamber, the supply pipe and the tube connecting the diaphragm of the casting with the generator and with which the supply pipe communicates, all substantially as shown and described. 4th. The combination with the casting having integral depending flange, horizontal diaphragm and curved air pipes rising from the diaphragm, of the generating chamber, the pipe having vent below and beneath the said air pipes, and having a nozzle within the generating chamber, the supply pipe and the tube connecting the said diaphragm with the generator and with which the supply pipe communicates, and a removable funnel-shaped air mixer, all substantially as shown and described. 5th. In an oil burner, a spreader having a scalloped plain edge, as set forth.

No. 42,542. System of Cutting Ladies' Garments.

(*Méthode de tailler les vêtements de dames.*)

Louise Lehn, Buffalo, New York, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A system of cutting and fitting ladies' garments, consisting of a number of patterns, the outlines of the different sizes of which are enclosed within the other and advance from the smallest size up, and portions of some of the lines of some sizes lie between the lines of their adjacent pattern lines, substantially as and for the purposes hereinbefore set forth. 2nd. A device for cutting and fitting ladies garments, consisting of a number of patterns advancing from the smallest to the largest size, and having each pattern of one size, and its corresponding connecting pattern indicated by a different kind of a line from any other pattern of a different size, substantially as and for the purposes hereinbefore set forth.

No. 42,543. Money Recording and Receipting Machine. (*Caisse régistre de monnaie.*)

Joseph F. Schener, Plymouth, Wisconsin, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. In a money recording and receipting machine, the combination, of a casing, shafts therein, placed in a series of vertical lines, the shafts in the rear being arranged on a plane higher than the plane of the front shafts, slips wound upon the several shafts, the ends thereof passing through openings in the front of the casing, the slips upon the rear shaft extending out above and clear of those upon the front shaft, substantially as set forth. 2nd. In a money recording and receipting machine, the combination, of a casing, a series of transverse strips constituting the front of the machine, provided in their contacting or contiguous edges with registering semi-circular grooves, roller bars, fitting in said registering grooves, a series of shafts journalled in the casing, and slips wound upon the shafts, having their outer ends passing between the contiguous or contacting edges of the transverse strips with the roller bars bearing against the same, as set forth. 3rd. In a money recording and receipting machine, the combination, of a casing, a series of transverse strips constituting the front of the machine, said strips provided in their contacting or contiguous edges, with registering semi-circular grooves and in their front with depressions or recesses, roller bars fitting in the registering grooves, knives projecting out from the transverse strips at a slight incline, a series of shafts journalled in the casing, and recording and receipting slips wound upon the shafts, having their outer ends passing between the contiguous or contacting edges of the transverse strips, with the weight bars bearing against the same, and having printed thereon a series of coupons, substantially as set forth. 4th. In a money recording and receipting machine, the combination, of a casing having a removable front and back, a series of vertical strips, front and rear shafts journalled in said strips, and a series of vertical lines, each of the rear shafts mounted a slight distance above the shaft in front, and recording and receipting slips wound upon the shafts, the ends of said slips being carried through slits in the front of the machine, alternately from the rear and front shafts, and composed of a series of coupons in the form of a receipt for the amount of the purchase, numbered consecutively from one upwards, and constructed to be detached or severed separately, substantially as set forth.

No. 42,544. Fastener for Hoops and Bands.

(*Agrafe pour les cercles et bandes.*)

Charles Sparks, Sacramento, California, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A hoop or band fastener and tightener, consisting of a shell having a socket and guide *a*, at one end, and having its opposite end provided with an opening a^2, and wedge shaped slot, a screw in the shell having one end mounted in the socket and the other end formed with a key-seat entering the opening a^2, and a nut on the screw having a foot *c*, provided with a wedge-shaped slot, substantially as described. 2nd. A hoop or band fastener and tightener, consisting of the hollow shell, having at one end a hole and a wedge-shaped slot, and at the other end a socket, the screw having a key-seat end and fitted to the shell with said end in the hole thereof and the other end in the socket, and the nut on the screw having a foot with a wedge shaped slot, substantially as herein described.

No. 42,545. Oven. (*Fourneau.*)

Horace Thorne, assignee of Charles Frederick Hubbard, both of Toronto, Ontario, Canada, 10th April, 1893; 6 years.

Claim.—1st. A chamber, having its two outer sides, back and top, lined with asbestus, mineral wool, or other suitable non-conductor, and within said lined sides an air space having an aperture through its top to communicate with an arched air space extending over the crown of said chamber, a smoke pipe or flue from the arched air space, a stove or furnace contained within said chamber and having a smoke pipe to communicate with the side air space or spaces, substantially as and for the purpose specified. 2nd. A chamber, having its two outer sides, back and top, lined with asbestus, mineral wool, or other suitable non-conductor, and within said lined sides an air space having an aperture through its top to communicate with an arched air space extending over the crown of the said chamber, a smoke pipe or flue extending from the arched air space, a stove or furnace contained within said chamber and having a smoke pipe to communicate with the side air space or spaces, an aperture with suitable damper between the side air space and chamber near the bottom of the latter, and an aperture with suitable damper between the chamber and exterior thereof, substantially as and for the purpose specified. 3rd. A chamber or oven, made of plates of sheet metal arranged as described, with a lining of asbestus between them and the corners of the outer sheets having a series of hinge-shaped eye plates connected to them and arranged so that the eye plates on one sheet shall interlock with the eye plates on the adjoining sheet, so that the same may be connected together by means of a bolt, substantially as and for the purpose specified. 4th. A chamber or oven, connected together, substantially as described, and having an air space above its crown formed between the arched or curved plates K, and L, and protected by an asbestus lining between the curved plate L, and plate M, substantially as and for the purpose specified. 5th. A chamber or oven, constructed substantially as described, and having corresponding plates O, at its front and back with curved ribs formed thereon to support the ends of the plates K, and L, and N, substantially as and for the purpose specified. 6th. A chamber or oven, having its sides formed by double walls filled with asbestus, said walls having a series of narrow plates extending from the outer to the inner wall to strengthen the same and form supports for the asbestus or other non-conducting lining, substantially as and for the purpose specified. 7th. A chamber or oven, constructed substantially as described, and having a front with a sunk portion S, in which the stove and ash doors are formed in combination with an outer door designed to enclose the said stove and ash doors, substantially as and for the purpose specified.

No. 42,546. Detachable Heel for Boots and Shoes.

(*Talon mobile pour chaussures.*)

Morris Wise, Smith Mead Weed and Henry Davis, all of New York, State of New York, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. The combination with a removable heel, of independently removable staples C formed of flat pieces of sheet metal and provided with eyes at one end, a plate E struck up from sheet metal with a series of loop projections F corresponding in shape to the eyes in the staples, and a key passing through the loops and eyes, substantially as described. 2nd. The combination with a sole and a removable heel each having interlocking eyes of a key for engaging said eyes said sole having an interior or concealed channel or way located within the boot or shoe for the key, substantially as described. 3rd. The combination with a sole and a removable heel each having interlocking eyes of a key for engaging said eyes, said sole having an interior or concealed channel or way located within the boot or shoe for the key and a filling piece for said channel or way, substantially as described.

No. 42,547. Draft Equalizer. (*Régulateur du tirage.*)

James Thornton Huber, Berlin, assignee of Jacob Sararus, Township of Waterloo, both of Ontario, Canada, 10th April, 1893; 6 years.

Claim.—1st. In a carriage gear the combination of cross bar E, having slot H, rods D, bars C, and clips B, substantially as and for the purpose hereinbefore set forth.

No. 42,548. Drinking Founts. (*Fontaine.*)

Benjamin Fletcher, Toronto, Ontario, Canada, 10th April, 1893; 6 years.

Claim.—1st. In a drinking fount, the syrup well having a plunger or piston head adapted to reciprocate at the upper end of the well to compress the air beneath said piston and form a pneumatic cushion to expel the syrup at the bottom, substantially as shown and described. 2nd. A syrup well provided with a plunger or piston head having an air tight packing ring at its periphery and a hollow plunger or piston rod secured to its centre as an inlet for air, substantially as shown and described. 3rd. A syrup well provided with a syrup passage extending externally from the bottom to discharge downward at a distance above the top of the well, substantially as shown and described. 4th. A syrup well having an inclining bottom so that its lowest and highest edges are diametrically opposite, substantially as shown and described. 5th. In a syrup well, the combination of the external syrup passage extending from the bottom to discharge downward at a distance above the top of the well, and the outlet opening in the deepest side of said well and discharging into said syrup passage, substantially as shown and described. 6th. In a syrup well, the combination of the plunger or piston head having a packing ring as described and a hollow rod secured to its centre, and the lid fitted within the top of said well to guide said piston head and rod, substantially as shown and described. 7th. In a syrup well, the combination of the plunger or piston head having a packing ring as described, the hollow rod secured to the centre of said plunger, the lid in said well to guide the said hollow rod operating through it, and the spiral spring encircling said hollow rod, substantially as shown and described. 8th. In a syrup well, the combination of the inclined bottom, the outlet opening at the lowest side of said bottom, the external syrup passage extending from said outlet to discharge downward at a distance above the well, the plunger head having a packing ring thereon, the hollow rod secured to the centre of said plunger head the spiral spring encircling said hollow rod to reciprocate it after compression, the lid fitted within the upper end of said well, and the adjustable collar on said hollow rod, substantially as shown and described.

No. 42,549. Valve. (*Soupape.*)

The Consolidated Car Heating Company, assignee of James F. McElroy, all of Albany, New York, U.S.A., 10th April, 1893; 6 years.

Claim.—1st. A valve for a steam pipe provided with a valve chamber, a valve stem, a hollow cylinder secured to the valve stem below the disc, an opening in the valve casing to admit of the movement of the hollow cylinder therein, said opening communicating with the steam supply pipe, said hollow cylinder provided with cuneiform openings through the sides thereof, substantially as described and for the purpose set forth. 2nd. In a valve for a steam pipe, a valve stem, a valve disc secured thereto, a hollow cylinder at the end of the valve stem, a series of cuneiform openings in said hollow cylinder having their apex near the upper end thereof, substantially as described and for the purpose set forth.

No. 42,550. Torch. (*Torche.*)

The Bridgeport Brass Company, Bridgeport City, assignee of Frank Rhind, Meriden, Connecticut, all of U.S.A., 10th April, 1893; 6 years.

Claim.—1st. In a torch of the character described, a reservoir for holding the fuel in combination with an outwardly extending wick tube provided with a nipple, a wick filling said tube and extending into the reservoir, and the pressure relief tube having one end extending into the wick tube and terminating adjacent to the inner end of the nipple, and having its other end extending into the reservoir and terminating near the top of the latter. 2nd. In a torch, as described, a reservoir for holding the fuel, in combination with an outwardly extending wick tube, a nipple at the end of said tube, a wick fitting said tube closely and extending into the reservoir, and a pressure relief tube contained within the wick and extending backward into the reservoir, and then upward and terminating near the top of the reservoir, substantially as and for the purpose specified. 3rd. In a torch of the character described, the combination with the reservoir of the outwardly projecting wick tube provided with a nipple, the wick closely fitting said wick tube and terminating near the lower end of the nipple, and the tube 6 having its outer end contained within the wick, and terminating near the outer end thereof, and having its rear end opening into the reservoir near the top thereof, substantially as and for the purpose specified. 4th. In a torch as described, the combination, with the reservoir, of the outwardly extending wick tube provided with a nipple, of a wick closely fitting said tube and the tube contained within said wick, the outer end of said tube terminating in the wick near the base of the nipple, and the rear end of said tube extending downward through the wick into the reservoir, and then upward to the opening near the top of the latter, substantially as described. 5th. The combination, with the nipple, of a gas supply, a burner consisting of a body portion adapted to fit over the nipple, said burner provided with a flattened outer extremity whereby a broad flame is formed, provided also with an air entrance below the flattened portion, and with independent entrances for air in its flattened portion, substantially as described. 6th. In a burner as

described, the body having the air intakes 8, and constituting above said intake a mixing chamber, a flattened and flaring end formed upon the body as shown and described, said flattened portion being pierced with holes 15, as and for the purpose set forth. 7th. The combination, with the wick tube, of a hydro-carbon torch having the wick 13, and the nipple 5, the burner 7 adapted to fit over said wick tube, and provided with the flattened flaring and pierced outer extremity, and with the opening 8, for the admission of air, substantially as shown and described. 8th. In a device of the character described, the combination, with a suitable gas supply, of a burner, having the body of generally cylindrical shape, and provided with a nozzle broader and flatter than the body, whereby a broad and relatively thin flame is produced, substantially as set forth. 9th. In a device of the character described, a burner having an approximately cylindrical body, and provided with a nose or nozzle widened and flattened, and having its end opening narrower at its centre than at its sides, substantially as and for the purpose specified.

No. 42,551. Ice Velocipede. (*Vélocipède-traîneau.*)

François Xavier Nadon, River Desert, and Dr. Joseph Comeau, Maniaki, all of Quebec, Canada, 11th April, 1893; 6 years.

Claim.—1st. In an ice velocipede, the combination with a frame having a runner pivoted at its rear end and a steering bar journalled in the front thereof, having a runner pivoted to its lower end and a handle bar secured to its upper end, of auxilliary runners carried one on either side of the front runner, substantially as set forth. 2nd. In an ice velocipede, the combination with the main frame carrying a runner at its rear end and a steering runner at its front, of a frame pivoted to the said main frame, a propelling wheel having a spiked periphery journalled at the rear of the said frame, a sprocket wheel secured on the axle of the said wheel, a sprocket wheel secured on the axle of the treadles, a driving chain connecting the said sprocket wheels, a guide roller carried in the front end of the said frame bearing on the upper part of the driving chain, and a guide roller secured by a spring arm to the said frame bearing on the under side of the said chain, substantially as set forth. 3rd. In an ice velocipede, the combination with a main frame carrying runners, suitable propelling gear, of the arms L, pivoted to the steering bar G, the clips *l*, the rods K, springs *k*, the upper ends of said rods passing through perforations in the handle bar and secured by set screws *m*, and the runners M, pivoted to the lower ends of the said rods K, substantially as set forth.

No. 42,552. Time Lock. (*Serrure à mouvement horaire.*)

Napoleon B. Rees, Eli L. Dale and Henry Zink, all of Lincoln, Kansas, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. The combination in a time lock, of a locking bolt fitted to slide in a frame, a latch to engage and stop the bolt, a clock upon the said frame, a rod fitted to lift the said latch, a lever communicating between the clock and lifting rod, and a spring rod fixed at one end to the frame and projecting at the other end into the path of the clock hand, and projecting midway into the path of the said lever, substantially as set forth.

No. 42,553. Process of Amalgamating Gold and Silver by Means of Mercury. (*Procédé pour amalgamer l'or et l'argent au moyen de mercure.*)

The Noble Mining and Milling Company, assignees of Louis S. Noble, all of New York, State of New York, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. The herein described process of treating ores containmg gold or silver, which consists in passing the pulp successively through a body or mass of atomized mercury to form an amalgam and adding hyposulphite of soda, substantially as and for the purpose set forth. 2nd. The herein described method of treating gold and silver amalgamated with atomized mercury, which consists in applying thereto hyposulphite of soda, substantially as described whereby the atomized amalgam will be coalesced and localized.

No. 42,554. Rotary Harrow. (*Herse rotative.*)

The I. C. Wyman Company, of Boston, Massachusetts, assignees of Halsey H. Monroe, Thomaston, Maine, all in the U.S.A., 11th April, 1893; 6 years.

Claim.—1st. A rotary harrow consisting of two side harrows *c*, the intermediate harrow *t* rearwardly arranged, and wheels *z* arranged on the opposite sides of the latter harrow, as set forth. 2nd. In a rotary harrow the furrow openers and seed dropping mechanism, combined with the side harrows *c* adapted to travel in the path of the furrow openers, and the intermediate harrow *t* adapted to operate in a path lying on a line between the harrows *c*, as set forth. 3rd. In a rotary harrow the side harrow *c*, combined with the rearward harrow s^1 arranged to operate in a path lying on a line between the side harrows, the said rearward harrow being vertically adjustable to regulate the depth of the working in the forward, as set forth. 4th. In a rotary harrow, the combination with the harrow *t*, of the cross beam *s*, the bolt *w*, nuts *v* on said bolt above and below said cross beam, and the roller or wheel *x* journalled in the lower end of the said bolt and bearing on the rim of the said harrow, as set forth. 5th. In a rotary harrow the side or forward harrows *c*, combined with the rear harrow constructed and arranged to carry a portion of the weight of the forward harrows, and to regulate the depth of working of the latter, as set forth. 6th. A rotary harrow consisting of the two side harrows *c*, the intermediate harrow, and the vertically adjustable rollers e^1, as set forth. 7th. A rotary harrow having a plough secured to the king bolt or hub upon which the harrow turns, as set forth. 8th. A rotary harrow having a vertically adjustable plough secured to the king bolt or hub upon which the harrow turns, as set forth.

No. 42,555. Grain Car. (*Char à grain.*)

Alonzo L. Whitcomb, Charles E. Castle and Harvey E. Dean, all of Great Bend, Kansas, U.S.A., 11th April, 1893; 6 years.

Claim.—The combination with a car provided at its end with an opening at the bottom, and having uprights and braces 7 and 8, and provided with an inner lining and having the outer siding, the vertical ways arranged at the side of the car, and vertically sliding door arranged to close the opening, and having its ends sliding in the ways and designed to be located between the siding and the lining, gearing for raising and lowering the door, and a pawl and ratchet for securing the door in its adjustment, substantially as described.

No. 42,556. Woven Pile Fabric. (*Tissu à poil.*)

Joseph Coley and William J. Hogg, both of Worcester, Massachusetts, U.S.A., 11th April, 1893; 6 years.

Claim.—A double faced pile fabric woven from an even number of frames of worsted warp, and having the same pattern on both sides, but each side having a different colouring, and consisting of two binding warps passing entirely through the floating worsted warps from top to bottom, and from bottom to top, and two sets of filling wefts, and worsted warps when selected appearing on coincident portions of both side of the fabric to form the loop or pile surface on each side of the fabric, and when unselected carried in the body of the fabric between the filling wefts, substantially as set forth.

No. 42,557. Sawing Machine. (*Scierie.*)

John H. Gateley, Janesville, Wisconsin, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In a circular sawing machine, the combination with a frame or table, of a shaft B, at the feed end of the table, extending nearly across the same and provided with a saw, a shaft B^1, shorter than the shaft B, provided with a saw out of line with the first saw, and a third shaft B^2, shorter than the shaft B^1, and provided with a saw out of line with the second saw, conveying chains working between the saws and between the sides of the table and the saws, means for imparting motion to the shaft B, and independent means for imparting motion from said shaft directly to the remaining shafts, substantially as shown and described. 2nd. In a circular sawing machine having a series of saws arranged out of line with one another, belting imparting motion to the first saw shaft, and means independent of such belting extending from said first shaft to the remaining saw shafts for imparting motion to the latter, substantially as shown and described. 3rd. In a circular sawing machine, the combination with a main frame, of a series of shafts of different lengths mounted therein, and a saw carried at the inner end of each of said shafts, the said shafts and their saws being located wholly at one side of the frame whereby an unobstructed passage is left between the inner ends of said shafts and the opposite side of the frame, substantially as shown and described. 4th. In a circular sawing machine, the combination with the table, of the series of saws arranged to act successively upon the stock, and the boarding or housing G, set up above the saws and extending from side to side and end to end of the table, substantially as shown and described.

No. 42,558. Elevator. (*Ascenseur.*)

Henry H. Day, Newton Centre, Massachusetts, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In an elevator, a car, operating cables, frames attached to shafts, doorways and to the car, mechanism in the elevator shaft and on the car, in combination with guide ways, guide rods, and cords connecting the mechanism with the guide rods to operate the cables, and stop the ascent or descent of the car, substantially as described and set forth. 2nd. The combination, in an elevator, of a car, suspended frames, vertically movable in guide ways, operating cables, vertical guide rods, spring actuated devices in the elevator, shaft and on the elevator car, supports to retain the spring devices in a compressed condition, slides, and cords connecting the slides with the guide rods to release the slides and supports to allow the spring devices to operate the cables to arrest the travel of the car when obstruction is met, as and for the purposes set forth.

No. 42,559. Reversing Gear for Steam Engines. (*Mécanisme de renversement du mouvement.*)

David Pitceathly, Fenelon Falls, Ontario, Canada, 11th April, 1893; 6 years.

Claim.—1st. A reversing gear for steam engines, consisting of the combination of a steam chest, steam ports from said steam chest

into the working cylinder, a valve to close said ports, a valve rod connected to said valve, an eccentric rod connected to the valve rod having a bifurcated end which encircles the eccentric wheel, the main shaft, an eccentric wheel mounted on the main shaft, a cam secured to the frame work of the engine, a traveller secured to the eccentric rod, said traveller working in said cam, said cam adapted to reverse the stroke of the eccentric rod, substantially as described. 2nd. A reversing gear for steam engines, consisting of the combination of a steam chest, steam ports from said steam chest into the working cylinder, a valve to close said ports, a valve rod connected to said valve, an eccentric rod connected to said valve, an eccentric wheel engaging with the bifurcated end, the frame work of the engine, a rocker bolt secured to the frame work of the engine, a cam mounted upon the rocker bolt, a traveller secured to the inner side of the eccentric rod, said traveller working in said cam, means for altering the position of said cam, said cam and traveller adapted to reverse the stroke of the eccentric rod, substantially as described.

No. 42,560. Mowing Machine. (*Faucheuse.*)

The William N. Whitely Co., assignee of William N. Whitely, all of Springfield, Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In a mowing machine, having two main driving wheels and a main axle connecting the same, a vibrating gear frame pivoted on said main axle and adapted to support the knife driving mechanism, a cutting apparatus hinged to the vibrating gear frame, and a finger bar lifting lever mounted upon said vibrating gear frame above the hinged joint of the cutting apparatus, said lever being adapted to elevate the cutting apparatus into a vertical position, a gear shifting device also mounted upon the vibrating gear frame, and means, substantially as described, for operating said gear shifting device by the movement of said lever, whereby said lifting lever is adapted to positively actuate said gear shifting device to disengage the mechanism which drives the knife when the cutting apparatus is raised to a height beyond the limit of the operation of the knife pitman and automatically re-engage said gearing, to cause the knife to operate when the finger bar is lowered to a position within the operative limits of said knife pitman, all the parts being constructed and arranged for joint operations, substantially as specified. 2nd. In a mowing machine, a vibrating gear frame pivoted to the main axle, which is supported by two main driving wheels, cutting apparatus hinged to the inner front corner of said gear frame, and a lead or grass wheel pivotally connected to the inner front cor of the vibrating gear frame in front of the cutting apparatus, and an operating lever connected with said wheel to raise and lower the front frame in reference thereto, and thus raise and lower the cutting apparatus hinged to said vibrating gear frame when in either a horizontal or vertical position, substantially as specified. 3rd. In a mowing machine, having two main driving wheels, and the main axle connected to the same, a vibrating gear frame hinged to said main axle, and a tongue or pole hinged to said gear frame, a cutting apparatus also hinged to said gear frame, a lifting lever mounted upon the vibrating gear frame above the hinge of the cutting apparatus and connected thereto, a shifting device for engaging and disengaging the mechanism which operates the cutters, said shifting device being also supported on the vibrating gear frame and independent of the hinged tongue or pole, and engaging projections between said lifting lever and shifting device, whereby the knife driving mechanism is automatically disengaged by the operation of said lifting lever, when the outer end of the cutting apparatus is lifted to a position as high as the knife pitman will operate, substantially as specified. 4th. In a mowing machine, having a hinged cutting apparatus and a lifting lever for operating said cutting apparatus and a lifting lever for operating said cutting apparatus about its hinged connection, a knife driving mechanism connected to said cutting apparatus, and a gear shifter to disconnect said cutting apparatus by the operation of said lifting lever, of a lock or stop adapted to permit a limited movement of said lever and cutting apparatus, said lock or stop being adapted to prevent a movement of said cutting apparatus beyond the operating limit of said knife driving mechanism, substantially as specified. 5th. In a mowing machine, having a hinged cutting apparatus and knife driving mechanism, a lifting lever for operating said cutting apparatus about this hinged connection, and a gear shifting device, adapted by a movement of said lifting lever, to automatically disengage said knife driving mechanism, and a movable stop or lock adapted to prevent a movement of said lifting lever to a point which will operate said shifting device by the revolution of said cutting apparatus, whereby said knife driving mechanism is prevented from accidental disengagement by the raising of said cutting apparatus, substantially as specified. 6th. In a mowing machine, a gear frame consisting of four principal parts, a tubular sleeve or box, which surrounds the main driving axle, a tubular frame, which surrounds the crank shaft, substantially at right angles to said axle, and an arm projecting forward from the main tubular box or sleeve, to which the cutting apparatus is attached, and an adjustable connection connecting the last two members together and form a brace or connection between the two, also adapted to serve as a guard or protection for the knife pitman, substantially as specified. 7th. In a mowing machine, a main frame having a forwardly projecting arm, depending brackets on said arm, each of said brackets being provided with bearings to support the cutting apparatus, an inner shoe on said cutting apparatus provided with projecting trunnions at the front and rear thereof to fit in the bearings on said brackets, one of said bearings being a solid bearing and the other a removable bearing, whereby a detachable hinged connection is secured between the frame and the cutting apparatus, substantially as specified. 8th. In a two wheeled mowing machine, a vibrating gear frame supported on the main axle, which extends between the supporting wheels, a cutting apparatus hinged to said vibrating gear frame, said cutting apparatus being provided with an outer shoe having a rearwardly extending portion with a supporting wheel journalled therein, said outer supporting wheel being arranged substantially in line with the main axle, substantially as and for the purpose specified. 9th. The combination, with the vibrating gear frame and a cutting apparatus hinged thereto, a lifting lever on said gear frame, driving mechanisms for operating the cutting knife also supported on said gear frame, a movable clutch forming a portion of said driving mechanisms, a spring actuated bell crank lever connected to said clutch, and a rock shaft connected to said bell crank lever, and a cam shaped portion on said lifting lever, adapted to contact with the movable part connected to said rock shaft, said cam shaped portion being adapted to produce a quick movement of said rock shaft which will disengage said clutch mechanism and hold the same out of engagement until the lifting lever is returned to its normal position, substantially as specified. 10th. In a mowing machine, a vibrating gear frame and a hinged cutting apparatus connected thereto, and driving mechanism for operating the cutting knife, and a lifting lever pivotally connected to said cutting apparatus, so that a movement of said lever will elevate said cutting apparatus about its hinged connection, a gear shifting device also supported on said vibrating frame and adapted to engage or disengage said knife driving mechanism, a connection from said gear shifting device to said lifting lever, and an intermediate operating device having an engaging projection, adapted to be operated by a cam shaped portion of said lifting lever, so as to produce at the desired time a rapid movement of said gear shifting device and hold the same during the further revolution of said lever, substantially as specified.

No. 42,561. Mowing Machine. (*Faucheuse.*)

The William N. Whitely Company, assignee of William N. Whitely, all of Springfield Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said vibrating frame, an intermediate pivoted lifting device on said tongue, and a two part connection from said frame to said lifting device, a pivoted hand lever operating concentrically with said intermediate connection, and means for holding said hand lever in different positions of adjustment, a pivoted foot lever connected to said intermediate connection, and an engaging projection on said hand lever, adapted to contact with said intermediate lifting device, so as to hold or move the same in one direction, substantially as specified. 2nd. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to the inner front corner of the vibrating frame, and around a shaft which transmits motion to said cutting apparatus, an adjusting lever mounted upon the tongue, to determine the cutting height of the cutting apparatus, and a two part connection from said adjusting lever to the vibrating frame adapted to permit an independent movement of said frame with reference to said lever, whereby the cutting apparatus may be adjusted to any desired height and still be free to rise independent of the adjusting lever, substantially as specified. 3rd. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, and an adjusting lever mounted on said tongue, an intermediate lifting device connected to the vibrating frame and adapted to contact with said adjusting lever, a foot lever also mounted on said tongue and connected to said intermediate lifting device independent of said adjusting lever, whereby the cutting height of said cutting apparatus may be adjusted by said adjusting lever, and at the same time permit an independent movement of the cutting apparatus by said foot lever, substantially as specified. 4th. In a mowing machine, a vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, an adjusting lever on said tongue, and an intermediate connecting device also on said tongue, adapted to contact with said adjusting lever, a two part connection from said intermediate connecting device to the frame, to permit an independent movement of said frame, and an auxiliary pivoted lever on said tongue connected to said intermediate connecting device, whereby the cutting apparatus may be raised by the auxiliary lever independent of the adjusting lever, but be limited by said adjusting lever when released by said auxiliary lever, substantially as specified. 5th. In a mowing machine, a main vibrating frame and a tongue hinged thereto, a cutting apparatus hinged to said frame, two pivoted levers on said tongue, and an intermediate lifting device adapted to be acted upon by each of said levers when moved in opposite directions, to produce an angular movement of said vibrating frame with reference to said tongue, and thus lift said cutting apparatus, and a loose connection between said intermediate device and said frame, to permit a movement of said cutting apparatus independent of either of said levers, substantially as specified. 6th. In a mowing machine, a cutting apparatus adapted to receive motion from a revolving crank and shaft supported in a suitable tube or bearing on the main frame, an inner shoe forming a part of said cutting apparatus, said shoe being provided in the rear of said crank with supporting bearings which surround said crank

shaft or its bearings and form a hinge connection for said cutting apparatus concentric with said crank shaft, to permit said cutting apparatus to be operated either in a horizontal or vertical position, said inner shoe being extended forwardly and upwardly from said crank and provided at its inner edge with an upturned portion which extends forwardly and upwardly from said crank to form an inclined guard or shield therefor, in any angular position of said cutting apparatus about its hinged connection, substantially as specified. 7th. In a mowing machine, a main frame and a cutting apparatus, a revolving crank and shaft supported in a suitable tube or bearing on the main frame, adapted to transmit motion to the cutting knife by a pitman connection from said crank, an inner shoe on said cutting apparatus having bearings which surround the crank shaft box, to form a hinged connection with the frame, said shoe being extended forwardly and upwardly to form a shield for said crank and pitman, and a carrying wheel arranged on the front of the projecting portion of said shoe, said wheel being located on the outer portion of the shoe, so that when the cutting apparatus is turned to an angular position the wheel will be protected by the formation of the shoe, substantially as specified. 8th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto concentrically with the shaft which transmits motion to said cutting apparatus, a lifting lever and its stand arranged on the forward corner of the vibrating frame, an inner shoe having encircling bearings to form the hinged connection of said cutting apparatus, which bearings are arranged in the front and rear of the lifting lever stand, a connection from said lifting lever to said shoe, and a spring operating against said lifting lever, substantially as and for the purpose specified. 9th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto, a lifting lever and its stand on said frame, and a connection from said lifting lever to said cutting apparatus, a connecting rod from said lifting lever extending through a spring supported in a loop connection on said frame, and a link connection from said frame having a perforated bearing for said connecting rod and adapted to limit the movement of said spring on said connecting rod, substantially as specified. 10th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto, a lifting lever and its stand on said frame, and a hinged connection from said lever to said cutting apparatus, a connecting rod attached at one end to said lever and provided with a head or shoulder to bear against a spring located on said bar, a loop on the main frame to support said spring, and a pivoted link connection on said frame provided with a perforated bearing seat to contact with the opposite end of said spring, said connecting bar being adapted to pass through said perforated bearing seat, substantially as specified. 11th. In a mowing machine, a vibrating frame supported by two main driving wheels, a tongue hinged thereto, a cutting apparatus hinged to said frame, the combined hand and foot levers mounted upon the hinged tongue and adapted to operate independently upon the forward part of the vibrating frame, one of said levers being adapted to adjust and hold the cutting apparatus to varying heights while the other is adapted to act independently thereof in raising the cutting apparatus, substantially as specified. 12th. In a mowing machine, a vibrating frame and a tongue hinged thereto, whiffletrees connected to said tongue, and a draft connection from the whiffletrees to the forward end of the vibrating frame, said whiffletrees and the draft connection being suspended from said tongue by a pivoted clevis device, substantially as specified. 13th. In a mowing machine, a vibrating frame and a tongue hinged thereto, a draft connection suspended from said tongue by a support consisting of a bifurcated connecting piece, a link from said connecting piece to said frame, and a U-shaped clevis pivoted to said tongue and to said connecting piece, substantially as specified. 14th. The combination with the main frame, the pivoted tongue and the whiffletrees, of a draft connection consisting essentially of a pivoted U-shaped piece h, the pivoted link connection h^2, having the eye h^3, and pivotally supported in said U-shaped supporting piece, substantially as specified.

No. 42,562. Refrigerator. (*Refrigérant*)

Alexander T. Ballantine, Cleveland, Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. A refrigerating apparatus comprising a refrigerating coil, a condenser, a refrigerant receptacle, and connecting pipes, combined with a compressing pump having cylinders and reciprocating pistons therein, by which the spent gas is taken from the coil, compressed and forced through the condenser and refrigerant receptacle, back to the coil, an oscillating arm with which the pistons are connected, and by which they are operated, a rock shaft on which the oscillating arm is secured, a hydraulic motor connected with the rock shaft, a reciprocating valve for such motor, and adjustable connections between the said valve and the rock shaft, by which the throw of the pump pistons may be regulated, so as to insure a complete stroke of each in order to expel all of the compressed gas, substantially as described. 2nd. In a refrigerator, a motor and a pump, in combination with a condensing chamber, a refrigerant receptacle and a condensing coil located in said chamber a refrigerating pipe arranged to discharge by gravity toward the pump, a feed pipe extending from the refrigerant receptacle to said refrigerating pipe, and a valve to admit the refrigerant located on a plane above the bottom of the pump, substantially as described. 3rd. In a refrigerator, a reciprocating pump to exhaust the refrigerating coil and condense the refrigerant, a condensing chamber, and a refrigerant receptacle therein, and a condensing coil discharging by gravity into the top of said receptacle, a refrigerating pipe arranged to discharge by gravity into the bottom of the said pump, a feed pipe from the refrigerant receptacle connected with the refrigerating pipe, and a controlling valve at the point of union between said pipes, substantially as described. 4th. In a refrigerator, a condensing chamber, and a condensing pipe and a refrigerant receiver exposed to the water in said chamber, in combination with a hydraulic motor, having a discharge passage into said chamber to utilize the waste or exhaust motor fluid for condensing and cooling purposes, substantially as described. 5th. In a refrigerator, a pump having a chamber in its bottom for the accumulation of gas and oil, a refrigerating pipe discharging by gravity into said chamber, and a condensing pipe on the pressure side of the pump, having a gravity discharge, in combination, with a receptacle into which said pipe empties, a condensing chamber enclosing said receptacle and condensing pipe, and a feed pipe with a valve connecting said receiver with the refrigerating pipe, substantially as described. 6th. In a refrigerating apparatus, a feed pipe and a refrigerating pipe, and a coupling uniting said pipes having two separate valves to control the flow of refrigerating agent from one pipe to the other, and a plunged opening in said coupling for supplying the refrigerating agent, substantially as described. 7th. A refrigerating apparatus comprising a refrigerating device, such as a coil of pipe, a refrigerant receptacle from which the refrigerant is forced by accumulated pressure therein into the refrigerating device, a condensing pump having a chamber below its pistons, into which chamber the spent gas from the refrigerating device is discharged, and whence it is taken by the pump and compressed, a condensing and cooling chamber above which the refrigerating device and the pump are arranged, and in which is submerged the refrigerant receptacle, a coiled pipe conveying the compressed gas from the pump through the condensing and cooling chamber into the refrigerant receptacle, and a hydraulic motor whose waste water discharge into the cooling and condensing chamber, substantially as described. 8th. An automatic refrigerating apparatus comprising a refrigerating device, such as a coil of pipe, a refrigerant receptacle from which the refrigerant is forced into the refrigerating device, a condensing pump connected with the refrigerating device and the refrigerant receptacle, a condensing and cooling chamber, and a hydraulic motor adapted to receive its supply of motor fluid from city mains or other source of water, the pressure of which is subject to periodical variation, and having the connections between its valve and piston, and the condensing pump constructed substantially as described to overcome a dead centre, and thereby cause the motor to run upon the restoration of pressure after such pressure has been diminished or cut off, thus automatically running the apparatus, substantially as described.

No. 42,563. Pipe. (*Pipe.*)

Luke Davis, assignee of Adolf C. Berger, both of Toronto, Ont., Canada, 11th April, 1893; 6 years.

Claim.—1st. In a combination tobacco smoking device, the nicotine bowl fitted in an adapted chamber in the under side of the holder and enclosing the lower end of the piercing point, substantially as shown and described. 2nd. In a combination tobacco smoking device, the tobacco bowl having a central opening in its bottom and packing around the same to fit on the piercing point, substantially as shown and described. 3rd. In a combination tobacco smoking device, the combination of the nicotine bowl fitted in a chamber in the under side of the holder, and the tobacco bowl adapted to fit over the piercing point and packed as specified, substantially as shown and set forth.

No. 42,564. Method of Cooling the Iron in Transformers, etc. (*Méthode de refroidir les transformeurs, etc.*)

Henry A. Rowland, Baltimore, Maryland, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In electric apparatus of the character described, the combination with sheets of laminated iron subject to varying magnetic influences of vessels containing fluid arranged in juxtaposition to said sheets and parallel to the motion of the lines of force, for the purpose set forth. 2nd. In electric apparatus of the character described, the combination with a plurality of sheets of laminated iron subjected to varying magnetic influences, of vessels containing fluid arranged alternately with said sheets of iron and parallel to the motion of the lines of force, substantially as and for the purposes described. 3rd. In electric apparatus of the character described, the combination with a plurality of sheets of laminated iron subjected to varying magnetic influences, of vessels containing fluid arranged alternately with said sheets of iron and parallel to the motion of the lines of force, and means for keeping a continuous flow of fluid through the said vessels, substantially as and for the purposes described.

No. 42,565. Method of Cooling Transformers, Dynamos, &c. (*Méthode de refroidir les transformeurs, dynamos, etc.*

Henry A. Rowland, Baltimore, Maryland, U. S. A., 12th April, 1893; 6 years.

Claim.—1st. In electric devices of the character described, the method of cooling the part or parts likely to become heated, which consists in placing in juxtaposition to the said part or parts a volatile

liquid, which by boiling carries off the heat of the said part or parts. 2nd. In electric devices of the character described, the method of cooling the part or parts likely to become heated, which consists in immersing the said part or parts in a volatile fluid, which by boiling carries off the heat, substantially as described. 3rd. In electric devices of the character described, the method of cooling the part or parts likely to become heated, which consists in placing in juxtaposition to said part or parts a volatile fluid which by boiling carries off the heat, and in reducing the pressure on said volatile fluid, substantially as and for the purposes described. 4th. In electric devices of the character described, the method of cooling the part or parts likely to become heated, which consists in immersing the said part or parts in a volatile fluid, and in reducing the pressure on said volatile fluid, substantially as and for the purposes described. 5th. A device for cooling transformers comprising a closed vessel, a volatile liquid partly filling said vessel, and a transformer immersed in said volatile liquid, substantially as described. 6th. A device for cooling transformers comprising a closed vessel, a volatile liquid partly filling said vessel, a transformer immersed in said volatile liquid, and a condenser connected at either end to said closed vessel, substantially as described. 7th. A device for cooling transformers comprising a closed vessel, a volatile liquid partly filling said vessel, and a transformer immersed in said volatile liquid, and means for reducing the pressure in said vessel, substantially as and for the purposes described. 8th. A vessel for cooling transformers, comprising a closed vessel, a volatile liquid, partly filling said vessel, a transformer immersed in said volatile liquid, a condenser connected at either end to said closed vessel, and means for reducing the pressure in said vessel, substantially as and for the purposes described.

No. 42,566. Method of Cooling Electrical Conductors.

(*Méthode de refroidir les conducteurs électriques.*)

Henry A. Rowland, Baltimore, Maryland, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. The method of cooling hollow conductors carrying electric currents, which consists in passing a conducting fluid through said conductors, and in breaking the electrical continuity of said fluid after it leaves said conductor. 2nd. The method of cooling hollow conductors carrying electric currents, which consists in passing water through said conductors, and in breaking the electrical continuity of said water after it leaves said conductor. 3rd. The method of cooling hollow conductors carrying electric currents, which consists in passing a conducting fluid through said conductors, and in breaking the electrical continuity of said fluid before it reaches and after it leaves said conductor, substantially as and for the purpose described. 4th. The method of cooling hollow conductors carrying electric currents which consists in passing water through said conductors, and in breaking the electrical continuity of said water before it reaches and after it leaves said conductor, substantially as and for the purposes described. 5th. The combination of a hollow conductor carrying electric currents, a conducting fluid passing therethrough, and means for separating said fluid into parts which are insulated from each other, substantially as and for the purposes described. 6th. The combination of a hollow conductor adapted to carry large electric currents, a conducting fluid passing through said conductor, and means for breaking the electrical continuity of said fluid after it leaves said conductor, substantially as described. 7th. The combination of a hollow conductor adapted to carry large electric currents, a conducting fluid passing through said conductor, and means for breaking the electrical continuity of said fluid before it reaches and after it leaves said conductor, substantially as and for the purposes described. 8th. In a transformer, the combination with the iron core, of a coil mounted on said core composed of a hollow conductor, a conducting fluid passing through said hollow conductor, and means for separating said fluid after it leaves said conductor into parts insulated from each other. 9th. In a transformer, the combination with the iron core, of a coil mounted on said core composed of a hollow conductor, a conducting fluid passing through said hollow conductor, and means for separating said fluid before it reaches and after it leaves said conductor into parts insulated from each other. 10th. In a transformer, the combination of coils consisting of a hollow conductor, and a fluid passing therethrough, substantially as and for the purposes described.

No. 42,567. Valve Gear. (*Garniture de soupape.*)

Charles F. Littlejohn, Bridgeport, Connecticut, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In a machine of the character described, the combination with the main shaft, of a grooved ring hung thereon, means for changing the plane of rotation of the ring, and a connection, substantially as described, between said ring and the valve, whereby the position of the ring will determine the throw of the valve, substantially as described. 2nd. The combination, with the cylinder and steam chest, having suitable ports, of a rocker valve mounted in the steam chest, a shaft whereon said valve is borne and whereby it is actuated, a grooved ring pivoted on the main shaft, a connection between the valve shaft and the ring, and means, as described, for varying the plane of rotation of said ring, substantially as specified. 3rd. In a machine of the character described, the shaft 13, bearing a hub and a grooved ring hung on gimbals to said hub, in combination with a rock shaft actuated by said grooved ring, a connection between said rock shaft and the valve and means, as described, whereby the plane of rotation of the grooved ring may be controlled and varied. 4th. In a machine of the character described, the shaft 13, the hub mounted thereon, and a ring provided with a peripheral groove and secured to said hub by a gimbal connection, in combination with the rock shaft 16, actuated from the ring, the valve and suitable connection between it and the rock shaft, a sliding hub splined on the shaft 13, and connected to the ring, and an operating lever and means for connecting it with the splined hub, the whole arranged substantially as described.

No. 42,568. Hold Back for Vehicles.

(*Ragot de limonière pour voitures.*)

Edward P. Parker, Archdale, North Carolina, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In a breeching attachment, a spring actuated cam lever attachable to the breeching and adapted to be forced against the bottom of the thill by the pull upon the breeching, in combination with a fastening strap, substantially as described. 2nd. The herein described breeching attachment, provided with a binding cam lever, and means for fastening it to the thill, substantially as described. 3rd. The herein described breeching attachment, provided with a spring actuated cam lever in combination with a binding strap, substantially as described. 4th. In a breeching attachment, the combination with a loop provided with a spindle, a cam lever fulcrumed on the spindle, said cam lever having a bar to which the breeching strap is attachable, a button on the end of the spindle and a fastening strap adapted to embrace the thill, all arranged and adapted to operate in the manner and for the purpose set forth. 5th. In a hold back, the combination with a spindle, of a spring coiled around said spindle, a cam lever on said spindle actuated by the coil spring and a strap for holding said spindle in place, substantially as described. 6th. In a hold back, the combination with a spindle provided with a button at one end, of a coiled spring surrounding said spindle, a cam lever on said spindle, one end of said spring being attached to the spindle and the other bearing against the cam lever, a strap for securing the spindle in place, one end of said strap being provided with adjusting holes whereby it is adapted to fit various sized thills, and a stop pin on the side of the cam, substantially as and for the purpose set forth.

No. 42,569. Boiler. (*Chaudière.*)

Harry A. R. Dietrich, South Bethlehem, Pennsylvania, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In a boiler, the combination, with a series of sections capable of being connected and disconnected, each section complete in itself, the sections being hollowed to form water chambers and provided with depressions in their side faces, which depressions form when arranged oppositely, vertical combustion chambers, communicating directly with the fire pot, ribs located around the margins of the sides, and of the sections extending upward near their centres, said sections being further provided with a section of a fire pot located between the inner ribs, sections of smoke flues located between the inner and outer ribs, and a series of aligned tubes extending transversely through from face to face, placing the depressed portions of the side faces in connection, one set of said tubes being adapted to receive apertured pipes through which air may be introduced or coerced, substantially as set forth. 2nd. In a boiler, the combination with the vertical hollow water holding sections, having depressions a, and a^1, which depressions, when arranged oppositely, from vertical combustion chambers communicating with the fire pot, said sections having a series of horizontal transverse and aligned tubes, of the perforated air inlet tube 17, inserted in said aligned tubes, and made of considerably smaller diameter, and the bushings 27, supplied as shown and described.

No. 42,570. Boot and Shoe. (*Chaussure.*)

Jonathan O. Trotter, St. Catharines, Ontario, Canada, 12th April, 1893; 6 years.

Claim.—As an improved article of manufacture, a boot or shoe consisting of an outer casing of leather scraped internally and painted with rubber cement, an inner lining of rubber secured to the leather by the rubber cement, and to a felt or similar inner casing by its own adhesiveness, substantially as and for the purpose specified.

No. 42,571. Stove and Furnace. (*Poêle et fournaise.*)

Samuel P. Hutchison, Philadelphia, Pennsylvania, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In a furnace, the shell 4, ash pit 1, grate 11, dome 20, staves 18, perforated grate bearing 3, and adjustable ring 9, in combination with the perforated tiles 16 and 17, arranged to operate substantially as set forth. 2nd. In a furnace, the ash pit 1, provided with air tight fitting doors, and the perforated grate bearing 3, and tubular perforated grate 11, in combination with the grooved staves 18, arranged to operate substantially as set forth. 3rd. In a furnace, the air tight shell 4, staves 18, and means of admitting and regulating air thereto from the ash pit 1, in combination with the

tubes 16 and 17, arranged to operate, substantially as set forth. 4th. In a furnace, the air tight shell 4, perforated arch 16, staves 18, and means of admitting air thereto from the ash pit 1, in combination with grate 11 and perforated dome 20, arranged to operate substantially as set forth.

No. 42,572. Wire Barbing Machine.

(*Machine à barbeler le fil.*)

John S. Reid, No. 8 Victoria Street, Westminster, England, 12th April, 1893; 6 years.

Claim.—1st. In wire barbing machines, the combination of mechanism for intermittently drawing lengths of an unbarbed main wire or wires into the machine, mechanism for simultaneously forming two or more barbs upon such main wire or wires, and mechanism for alternately bringing such main wire or wires into and out of the range of operation of the barbing mechanism. 2nd. In machines such as are referred to in the first claim, a flyer which twists together and spools the main wires after they they have been barbed. 3rd. The feed pulley A^2, and mechanism connected therewith, substantially as described. 4th. The combination of the slotted blocks or guides such as G, with the plates B and D, with or without the plates C, substantially as described. 5th. The blocks G, substantially as described and shown in the drawings. 6th. The combination of blocks slotted for the passage of the main wire or wires, diagonal holes through such blocks serving as guides for the barbing wires, cutting blades or surfaces fixed in, or forming part of the blocks, and moving blades working against the faces of the blocks, substantially as described. 7th. The barb twisting cylinder F, substantially as described. 8th. The means for driving and locking the cylinders F, substantially as described with reference to figures 20 to 24. 9th. The barbing mechanism, substantially as described and shown in the drawings. 10th. The combination of the flyer, the spool carried by the flyer and the brake for periodically retarding the revolution of the spool relatively to the flyer, substantially as described. 11th. The mechanism for periodically tightening the brake strap of the spool, substantially as described. 12th. The mechanism for causing the carriage T to reciprocate and lay the barbed wire on the spool, substantially as described. 13th. The spooling and twisting mechanism, substantially as described and shown in the drawings. 14th. The rolls M and M^1, situated between the barbing and twisting mechanism for preventing the twisting of the main wires behind them. 15th. Wire barbing machines, substantially as described and shown in the drawings.

No. 42,573. Pew Back. (*Dos de banc d'église.*)

Morris Lancaster, Northville, Michigan, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. The process herein described, of constructing built up work for seating, consisting of preparing a board A of desired length, breadth and thickness, smoothing the surfaces of said board in its normal flat condition, then resawing said board to form counterpart exterior boards A^1, A^2, then applying a thin layer or veneer between the undressed surfaces of said counterpart exterior boards, and compressing said exterior boards and the intermediate layer by desired forms or moulds to form seating of uniform thickness, substantially as described. 2nd. The process herein described, of constructing built up work for seating, consisting of preparing a board of desired length, breadth and thickness, smoothing said board in its normal flat condition, then resawing said board to form counterpart exterior boards A^1, A^2, then cementing between the undressed inner surfaces of the boards A^1, A^2, a thin rotary veneer, having its grain extended across that of the exterior boards, compressing said exterior boards and said veneer together by desired forms or moulds while the cement is green to form seating of uniform thickness, and then trimming the edges of said seating, substantially as described. 3rd. The seating herein described, consisting of the boards A^1 and A^2, having in combination an interposed veneer, substantially as described.

No. 42,574. Garment Hook. (*Agrafe de vêtement.*)

Frank E. De Long, Philadelphia, Pennsylvania, U. S. A., 12th April, 1893; 6 years.

Claim.—1st. A hook formed, substantially as set forth, of a single piece of wire bent to form a bill, a shank and means for attachment to a garment, and a member continuous of said wire, lying between the shank and bill, and forming a keeper for the eye and a guard for the fabric, substantially as set forth. 2nd. A hook provided with a member constituting a fabric guard, a portion of which member is extended from the region of the eye engaging bends in the direction of the apex of the bill, and in a plane intermediate of the planes occupied by the shank, and bill members and below the path traversed by the eye, substantially as and for the purposes set forth. 3rd. A hook provided with a member constituting a fabric guard, a portion of which is extended from the region of the eye engaging bends in the direction of the apex of the bill in a plane intermediate of the planes occupied by the shank, and bill members and below the path traversed by the eye, and which is bellied towards the bill, substantially as and for the purposes set forth. 4th. A hook provided with a member constituting a combined fabric guard, and spring keeper, a portion of which member is extended from the region of the eye engaging bends in the direction of the apex of the bill, and in a plane intermediate of the planes occupied by the shank and bill members and below the path traversed by the eye, and which is extended beyond the apex of the bill, substantially as and for the purposes set forth. 5th. A hook provided with a member constituting a combined fabric guard and spring keeper, which extends in the form of bars along the shank, which embodies return bends in the vicinity of the eye engaging bends, and which is extended in a plane intermediate of the planes of the shank and bill and is bellied outward toward said bill, substantially as set forth.

No. 42,575. Garment Hook. (*Agrafe de vêtement.*)

Frank E. De Long, Philadelphia, Pennsylvania, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. A hook formed, substantially as set forth, of a single piece of wire bent to form a bill, a shank, thread eyes, and the oppositely disposed outwardly bellied inwardly compressible spring guard bars hereinbefore described. 2nd. A hook formed of a single piece of wire bent to form a shank and a bill, and a portion of which is extended from the region of the eye engaging bends along the bill and is bellied laterally away from said bill, substantially as set forth. 3rd. A hook formed of a single piece of wire bent to form a shank and a bill, and a portion of which is extended from the region of the eye engaging bends along the bill and is bellied laterally away from said bill on each side thereof, substantially as set forth. 4th. A hook formed of a single piece of wire bent to form a shank and a bill, and portions of which wire are extended along the shank to the region of the eye engaging bends, are curved upward in the vicinity of said bends, are extended along the bill, and are laterally outward one on each side of said bill, substantially as set forth. 5th. A hook formed of a single piece of wire bent to form a shank and a bill, and portions of which wire are extended along the shank to the region of the eye engaging bends, are curved upward in the vicinity of said bends, are extended along the bill, are bellied laterally outward one on each side of said bill, and are formed with return bends, substantially as set forth.

No. 42,576. Garment Hook. (*Agrafe de vêtement.*)

Frank E. De Long, Phliadelphia, Pennsylvania, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. A hook formed, substantially as set forth, of a single piece of wire bent to form a bill, a shank, thread eyes, and the oppositely disposed, outwardly expansible eye detaining spring keepers, hereinbefore described. 2nd. A hook for garments, having the usual bill, shank, and thread eyes, and having the wire forming the eye extended substantially parallel with and adjacent to the bill, and its outer portion curved and adapted to be deflected away from the bill, substantially as and for the purposes set forth. 3rd. A hook provided with two members structurally independent of the bill but existing in close proximity to the respective sides of it, curved at their outer portions to diverge from the bill, and free to be deflected away from it, substantially as and for the purposes set forth. 4th. A hook formed of a piece of wire bent to form a shank and a bill, portions of which wire extend along the shank, at a point between the eye engaging bends and the bill apex are curved upward and extended along the outside of the bill, and at their outer portions are bent away therefrom, substantially as and for the purposes set forth.

No. 42,577. Coffee Pot. (*Cafetière.*)

Francis H. Abell, Grand Crossing, Illinois, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. A coffee pot with closed spout and open steam pipe, in combination with a condenser to said steam pipe, substantially as specified. 2nd. A coffee pot provided with a closed spout, a grooved neck with openings at each end of said groove, in combination with a condenser in said neck, substantially as specified. 3rd. A coffee pot with a closed spout, a groved conical neck, with openings at each end of said groove, in combination with a condenser, fitting into said neck, substantially as specified. 4th. A coffee pot with a closed spout, a neck with a groove, with ends open, in combination with a covered condenser, substantially as specified. 5th. A coffee pot with a spout having a cover and a large removable strainer at its lower end, affording a chamber between it and the pot, and a grooved neck with openings at each end, in combination with a condenser, in said neck, substantially as specified.

No. 42,578. Brick Kiln. (*Four à brique.*)

James Henney, Cloverport, Kentucky, U.S.A., 12th April, 1893; 6 years.

Claim—A brick kiln, of the character described, consisting of an outer wall within which is arranged a series of furnaces in the sides and ends, a series of chimneys interposed between the furnaces, a series of intermediate transverse flues connected at their opposite ends with the chimneys, flues at the end of the kiln, each having an intermediate transverse portion and opposite diagonal extensions connecting with the corner chimneys of the kiln, and a flash wall extending around the interior sides of the kiln, between which wall and kiln the furnaces communicate.

No. 42,579. Heating Apparatus for Buildings.

(*Appareil de chauffage pour édifices.*)

Quimby N. Evans, Brooklyn, New York, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. A heating system for buildings, consisting of a liquid circuit, two successive heaters applied to said circuit, to heat the liquid therein, an exhaust pipe conducting exhaust steam to heat one of said heaters, and a live steam pipe conducting live steam to heat the other heater. 2nd. A heating system for buildings, consisting of a liquid circuit, an exhaust steam heater applied to said circuit and adapted to heat the same by exhaust steam, and a supplemental live steam heater in operative contact with said circuit, with a valve for controlling the admission of live steam thereto, whereby the exhaust steam heater may be used for heating said circuit in ordinarily cool weather, and steam may be turned on to said supplemental heater for augmenting the heat of said circuit in very cold weather. 3rd. A heating system for buildings, consisting of a liquid circuit, an exhaust steam heater in operative contact therewith, whereby the circuit may be heated in ordinarily cool weather by exhaust steam through the medium of said heater, means for cutting off the heat of said exhaust steam from said circuit, when the building is sufficiently heated, a supplemental heater applied to said circuit, and means for controlling the admission of live steam to heat said supplemental heater, whereby in very cold weather the heat of said circuit may be augmented by introducing live steam to said supplemental heater. 4th. A heating system for buildings, consisting of a liquid circuit, two successive heaters applied to said circuit to heat the liquid therein, an exhaust steam pipe conducting exhaust steam to heat one of said heaters, a live steam pipe conducting live steam to heat the other heater, a valve for controlling the supply of steam to the latter heater and a shunt of said liquid circuit around said exhaust steam heater, and valves for controlling the flow through said shunt or said latter heater, whereby the heating of the circuit by either heater can be controlled. 5th. A heating system for buildings, consisting of a liquid circuit, two successive heaters applied to said circuit to heat the liquid therein, a live steam pipe supplying one of said heaters, a thermostat arranged to be acted on by external temperature, and a valve in said steam pipe actuated from said thermostat and adapted to admit steam to said heater only when the external temperature falls below a predetermined degree, whereby said circuit is automatically heated by only one of said heaters during mild weather and by both of them in the coldest weather. 6th. A heating system for buildings, consisting of a liquid circuit, two successive heaters applied thereto, one heated by exhaust and the other by live steam, a shunt in said circuit around the exhaust steam heater, valves for directing the flow through the heater or through the shunt, a valve for controlling the admission of live steam to heat the live steam heater, electrically actuated means for operating said valves, and one or more thermostats within the building in circuit connection within said means, the whole so connected and operating that when the temperature affecting the rheostats becomes too low the liquid is directed through the exhaust steam heater and the said steam admission valve to the live steam heater is opened, and when said temperature becomes too high said valve is closed and the liquid is directed through the shunt around the exhaust steam heater. 7th. A heating system for buildings, consisting of a liquid circuit, two successive heaters applied thereto, one heated by exhaust and the other by live steam, a shunt in said circuit around the exhaust steam heater, valves for directing the flow through the heater or through the shunt, two valves for shutting off the admission of steam to the live steam heater, a thermostat arranged to be acted on by external temperature, another thermostat arranged to be acted on by internal temperature, and electric means for operating the respective live steam valves connected to and controlled by the respective thermostats, whereby live steam is admitted only when both the external and internal temperatures fall below the predetermined degrees.

No. 42,580. Device for Communicating Motion.

(*Appareil pour communiquer le mouvement,*)

Louis Warfield, Detroit, Michigan, U.S.A., 12th April 1893; 6 years.

Claim.—1st. The combination, with a shaft of a casing surrounding the same, and having one or more bearings formed on or secured to it, means for uniting the casing and shaft, so that they will turn together while free to change their angular position, and a frame secured to the casing bearing or bearings. 2nd. The combination, with a shaft of a casing surrounding the same and having bearings, through one or both of which the shaft extends, means for uniting the casing and shaft so that they will turn together while free to change their angular position, a driving wheel secured to the casing, and a frame secured to the bearings. 3rd. The combination, with a shaft of a casing surrounding the same and having bearings, through one or both of which the shaft extends, means for uniting the casing and shaft so that they will turn together while free to change their angular positions, a driving wheel secured to the casing, a frame secured to the casing bearings, and power transmitting mechanism supported on said frame and operatively connected with the casing gear. 4th. The combination, with a shaft B of a casing having hollow journals through which said shaft extends, means for uniting the casing and shaft between the bearings so that they will turn together though free to change their angular positions, a frame G secured to the bearings of the casing, an electric motor supported on the frame, and means for driving the casing from the motor also supported on the frame. 5th. The combination, with a carriage of two axles B B, casings having hollow bearings secured to each axle by a universal joint as described, a frame G secured to the bearings of the two casings, a motor supported upon the frame, and means for driving the casings from the said motor also supported on the frame. 6th. The combination, with a carriage of two axles B B, casings having hollow journals secured to each axle by a universal joint as described, a frame G secured to the bearings of the two casings, a motor supported upon the frame, a longitudinal driving shaft H journalled in the frame G, and means for operatively connecting said shaft with the casings. 7th. The combination, with a casing having hollow bearings of a shaft passing through said bearings, bearing pins D^1 D^1 secured to the shaft and projecting on opposite sides thereof, an annulus D^2 journalled on said pins and pivotally connected with the casing by pins D^3 D^3 arranged in a line transverse to the line of pins D^1 D^1, a gear wheel secured to the casing bearings, and driving mechanism supported on the frame and in operative connection with the casing gearing.

No. 42,581. Lunch Box. (*Boîte à collation.*)

Jennie P. Duval, Richmond, Missouri, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. A lunch box consisting of a body portion having on its bottom suitable feet and having in its corners suitable vessel compartments and having a set of upper and lower compartments separated by the horizontal diaphragm or partition, suitable netted perforations in the bottom of the body portion and suitable netted perforations in the horizontal diaphragm or partition, and a suitable cover adapted to fit over said body portion and secured thereto in any suitable manner, said cover also being provided in its top with suitable netted perforations, thereby permitting a circulation of air to pass from beneath the box out through the top. 2nd. A lunch box consisting of a body portion having attached to each of its outer four sides flaps 2, said flaps hinged at their lower edges to the body of the box and the perpendicular edges of said flaps connected by the strips of fabric 3, to the body of the box, thereby forming pockets between said flaps and box, and a suitable top adapted to fit over the body of the box and being secured thereto in any suitable manner.

No. 42,582. Pea Cutting Attachment for Harvesters.

(*Attache pour moissonneuses à récolter les pois.*)

William Cosgrove, Hathaway, Quebec, Canada, 12th April, 1893; 6 years.

Claim.—1st. The combination of small wheel E to shaft with cranks to give withdrawing or proceeding motion to raisors A, substantially as and for the purpose hereinbefore set forth. 2nd. The improved raisor A having forked end to add to its strength, reduce vibration, act as a bed for grain passing over shaft and keep forked raisors in place, substantially as and for the purpose hereinbefore set forth. 3rd. The tension having lever so as to raise or lower cutter bar and to stop motion of wheel cranks and raisors, where motion is not desired, substantially as and for the purpose hereinbefore described and set forth.

No. 42,583. Composition for Melting Ice and Snow.

(*Composition pour fondre la glace et la neige.*)

John W. Hallman, Toronto, Ontario, Canada, 12th April, 1893; 6 years.

Claim.—1st. The herein described composition of matter to be used for the removal of ice and snow by melting the same, consisting of water, chloride of sodium, acetic acid, and hydrochloric acid in the proportions specified and provided.

No. 42,584. Door Lock. (*Serrure de portes.*)

Josef Cathrein, Innsbruck, Austria, 12th April, 1893; 6 years.

Claim.—1st. A door lock to be opened from any given point of the room consisting of the lever B, with bolt C, and weight or spring D, cord E and weight F, substantially as described and shown.

No. 42,585. Jar. (*Cruche.*)

George H. Farrar, Iberville, Quebec, Canada, 12th April, 1893; 6 years.

Claim.—1st. In jars, the encircling band or wire W, inasmuch as it has the loops *l*, *l*, L, and inasmuch as it is used to fasten the spring S, all substantially and for the purpose hereinbefore set forth. 2nd. The spring S, single or double of either shape, substantially as described and for the purpose set forth. 3rd. The locking device D, substantially as and for the purpose hereinbefore set forth. 4th. In sealed jars, the rubber *r*, enveloping the edge or rim of the cover, substantially as shown and for the purpose hereinbefore set forth.

No. 42,586. Feeding Attachment for Threshing Machines. (*Appareil d'alimentation pour machines à battre.*)

Charles Quintus and Paul Quintus, both of Garner, Iowa, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. In a device of the class described, the combination with a feed table, of a hinged portion T, having an endless conveyor actuated by suitable mechanism, and sliding bolts t^1, operated by handles t^3, and connecting rods t^2, substantially as described. 2nd. In a device of the class described, the combination of a suitable frame with the rods L, rotated by suitable mechanism having cranks *l*, adapted to actuate the rakes, the guides P, cross bar O, rods W, connecting rods Q, and adapted to be manipulated by a lever r^1, substantially as described. 3rd. The combination of the frame C, having standards *c*, and braces *a*, with the feed table A, having legs F, pivotally secured thereto, and also adapted to be parallel to the same, the standards a^1, the upper ends of which form a loose joint with the braces *a*, and suitable hooks adapted to secure the table A to the rest of the machine when in operative position, substantially as described.

No. 42,587. Mowing Machine. (*Faucheuse.*)

Thomas S. Brown, Poughkeepsie, New York, U. S. A., 13th April, 1893; 6 years.

Claim.—1st. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a seat pivoted upon the main frame, and connective mechanism through which the weight of the driver is utilized to balance the finger bar, and maintain the latter in a normal position, substantially as set forth. 2nd. In a mowing machine, in combination, a main frame, a hingedly connected coupling frame and finger bar, a lifting chain or link secured to one of said connected devices, and adapted to lift the finger bar, substantially as set forth. 3rd. In a mowing machine, in combination, a main frame, a hingedly connected coupling frame and finger bar, a lifting chain or link connected to one of said connected devices, and means for retaining the finger bar in a normal position while it is being lifted, substantially as set forth. 4th. In a mowing machine, in combination, with coupling frame and finger bar connected thereto, as a means for maintaining the bar level while both it and the coupling frame are being elevated, a projection such as the gag lug on one of said devices, a member such as the gag lever on the other of said devices, a lifting chain or link connected with said gag lever, and means for exercising traction upon the same, substantially as set forth. 5th. In a mowing machine, in combination, the main frame, the coupling frame, the finger bar, the gag lug, the gag lever bearing thereon, and a lifting device connected with the gag lever at such point that traction exerted upon it tends to elevate both finger bar and coupling frame, substantially as set forth. 6th. In a mowing machine, in combination, the main frame, the coupling frame, the finger bar, the gag lug projecting from the finger bar, the gag lever pivotally mounted on the coupling frame, and bearing on said lug, the lifting device or chain connected with the gag lever at such point that traction exerted upon it tends to elevate the coupling frame and finger bar alike, a seat free for rocking or tilting movement, and a mechanical connection between said seat and lifting chain, substantially as set forth. 7th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a seat pivoted to the main frame, and a train of levers and links intermediate between the pivoted seat and the inner end of the finger bar, substantially as set forth. 8th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a seat pivoted to the main frame, a train of levers and links intermediate between the pivoted seat and the inner end of the finger bar, and lifting hand lever operative in connection with said train, substantially as set forth. 9th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a seat and lever seat support, a rock shaft to which said seat support is affixed, a rocker, a link, a bell crank lever, a chain, a gag lever, and a gag lug upon the finger bar, substantially as set forth. 10th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a seat and lever seat support, a rock shaft to which said seat support is affixed, a rocker, a link, a bell crank lever, a chain, a gag lever, a gag lug upon the finger bar, and a lifting hand lever and lifting chain connected with the gag lever, substantially as set forth. 11th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a gag lever pivoted to the coupling frame, a gag lug upon the finger bar, a lifting hand lever pivoted upon the tongue or frame and equipped with a chain adapted to be connected with either the gag lever or with the coupling frame, substantially as set forth. 12th. In a mower, in combination, a main frame, a coupling frame, a finger bar, a gag lever pivoted to the coupling frame, a gag lug upon the finger bar, a lifting hand lever pivoted upon the tongue or frame and equipped with a chain adapted to be connected either with the gag lever or with the coupling frame, and a foot lever provided with a counter arm adapted to effect the initial elevation of the lifting hand, substantially as set forth. 13th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a gag lever pivoted on the coupling frame, a gag lug on the inner end of the finger bar, a seat pivoted with respect to the main frame and a train of levers and links intermediate between and connective of the pivot of the seat, and the gag lever, substantially as set forth. 14th. In a mowing machine, in combination, a main frame, a coupling frame, a finger bar, a gag lever pivoted on the coupling frame, a gag lug on the inner end of the finger bar, a seat pivoted with respect to the main frame, a train of levers and links intermediate between and connective of the pivot of the seat and the gag lever, and a lifting hand lever pivoted upon the main frame and provided with a lifting chain adapted to be connected with either the coupling frame or the gag lever, substantially as set forth. 15th. In a mowing machine, in combination, a coupling frame, a finger bar joined thereto, a gag lug upon the inner end of the finger bar, projecting inwardly beyond the joint towards the coupling frame, and a gag lever pivoted upon the coupling frame, one extremity of which bears upon the gag lug, and is adapted when its other extremity is elevated to depress the gag lug and tilt the outer end of the finger bar upwardly with relation to its joint with the coupling frame, substantially as set forth. 16th. In a mowing machine, in combination, a coupling frame, a finger bar, jointed to said frame, and a lug upon the inner end of the finger bar beyond its joint adapted when the outer end of the bar is elevated to encounter the coupling frame and limit the elevation of the outer end of the finger bar, so as to form a stop to the joint between said frame and bar, substantially as set forth.

No. 42,588. Tube. (*Tube.*)

Edwin T. Greenfield and Junius Nagel, both of New York, State of New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. As a new article of manufacture, a compound tube comprising a formed base of two or more thicknesses of a porous fibrous material and a filling of bituminous material or compound combined with said formed base throughout its mass, substantially as specified. 2nd. As a new article of manufacture, a compound tube having a formed base of two or more thicknesses of paper and a filling of a bituminous compound combined with said base throughout its mass, substantially as specified.

No. 42,589. Boiler. (*Chaudière.*)

Alfred Catchpole, Geneva, New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. In combination with the fire box, a plurality of water compartments disposed side by side transversely over the fire box and with radial fire passages between said compartments, a shell inclosing the water compartments and forming a combustion chamber around the exterior thereof, and one or more flues horizontally through each of the water compartments and separated from those of the adjacent compartments and communicating with the fire box and combustion chamber by means of the radial fire passages between the water compartments, substantially as set forth and shown. 2nd. In combination with the fire box, a plurality of water compartments placed side by side and across the top of the fire box and with radial fire passages between the compartments and having their peripheral faces corrugated, water connections between said water compartments and terminating at the exterior of the vertical walls thereof, and a shell inclosing the water compartments and forming with the indentations of the corrugated exteriors thereof, longitudinal flues on the exterior of the boiler, communicating the internal flues through the aforesaid radial passages, substantially as set forth. 3rd. In combination with a fire box, a plurality of water compartments disposed side by side with spaces between them and mounted on the fire box crosswise thereof and having their peripheral surfaces corrugated and with the indentations of the corrugations of each in line with those of the other compartments, and cleaning ports, in the ends of the combustion chamber and in range with the aforesaid indentations of the corrugated surfaces of the water compartments, substantially as described and shown.

No. 42,590. Tobacco Cutter. (*Coupe-tabac.*)

Alexander Stuart, Hamilton, Ontario, Canada, 13th April, 1893; 6 years.

Claim.—1st. A tobacco cutter consisting of a rectangular shaped box, having an interior recess for cut tobacco, a cylinder journalled on the box, and having knife or saw-shaped teeth for cutting tobacco, and a handle to rotate the cylinder, substantially as specified. 2nd. In a tobacco cutter, the combination of the box A, with recess B, cover J, cylinder H, having knife or saw teeth *a*, *b*, standards E, spindle F, handle I, all constructed substantially as and for the purpose specified.

No. 42,591. Cash Registering and Recording Appliance. (*Registre de monnaie.*)

John Shakespeare, Dudley, Worcester, England, 13th April, 1893; 6 years.

Claim.—1st. In a cash register, the combination, with the two indicating dials C and D at the opposite sides of the case, the indicating pointers, and the toothed wheels positively connecting the shafts of the said pointers, of a ratchet wheel, a spring pressed pawl pivoted to one of the said wheels and adapted to turn the ratchet wheel in one direction, a pivoted check pawl, the recording dials provided with pointers, and toothed wheels operatively connecting the recording pointers with the said ratchet wheel, substantially as set forth. 2nd. In a cash register, the combination, with an indicating pointer and its shaft, of a trip lever secured on the said shaft, a bell, a pivoted spring lever provided with a hammer for

striking the bell, a stop for the spring lever, and a bent spring secured to the spring lever and adapted to be actuated to cause the hammer to ring the bell each time the said pointer is moved from its zero position, substantially as set forth. 3rd. In a cash register, the combination, with an indicating pointer and its shaft, of a pivoted locking lever provided at its upper end with a bent spring and a dent and having a bent lower end 57, a trip lever secured to the said shaft and adapted to engage with the said detent, a cash receptacle provided with a pivoted lid, and a weighted lever normally resting on the said end 57 and adapted to open the lid each time the said pointer is moved forward, substantially as set forth. 4th. In a cash register, the combination, with the shaft f positively connected with the indicating pointers, of a series of ratchet wheels secured on the said shaft and provided with teeth of different pitch, a series of pivoted finger levers provided with spring pressed pawls and adapted to operate the ratchet wheels, and stops for limiting the movements of the said levers, substantially as set forth. 5th. In a cash register, the combination, with the shaft g^1, of the recording mechanism adapted to be revolved in one direction only, of the rollers T T^1, toothed wheels positively connecting the said rollers with the said shaft, whereby a strip of paper may be fed forward for a distance proportional to the movement of the recording mechanism, and a guide for supporting the said strip and permitting it to pass out of the machine, substantially as set forth.

No. 42,592. Car Journal Box. (*Coussinet de tourillon.*)

Edward W. M. Hughes, Chicago, Illinois, and Edward N. Dickerson, New York, New York, both in U. S. A., 13th April, 1893; 18 years.

Claim.—1st. A journal box for cars, formed of a single piece of steel and having but one joint, substantially as described. 2nd. The pressed steel journal box formed of one piece of steel, and having flanges B B^1, C D and projection K, formed of one piece of steel with but a single joint, substantially as described. 3rd. A journal box for cars, formed of a continuous piece of pressed steel, and having flanges surrounding the same pressed from part of the metal of the box, substantially as described.

No. 42,593. Corn Harvester.

(*Moissonneuse pour blé-d'inde.*)

D. M. Osborne & Co., Auburn, New York, assignee of Christian H. Salzman, Chicago, Illinois, both in U.S.A., 13th April, 1893; 6 years.

Claim.—1st. In a corn harvester the supporting cross pieces D D^1, having arches therein located in position to clear the row of stalks adjacent to the row acted on by the cutter, substantially as specified. 2nd. In a corn harvester, the combination, with the supporting cross piece D, having an arch therein located in position to clear the row of stalks adjacent to the row acted on by the cutter, of a forked tongue having an arched brace, substantially as and for the purpose specified. 3rd. In a cutting apparatus having a circular cutter, a driven revolving peripherally notched wheel having a hook shaped holding notches, whereby said wheel operates as a feed wheel in carrying stalks to position for cutting and in severing them, substantially as described. 4th. In a corn harvester, the combination with a circular cutter H^1, of a notched feeding wheel H, having an open bottomed groove h^1, in its periphery to receive the cutter, substantially as and for the purpose specified. 5th. In a corn harvester, the combination, with a circular cutter H^1, of a notched feeding wheel H, having an open bottomed groove h^1 in its periphery, said wheel being open or provided with a notched rim and supporting ribs on its underside, substantially as and for the purpose specified. 6th. In a corn harvester, the combination, with the arms L L^1, of chains M M^1, having inward projections m^1 and upward projections m^2, for gathering inclined or fallen stalks, substantially as specified. 7th. In a corn harvester, the combination, with the inclined gathering arms, of frames N N^1 swinging horizontally in rear of said arms, substantially as and for the purpose specified. 8th. In a corn harvester, the combination, with a gathering arm L and a frame swinging horizontally in rear thereof, of a star wheel secured on said arm at a point opposite or nearly opposite the forward end of the frame N and having its arms or points extending into the stalk passage, substantially as and for the purpose specified. 9th. In a corn harvester, the combination, with gathering arms L L^1, and frames N N^1, swinging horizontally in rear thereof, of springs O O^1 pressing the frames N N^1 toward each other and automatically varying the space between said frames, substantially as and for the purpose specified. 10th. In a corn harvester, the combination of gathering arms, frames swinging horizontally in rear thereof, springs O O^1, pressing the frames toward each other and automatically varying the space between said frames, and guides z, z^1, extending rearwardly from said frames, substantially as and for the purpose specified. 11th. In a corn harvester, the combination with the bed frame of the harvester, of vertical shafts b, b^1, uprights c, brackets d^1, caps k, k^1, gathering arms L, L^1, supported on said caps, and braces l, substantially as specified. 12th. In a corn harvester, the combination with a circular rotating cutter and a rotating feed wheel of the two elevator chains F, F^1, and gearing for positively driving the cutter and the feed wheel respectively, from the separate elevator chains, substantially as specified. 13th. In a corn harvester, the combination with the cutting apparatus composed of the feeding wheel and circular cutter and the cylinder I, I^1, located above the cutting apparatus, of the guides p, p^1, extended backward between said cylinders, substantially as and for the purpose specified. 14th. In a corn harvester, the combination of the gathering arms L, L^1, the endless chains M, M^1, moving in opposite directions on the opposite sides of said arms, the vertical shafts b, b^1, the feed disc H, and circular cutter H^1, mounted on the lower ends of said shafts, the gear wheels K, on the upper portions of said shafts, the caps k, attached to the upper ends of the arms L, L^1, at the tops of the shafts, the pinions j, and the shafts j^1, having sprocket wheels for the endless chains, substantially as shown and described. 15th. In a corn harvester, the combination, with the elevating frame and carrier, of the latterly adjustable curved springs S, located above the carrier, said springs being secured at both ends to give an even pressure on the stalks and having at one end an adjustable connection to vary their tension on the carrier, substantially as shown and described. 16th. In a corn harvester, the combination, with the elevating frame and carrier, of the springs S, located above the carrier and attached at both ends and having free-ended branch springs s, attached thereto and extending over the binder table, substantially as and for the purpose specified. 17th. In a corn harvester, the combination of an inclined receiving platform, the elevating chains, a cutting apparatus arranged across the line of travel in front of the lower part of said platform, the receiving plate g^1, between said cutting apparatus and platform to support the butts of the cut stalks, and the armed collar i^1, supported above and adjacent to the cutters, to force the stalk butts back while supported in a vertical position on the receiving plate, substantially as described. 18th. In a corn harvester, the combination, with the platform R, a cutting apparatus in front of said platform, and the gathering arms L, L^1, of the broad curved shields Q, Q^1, supported by the upper ends of said arms above the cutting apparatus and extended rearwardly and downwardly over the platform, and the supports t, t^1, for guiding the tops of the falling stalks, substantially as shown and described. 19th. In a corn harvester, the combination, with the shield Q, and support t, of the yielding guide v^1, projecting downwardly and inwardly from the support t, substantially as and for the purpose specified. 20th. In a corn harvester, the combination, with the cutter and the gathering arms L, L^1, of the swinging frames N, N^1, having guides z, z^1, substantially as and for the purpose specified. 21st. In a corn harvester, the combination of the inclined gathering arms L, L^1, having toothed chains, and the horizontally swinging frames N, N^1, having toothed chains, with the star wheel P, having arms projecting into the stalk passage, substantially as and for the purpose described. 22nd. In a corn harvester, the combination, of the inclined gathering arms L, L^1, having toothed chains, and the horizontally swinging frames N, N^1, having toothed chains, with the cylinders I, I^1, J, J^1, and the rotary cutting apparatus, substantially as and for the purpose specified. 23rd. In a corn harvester, the combination of the inclined gathering arms L, L^1, having chains M, M^1, the horizontally swinging bars or frames N, N^1, chains n, and cylinders I, I^1, J, J^1, with the cutting apparatus, guides for the falling stalks, and an elevator, substantially as and for the purpose specified. 24th. In a corn harvester, the forwardly and downwardly projecting gathering arm L, and a chain guard m, on the outer edge thereof, projecting above the plane of the arm, in combination with a gathering chain having upward and outward projections passing downward through said guard and upward on the inner side of the arm, substantially as and for the purpose specified.

No. 42,594. Sash Weight. (*Contre-poids de croisée.*)

Dennis P. Slattery, assignee of William D. Rinehart, both of St. Louis, Missouri, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. As a new article of manufacture, a sash weight composed of iron chips or turnings, and any suitable cementing or adhesive material for cohering or sticking said chips together, substantially as set forth. 2nd. In a sash weight composed of iron chips or turnings, sal ammoniac, water, plaster of paris, litharge and sulphur, substantially as set forth. 3rd. As a new article of manufacture, a sash weight composed of 96 parts of iron chips or turnings, one part sal ammoniac, one half part of water, one part plaster of paris, one half part litharge, and one part sulphur, substantially as set forth. 4th. As a new article of manufacture, a sash weight comprising iron chips or turnings, cementing material for cohering said chips together, and a suspension wire 2 located centrally in said weight, substantially as set forth. 5th. As a new article of manufacture, a sash weight comprising iron chips or turnings, cementing material for cohering said chips together, and a suspension wire 2 provided with eyes 4, a bend 3 located centrally in said weight, substantially as set forth. 6th. As a new article of manufacture, a sash weight composed of 96 parts of iron chips or turnings, one part sal ammoniac, one-half part of water, one part of plaster of paris, one-half part of litharge, one part sulphur, and a suspension wire 2 provided with a bend 3, and eyes 4, substantially as set forth. 7th. The herein described method of making sash weights, which consists first in taking mold of suitable material and form provided with a plunger having a concave head, second, in taking iron chips or filings, sal ammoniac, water, plaster of paris, litharge and sulphur and mixing the same together, thereby filling said mold with said

mixed substance, fourthly, inserting a suspension wire provided with a bend in said mixed substance, and fifthly and lastly, in applying hydraulic or any suitable pressure to said plunger, for the purpose of solidifying and compressing said mixed substance into a solid mass, substantially as set forth.

No. 42,595. Steam Boiler. (*Chaudière à vapeur.*)

Harry W. Seller, Brooklyn, New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The combination in a water tube boiler, of banks of curved inclined water tubes, with a water box above the front end of the furnace, in which the front and upper ends of said water tubes are secured, a water box at and forming a part of the rear end of the furnace in which the rear and lower ends of the said banks of water tubes are secured, and a steam drum or drums connected with both the upper and lower water boxes, substantially as and for the purpose set forth. 2nd. The combination in a water tube boiler, of bands of curved inclined water tubes, a water box at the front end of the boiler above the front end of the furnace in which the front end of said water tubes are secured, and a water box at and forming a part of the rear end of the furnace in which the rear ends of said tubes are secured, with a partition I, in the lower and rear of said water boxes, and a bridge wall D, extending from the lower water box upward and forward at the rear of and above the upper tier of water tubes, substantially as and for the purpose set forth. 3rd. The combination in a water tube boiler, of banks of curved water tubes, as E and E^1, and water boxes as B and B^1, in which the ends of said tubes are secured, with a steam drum or drums connected to the front water box, as B, with a large transverse pipe or drum, as C, over the rear and lower water box, as B^1, pipes, as *d*, connecting said pipe or drum C with the front and upper water box B, and pipes, as *c*, connecting said pipe or drum C with the lower and rear water box, as B^1, at the rear of the bridge wall D, substantially as and for the purpose set forth. 4th. The combination in a water tube boiler, of banks of inclined curved water tubes, as E and E^1, with sector shaped water boxes, as B and B^1, in which the ends of said banks of tubes are secured, substantially as and for the purpose set forth.

No. 42,596. Locomotive Boiler.

(*Chaudière de locomotive.*)

Joseph S. Newlin, Fairfax, South Carolina, U.S.A., and William S. Coburn, Savannah, Ga., U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The "return ends" F, having a thickened anvil head, and tapered branches having deep threads cut thereon, substantially as shown and described. 2nd. The combination with the flute G, H, in a boiler, of the "return ends" F, having a thickened anvil head, and tapered branches having deep threads cut thereon, substantially as shown and described.

No. 42,597. Underground Conduit for Electric Railways. (*Conduit souterrain pour chemins de fer électriques*)

Charles P. Tatro, Spokane, Washington, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The combination, in conduits, for electric railways, of a series of pipe sections, having an insulated wire in each with projecting branch ends, a branch coupling joining the adjacent ends of pipe sections, a branch pipe in the coupling covering the branch ends of wire, the said branches being secured together in metallic contact, and a switch shield secured upon the said branch pipe, over the end of the said wires, substantially as described. 2nd. The combination of two or more segments of electric conduit pipes joined by branch couplings, and a switch shield upon the end of the branch covering the same, substantially as described. 3rd. The combination of a pipe, an electric line wire insulated therein and projecting from the end thereof, a shield secured upon the pipe over the end of the wire, an outgoing wire from the shield, a switch journalled to rock in the shield to make and break connection between the said line wire, and outgoing wire, a turnstile upon the switch shaft outside the shield, adapted to be engaged by hangers from a car, and lugs in the path of the turnstile, substantially as described, whereby the rotary motion of the switch is limited. 4th. The combination in electric conduits for railways, of a line wire and two branch wires thereof, having their ends parted in a shield, a switch bar having contact springs on its two ends to connect the said branch wires, a shaft for the said switch bar, journalled in the said shield, and means for rocking the shaft external to the shield, the said switch bar being insulated from its shaft, substantially as described. 5th. The combination of an electric line wire, having lateral branches, a series of segmental rails fixed along a road and provided each with a branch wire, a switch adapted to make and break connection between the said branch wires, and mounted on a rock shaft, a turnstile fixed upon the rock shaft in the path of arms depending from the car, and means, substantially as described, for limiting the turnstile to an oscillating movement, whereby the operation of the switch is reversed by reversing the direction of travel of the car. 6th. The combination, in conduits, for electric railways, of a series of segmental, insular rails located upon the road, a line wire having branches communicating with the said rails through switches, provided each with a turn stile, and hangers upon the car adapted to strike opposite ends of the turn stile alternately, substantially as described. 7th. The combination, in conduits for electric railways, of an electric switch mounted upon a rock shaft provided with turnstile arms, hangers from the car adapted to engage the said arms at opposite ends alternately, and guiding wedges for the hangers, located in line of the turnstile, substantially as described. 8th. The combination, in conduits, for electric railways, of an electric rail located along the road within a channel having a wall opposite to the rail, and a trolley hung to the car, and having two wheels to engage the said rail to form electric communication with the car motor, and further, having another wheel opposite and intermediate to the said electric wheels to bear against the opposite wall of the channel, substantially as described. 9th. The combination in conduits for electric railways, of an electric rail located along the road, a wall opposite thereto, and a trolley having two wheels to roll on the rail, and one wheel opposite and intermediate to the two wheels to roll on the wall, there being a yielding connection between one of the said wheels and the trolley body, substantially as described.

No. 42,598. Holder for Spring Harrow Teeth.

(*Porte-dents élastique pour herses.*)

Arthur B. Farquhar, assignee of Henry W. Eisenhart, both of York, Pennsylvania, U.S.A., 13th April, 1893; 6 years.

Claim.—A holder for spring harrow teeth, consisting of the split clamping ring, clamping plate, fast at one end to the ring, and having between it and the ring a socket to receive the end of the tooth, and means for drawing together the free end of the clamp plate and the opposite free end of the clamping ring, whereby at one and the same operation the tooth may be clamped in its holder and the holder itself may be clamped or closed upon its support, substantially as and for the purposes hereinbefore set forth.

No. 42,599. Waist and Supporter for Garments.

(*Gilet et bretelle pour vêtements.*)

Harriet M. Clark, Flushing, New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The garment having straps attached thereto at the shoulders and extending down the back, where they are provided with attaching means, in combination with the elastic M-shaped suspenders having means for attaching one of the upwardly extending folds to the strap extending from one shoulder only and the other fold to the other shoulder strap, and means for attaching the two downwardly extending ends and the middle fold to the nether garment, substantially as described. 2nd. The garment having shoulder straps attached and extending down the back, as described, and provided at the lower ends with tabs and buttons, in combination with the M-shaped elastic suspenders having loops at the two upper folds, through which the said tabs extend, said suspenders having means for attaching the two pendent ends and the pendent middle fold to the nether garment, substantially as described. 3rd. The shirt waist described, having attached inside shoulder straps extending down the back, provided with tabs, as described, and having holes below said shoulder straps for the passage of the suspenders, in combination with the M-shaped suspenders connected at their upper folds to said tabs and having their lower ends and folds extending through the holes in the shirt and provided with means for attachment to the nether garment, substantially as described.

No. 42,600. Nursing Bottle. (*Biberon.*)

Gustav Rudolph Schimmel, Detroit, Michigan, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The combination with a bottle having an orifice K in its neck, of a bottle stopper having a milk passage D and an air aperture H, opening in a chamber containing fibrous material and placed into and out of coincidence with the orifice in the bottle neck by the axial rotation of the bottle stopper, substantially as described. 2nd. The combination with a bottle having an orifice K in its neck, of a stopper C having a flange F, milk passage D, air aperture H, chamber I, containing fibrous material and an elastic sleeve G provided with a perforation opposite the slot in the stopper and placed into and out of coincidence with the orifice in the bottle neck by the axial rotation of the stopper, substantially as described. 3rd. In a nursing bottle, the combination with the bottle and its stopper, of a vent aperture, a chamber formed in said aperture and fibrous material in said chamber, substantially as described. 4. In a nursing bottle having a curved lower end, of a flat base formed by a cord extending from a point on the side to a point at the lower end, substantially as described.

No. 42,601. Draft Regulator. (*Régulateur de tirage.*)

Charles Dezang Howard, Syracuse, New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. A draft regulator consisting of two slat work cylinders, one within the other, a lever connecting the inner cylinder, and piping therefrom in combination with a thermostat connected to said lever and adapted to rotate the inner cylinder by the thermostatic deflection. 2nd. The combination, with a thermostat, of two compartments created by two slat work cylinders,

one within the other, main draft and check draft pipes leading from the respective compartments, and means to rotate the inner cylinder, actuated by the deflection of the thermostat. 3rd. A thermostat consisting of a bar of expansible material secured at both ends and adapted to bend centrally when expanded by heat, in combination and in engagement with one arm of a crank lever, bearing against one side, and means to connect said lever to a regulator.

No. 42,602. Steam Muffler.

(*Appareil pour assourdir la vapeur.*)

Caleb E. Healy, Detroit, Michigan, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. Mechanism for absorbing and consuming exhaust steam from an engine, consisting of the enlarged condensing chamber C, provided with the discharge pipe c^1, the jacket chamber D provided with the connecting and discharge pipes c, d^2, and E, in combination with the superheating and perforated coil E^1, arranged to operate, substantially as described. 2nd. In means for condensing, superheating, and consuming exhaust steam, a condensing chamber C, an exhaust pipe extending into this chamber, a drain pipe c^1, a steam connection with a jacketed chamber D, perforated partitions with openings arranged on alternate sides of the jacketed chamber, a vent exhaust pipe leading from this chamber, and a perforated coil extending from this pipe and situated in close juxtaposition to the mouths of the boiler flues, substantially as described.

No. 42,603. Food Cutter.

(*Appareil pour couper la viande, le pain, etc.*)

Martin Fader, Bayside, Ontario, Canada, 13th April, 1893; 6 years,

Claim.—In a food cutter, the combination of a knife moving in ways, with a gauge board formed with flanges and having a varying thickness of the board upon opposite sides of these flanges, the side boards of the cutter containing vertical grooves upon their inner sides for the reception of the flanges of the gauge board, substantially as described.

No. 42,604. Envelope. (*Enveloppe.*)

Jesse Williams Alton, New Whatcom, Washington, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. The combination with a permanent envelope having an opening, of a temporary wrapper having a flap adapted to pass through said opening and provided with a gummed surface by which it may be secured, substantially as set forth. 2nd. The combination with a permanent envelope having an address opening, of an independent temporary wrapper, provided with a gummed surface by which it may be secured, substantially as set forth. 3rd. The combination with a permanent envelope having a name address opening, of a temporary address wrapper, having a gummed surface adapted to pass over the envelope flap and be stuck to the envelope, substantially as set forth. 4th. The combination with a permanent envelope having an address opening and a tuck opening, of a temporary wrapper to inclose the matter to be sent and hold the address, said temporary wrapper provided with a gummed flap to pass through said tuck opening and adapted to pass over the envelope flap and be gummed to said envelope, substantially as set forth. 5th. The combination of a permanent envelope, and an independent temporary address carrying wrapper supplemental and complemental to said envelope, and adapted to be used in place of that part of the envelope ordinarily destroyed by the first use, substantially as set forth. 6th. The combination with a permanent envelope, of an independent sealing flap, substantially as set forth. 7th. The combination with a permanent envelope provided with a sealing flap opening, of an independent sealing flap having one portion of less width and another portion of greater width than the length of said sealing flap opening, substantially as set forth.

No. 42,605. Attachment to be Applied to Measuring Tapes. (*Attache pour ruban à mesurer.*)

John J. Oxley, Montreal, Quebec, Canada, 13th April, 1893; 6 years.

Claim.—1st. In combination with a measuring tape and its terminal link, of thumb pins hinged upon the outer bar of such link, as set forth. 2nd. In combination with a measuring tape and its terminal link, of thumb pieces A, A, with points B, B, hinged together about one end of said link, as set forth.

No. 42,606. Mould for Making Plaster Slabs.

(*Moule pour faire les barres à plâtrer.*)

Thomas Curran, New York, State of New York, U.S.A., 13th April, 1893; 6 years.

Claim.—1st. A mould for forming plaster slabs with dove tail cavities and projections, consisting of the moulding sheet and frame made integral, and the whole sheet and frame being composed of soft rubber, substantially as set forth. 2nd. A mould for forming plaster slabs with dove tail cavities and projections, consisting of the moulding sheet and the surrounding frame A A B B, made integral with said sheet, and the whole sheet and frame being composed of soft rubber, substantially as set forth.

No. 42,607. Heating Apparatus. (*Appareil de chauffage.*)

Hiram John Wattles and Charles Marion Lukens, both of Syracuse, New York, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. In a heater, the combination, with the cylinder, D, provided with the dome *a*, which is closed as its top, of the conductor E, extending up into the dome, said conductor being open at the top and flanged at its bottom, forming a cover over the outer edges of the fire pot, and a heater for the air passing down the indirect flue *c*, as shown and described for the purposes specified. 2nd. In a heater, the combination of the cylinder D, provided with the dome *a*, the conductor E open at the top and flanged at its bottom, covering the outer edges of the fire pot, the casing G, surrounding the cylinder and the cold air pipe *g* opening into the chamber, substantially as shown and described and for purpose specified. 3rd. In a heater, the cylinder D, having the dome *a*, the conductor E, open at its top and flanged at its bottom, and covering the outer edges of the fire pot, the casing G surrounding the cylinder, and the cold air pipe *g*, provided with the blower *i*, and opening into the chamber, all combined and operating substantially as described and for the purpose specified. 4th. In a heater, the combination with its fire pot, of a cold air conductor K extending from the outer portion of the heater and passing vertically up through the central portion of the fire pot to a suitable height above it, substantially as shown and described and for the purposes specified. 5th. In a heater, the combination with its fire pot of a cold air conductor K leading from the exterior of the heater and extending vertically up through the fire pot, terminating a suitable distance above it, the said discharge end provided with a deflector *l* upheld in non contact therewith, substantially as described and shown and for the purposes specified.

No. 42,608. Car Coupler. (*Attelage de chars.*)

Edwin B. Reid, Barrie, Ontario, Canada, 14th April, 1893; 6 years.

Claim.—1st. An improved automatic car coupler consisting of a draw head shaped substantially as shown and provided with one-half of a locking roller B, actuated by a spring and arranged to engage with the other half of a locking roller carried in a similarly formed draw head, substantially as and for the purpose specified. 2nd. Two draw heads A, each formed with a nose *b*, arranged to fit into a recess formed on the other draw head, in combination with a pin designed to fit into a hole formed by the two draw heads engaging with each other, substantially as and for the purposes specified. 3rd. An improved automatic car coupler, consisting of a draw head shaped substantially as shown and provided with one-half of a locking roller B, movably held in position by the key C, actuated by a spiral spring on the rod D, and arranged to engage with the other half of a locking roller carried in a similarly formed draw head, substantially as and for the purpose specified.

No. 42,609. Clamp for Brush Fibre.

(*Agrafe pour fibres de brosse.*)

William S. McDonel, Windsor, Ontario, Canada, assignee of William H. Gates, Detroit, Michigan, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A clamp for the purpose specified, composed of the parallel side rails joined at their ends, said rails having the oppositely arranged and inwardly extending partitions forming pockets between their adjacent sides, and an open space between their opposed ends extending longitudinally through the centre of the clamp, as set forth. 2nd. In a clamp, the combination of the parallel side rails, the vertical end portions joining said rails and having a groove or way therein, said rails having the laterally extending partitions, and the notches or depressions in their upper edges between said partitions, substantially as specified. 3rd. The combination of the clamp having the parallel rails provided with the lateral partitions, the vertical end portions joining said rails and having the ways therein, and the follower blade adapted to reciprocate in said ways, by means of which the fiber is folded and separated within the clamp, substantially as specified.

No. 42,610. Brush. (*Brosse.*)

Joseph S. Edgar, Windsor, Ontario, Canada, assignee of William H. Gates and Forbes C. Welsh, Detroit, Michigan, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. In combination with the brush body having the annular recess in its under face and the socket leading centrally therefrom, the metal ferrule located in said annular recess, the stem having the brush fiber secured transversely thereto, one end of said stem being secured within the socket, and the fiber being folded within the ferrule with its ends projecting outward, substantially as specified. 2nd. A brush body having an annular recess in one of its faces, and an annular socket leading centrally therefrom into the body of the brush, combined with the ferrule, the stem having on opposite faces a tuft of fiber crossing said stem and being attached thereto at the point of crossing, one end of said stem being confined within the socket, the bristles of fibers being folded within the ferrule, and the brad or nasl securing said stem to the brush body, substantially as specified. 3rd. In combination with the brush body having the annular recess therein, the socket leading centrally therefrom, the metal ferrule in said annular recess, the stem having on its opposite faces the tuft of bristles, the staples securing said bristles to the stem, one end of said stem passing into the socket, the bristles being

folded within the ferrule their ends projecting therefrom, and the nail securing said stem and ferrule to the body of the brush, substantially as set forth. 4th. In combination with the brush body having the annular recess therein, the socket leading centrally therefrom, the stem having on two opposite faces the tuft of bristles, one end of said stem passing into the socket, said stem being secured in the body of the brush, substantially as specified. 5th. The combination with the brush body having the annular recess in its under face, the ferrule located in said annular recess, the stem having the brush fiber secured transversely thereto, said stem and fiber lying within the ferrule, the fiber being folded therein with its ends projecting outward, substantially as specified.

No. 42,611. Refrigerator. (*Réfrigérant.*)

The Trussell Automatic Freezer Company, assignee of Wilbert Clarence Trussell, all of Boston, Massachusetts, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A refrigerator or refrigerating structure, having a storage chamber, an air space surrounding said chamber, and one or more cans or receptacles containing a refrigerating compound or mixture located in said air space, as set forth. 2nd. A refrigerating structure, comprising a storage chamber, an air space surrounding said chamber, and groups of receptacles containing a refrigerating mixture or compound and located in the air space at opposite sides of the storage chamber, as set forth.

No. 42,612. Stove Pipe Elbows.

(*Coude de tuyau de poêle.*)

Kieckhefer Bros. & Company, assignee of Sebastien Walter, all of Milwaukee, Wisconsin, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A stove pipe elbow formed in arc shape and constructed of a single piece of sheet metal intact throughout its entire extent, the elbow having but one joint and that formed by a seam along the line of its greatest arc, substantially as described. 2nd. A pipe elbow constructed in arc form of a single sheet of metal, folded medially into a series of transverse radiating ribs, highest along its central longitudinal line, decreasing outwardly and vanishing at a distance from the edges of the sheet, the longitudinal edges of which sheet of metal are joined together in a seam along the line of the greatest arc of the elbow, substantially as described.

No. 42,613. Rice Scourers. (*Machine à nettoyer le riz.*)

Squire A. Pickett, Crowley, Louisiana, U.S.A., 14th April, 1893; 6 years.

Claim.—In a machine substantially as described, the combination of the casing having an opening E, and grooved or recessed at *e*, along the edges of said opening, the wire netting fitted over the opening E, and inserted at its edges in the groove or recess *e*, the strips fitted in the groove or recess, and the fastening bolts for such strips, all substantially as and for the purpose set forth.

No. 42,614. Bicycles. (*Bicycle.*)

Henry George Eunton Pointon, Toronto, Ontario, Canada, 14th April, 1893; 6 years.

Claim.—1st. As an improved drive for bicycles, the combination with the pedals, of the sprocket wheels J, double sprocket wheels E, E^1, journalled on the shaft C, and sprocket pinion L, secured to the hub of the main driving wheel, these sprocket wheels being connected together by the sprocket chain P, and sprocket chain O, as and for the purpose specified. 2nd. In a bicycle, the combination with the pedal and pedal axle, of the sprocket wheel F, secured on the end of the same and connected by the sprocket chain Q, to the sprocket wheel K, on the stud I, the sprocket wheel J, connected by the sprocket chain P, to the portion E^1, of the double sprocket wheel E, E^1, the portion E, of the double sprocket wheel E, E^1, being connected by the sprocket chain O, to the sprocket pinion L, attached to the hub of the driving wheel, the double sprocket wheel E, E^1, being loosely journalled on the axle E, as and for the purpose specified. 3rd. The combination with the pedal axle C, sprocket wheel F, chain Q, sprocket wheels K and J, and stud I, sprocket chain P, double sprocket wheels E, E^1, sprocket chain O, and sprocket pinion L, of the clip G, provided with an upper flange G^1, having secured to it the journal box H, by the bolts *h*, passing through the slots h^1, in the upper flange, as and for the purpose specified. 4th. The combination with the pedal axle C, sprocket wheel F, chain Q, sprocket wheels K and J, and stud I, sprocket chain P, double sprocket wheels E, E^1, sprocket chain O, and sprocket pinion L, of the clip G, having the journal box H, secured thereto and provided with teats *g*, fitting into holes g^1, in the back bone A^1, as and for the purpose specified.

No. 42,615. Flood Water Trap.

(*Trappe pour inondation.*)

Joseph Louis Smith, Toronto, Ontario, Canada, 14th April, 1893; 6 years.

Claim.—1st. As a flood water trap for cellars or basements the combination with the drain pipe G, chamber F, chamber D, and grating B, of the slanting partition E, having an opening H, and a flap I, suspended from above the opening so that it will, by its own gravity close such opening, as and for the purpose specified. 2nd. The combination with the drain pipe G, chamber F, chamber D, and grating B, of the slanting partition E, having an opening H, and a flap I, provided with a layer of rubber O, secured in position by the plate M, bolt N, and nut *n*, and suspended above the opening so as to cause the rubber edge of the layer O, to rest against the flange *h*, as and for the purpose specified. 3rd. The combination with the drain pipe G, chamber F, chamber D, and grating B, of the slanting partition E, having the opening H, and flap I, provided with a layer O, of rubber secured in position by the plate M, bolt N, and nut *n*, and having secured in the top of the flap the screw eyes J, by which it is suspended by the links K, from the eye bolts L, secured in the partition E, as and for the purpose specified. 4th. The combination with the drain pipe G, the chamber F, with slanting concave bottom, the chamber D, with slanting concave bottom above the level of the chamber F, and the grating B, of the slanting partition E, having the opening H, with concave bottom and the flap I, with convex bottom suspended from above the opening and resting of its own gravity against it, as and for the purpose specified.

No. 42,616. Cotton Harvesting Device.

(*Machine à récolter le coton.*)

Gerard Beekman, New York, State of New York, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A device for picking cotton, consisting in a revoluble mass of cotton or other fibre of similar structural character, and suitable mechanism for rotating the mass upon its own axis, the fibres of the said mass being exposed in their native or non woven state, and adapted to engage with and extract the growing cotton, substantially as described. 2nd. The combination in a cotton picking device, of a mass of cotton or other fibre of similar structural character in its native or non woven state, and a rotary supporting stem extending into the centre of the mass and secured thereto, forming a core, substantially as and for the purpose described.

No. 42,617. Rocker and Cup for Operating Pumps.

(*Bascule et godet de pompe.*)

Joseph Barrett, Petrolia, Ontaria, Canada, 14th April, 1893; 6 years.

Claim.—1st. The combination of the rocker B, B, and the improved cup C, substantially as and for the purpose hereinbefore set forth.

No. 42,618. Journal Box Lifter.

(*Bras pour coussinets de tourillon.*)

Emery E. Taylor, Minneapolis, Minnesota, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A journal box lifter consisting of a bracket adapted to be attached to the top of the wheel, and adjustable connections between the bracket and journal box, whereby the latter can be lifted, substantially as set forth. 2nd. A journal box lifter, comprising a bracket consisting of one member adapted to engage the flange, of a car wheel and another member bearing against the face of the wheel and serving as a brace, and connecting devices between the bracket and journal box, whereby the latter can be lifted by means of nuts and screws, substantially as set forth. 3rd. A journal box lifter for car wheel, consisting of a bracket having a portion for engaging the wheel flange, and a brace bearing against the wheel face, a vertically adjustable yoke connected to the bracket, and means for connecting it to the journal box, substantially as set forth. 4th. A journal box lifter for car wheels, consisting of a bracket for grasping the upper edge of the wheel and having a brace bearing against the wheel face, a chain for engaging the journal box and means for connecting the chain to the bracket and raising or lowering it, substantially as set forth.

No. 42,619. Adjustable Wire Bale Tie.

(*Lien ajustable en fil de fer pour ballots.*)

John Wool Griswold, Troy, New York, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A bale tie having at one end a loop, and within said loop a saddle or thimble having a V or wedge shaped opening adapted to receive the opposite end of said band, the aforesaid parts being arranged and operating so that when the end of the band is inserted through the saddle and strain applied, the said end will be drawn and wedged into the apex of the V-shaped opening of the saddle, and will also be clamped therein by the closing together of the parts of the saddle under the applied strain. 2nd. A bale tie having a loop or eye formed at one end, and in said loop or eye a thimble or saddle of soft malleable metal having an external groove receiving the wire of said eye, and a V or wedge-shaped opening adapted to receive the other end of the band, the aforesaid parts being arranged and operating so that when the end of the band is inserted through the saddle and strain applied, the said end will be drawn and wedged into the apex of the V-shaped opening of the saddle, and will also be clamped therein by the closing together of the parts of the saddle under the applied strain.

No. 42,620. Valve for Steam Engines.

(*Soupape pour machines à vapeur.*)

Fred. William Bruce, Florida, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. In a valve mechanism for engines impelled by steam or other gas under pressure, the combination, with a cylinder and piston reciprocating therein, of a steam chest, a rotary valve rotating in said steam chest and having annular steam and exhaust ports near the periphery thereof, the exhaust ports being divided by radial ribs into a plurality of pockets, and a valve seat connected to said cylinder and having ports opening into said cylinder, the said valve seat being cut away in between said ports, whereby the steam or other gas is admitted between the said ports beneath the said valve, tending to balance the same, substantially as described. 2nd. In a valve mechanism for engines impelled by steam or other gas under pressure, the combination, with a cylinder and piston reciprocating therein, of a steam chest, a rotary valve rotating in said steam chest, and having annular ports near the periphery thereof, the exhaust being divided by radial ribs into a plurality of pockets, a hand operated reversing valve pivoted beneath the rotary valve and constituting a valve seat therefor, the said reversing valve having double sets of ports, and being cut away between the said ports whereby the steam is admitted between the said ports beneath the rotary valve tending to balance the same, and a valve seat beneath the said reversing valve attached to or integral with the said cylinder, the said valve seat having double sets of steam, and exhaust ports therein opening into the cylinder, substantially as described. 3rd. In a valve mechanism for engines impelled by steam or other gas under pressure, the combination with a cylinder and a piston reciprocating therein, of a steam chest, a rotary valve rotating in said steam chest and having annular ports near the periphery thereof, a reversing valve pivoted beneath the rotary valve and constituting a valve seat therefor, the said reversing valve having double sets of ports, and a valve seat beneath the said reversing valve, the said valve seat having double sets of steam and exhaust ports therein opening into the cylinder, substantially as described. 4th. In a steam engine, the combination, with a steam chest, a cylinder and a suitable valve seat, of a rotary valve having an open annular port therein for the admission of steam and a closed exhaust port divided by radial ribs into a plurality of pockets opening downwards, substantially as and for the purposes described. 5th. In a steam engine, the combination, with a steam chest, a cylinder, and a reversing valve, substantially as described, of a rotary valve having two open annular ports therein, the one exterior to and concentric with the other, and two closed annular exhaust ports therein, the one interior to and concentric with the other, substantially as and for the purposes described. 6th. In a steam engine, the combination with a shaft of a plurality of piston rods connected to and driving the same, a plurality of single acting cylinders whose pistons are connected to said piston rods, the said cylinder having one end open to the exhaust and the other open alternately to steam and the exhaust, and a rotary valve having a plurality of steam and exhaust ports corresponding to the number of said cylinders, substantially as described. 7th. In a steam engine, the combination with a shaft of a plurality of piston rods connected to and driving the same, a plurality of single acting cylinders whose pistons are connected to said piston rods, the said cylinders having one end open to the exhaust and the other open alternately to steam and the exhaust, a hand operated reversing valve having ports connected to the closed ends of said cylinders, and forming a valve seat for the rotary valve, and a rotary valve having double sets of steam and exhaust ports corresponding to the number of said cylinders and interior radially the one to the other, substantially as described. 8th. In a valve mechanism for engines impelled by steam or other gas under pressure, the combination, with a cylinder and piston reciprocating therein, of a steam chest, a rotary valve rotating in said steam chest, and having annular ports near the periphery thereof, the exhaust being divided by radial ribs into a plurality of pockets, a hand operated reversing valve pivoted beneath the rotary valve and constituting a valve seat therefor, the said reversing valve having double sets of steam and exhaust ports corresponding to the number of said cylinders, and interior radially the one to the other, as shown, and the said valve being cut away between the said ports, whereby the steam is admitted between the said ports beneath the rotary valve, tending to balance the same, and a valve seat beneath the said reversing valve, attached to or integral with the said cylinder, the said valve seat having one set of steam and exhaust ports therein opening into the cylinder, substantially as described. 9th. In a valve mechanism for engines impelled by steam or other gas under pressure, the combination, with a cylinder and piston reciprocating therein, of a steam chest, a rotary valve rotating in said steam chest and having annular ports near the periphery thereof, a reversing valve pivoted beneath the rotary valve and constituting a valve seat therefor, the said reversing valves having double sets of ports sloping as shown, and a valve seat beneath the said reversing valve, the said valve seat having one set of steam and exhaust ports therein opening into the cylinder, and registering with the said sloping ports in the reversing valve, substantially as described. 10th. In a steam engine, the combination, with a steam chest and cylinder, a reversing valve having two sets of double ports sloping as shown, and a valve seat attached to or integral with the said cylinder and having two ports adapted to register with either set of said double ports in the reversing valve, substantially as described, of a rotary valve having two open annular ports therein, the one exterior to and concentric with the other, and two closed annular exhaust ports therein, the one interior to and concentric with the other, substantially as and for the purpose described. 11th. In a steam engine, the combination, with a shaft, of a plurality of piston rods connected to and driving the same, a plurality of single acting cylinders whose pistons are connected to said piston rods, the said cylinders having one end open to the exhaust and the other open alternately to steam and the exhaust, a hand operated reversing valve having ports sloping as shown and forming a valve seat for the rotary valve, a valve seat attached to or integral with each of said cylinders, and having two ports to each cylinder adapted to register with the ports in the reversing valve, and a rotary valve having double sets of steam and exhaust ports corresponding to the number of said cylinders, and interior radially one to the other, substantially as described.

No. 42,621. Oven Door for Cooking Stoves.

(*Porte de fourneau pour poêles de cuisine.*)

William Buck, Brantford, Ontario, Canada, 14th April, 1893; 6 years.

Claim.—1st. The combination of an oven door for cooking stoves with a main frame portion, with a depression and a series of step shaped lugs supporting a transparent substance and holder, and secured in such manner as to allow a current of air to pass around it, a supplementary oven door with a series of openings and the slats 21, rotating in and secured by the strips 22, and operated by the lever 23, and projecting stud 24, passing through the slot 24 A, in the holder frame T^4, whereby the inner surface of the transparent substance in the oven door is protected and kept clean (see figs. 1 and 5), substantially as and for the purposes described. 2nd. In an oven door for cooking stoves, the combination of a frame portion, a transparent substance and holder, secured in such manner as to allow a current of air to pass around it, a supplementary oven door with a series of openings, and the slide or damper 30, supported on the nests 30 A, and retained in position by the knob 30 B, and by which the movement of the slide or damper 30, is effected, or by the use of a damper circular in form, where the shape of the oven door is more suitable to that form of damper, thus when open it allows the contents of the oven to be inspected through the transparent substance, and when closed protects and keeps clean the said transparent substance.

No. 42,622. Neck Yoke. (*Volée d'avant.*)

James Franklin Kellogg, Memphis, Michigan, U.S.A., 14th April, 1893; 6 years.

Claim.—The combination, with a pole and neck yoke, of the tip provided with a stop C, of a dog or pawl having one of its ends connected with the yoke by a swivel joint, the other to have a bitting engagement with the tip, a ring H, pivotally secured to said dog and the hook *f*, to engage the stop C, substantially as described and for the purpose set forth.

No. 42,623. Railway Brake. (*Frein de chemin de fer.*)

Thomas Henry Allen, Toronto, Ontario, Canada, 14th April, 1893; 6 years.

Claim.—1st. In combination, a rail brake jointed to the centre of the wheel brake, with said wheel brake having a means on its rear central portion whereby said rail brake is jointed thereon, substantially as shown and described. 2nd. In combination, the rail brake having means whereby it is jointed by one end to the wheel brake, the said wheel brake having means on its rear side to receive said rail brake jointed thereon, and the bars connected to said rail brakes, by which to operate said wheel and rail brakes, substantially as shown and described. 3rd. In combination, the rail brake having means whereby it is jointed by one end to the wheel brake, the said wheel brake having means on its rear side to receive said rail brake and supported by a hanger link, the bars connected to said rail brake and to arms or equivalent means at their opposite ends on a rocker shaft, and said rocker shaft carried in bearing 5 on the truck frame, substantially as shown and described. 4th. In combination, the rail brake jointed by one end to a wheel brake, the wheel brake having means on its central rear portion to receive said rail brake, the bars connected to said rail brakes, the cranks or equivalent means on the rocker shaft to receive the upper ends of said bars, the rocker shaft carried in bearings on the truck frame, the arms on said rocker shaft by which it is operated, and the counter weighted arm to elevate the said rail brake, substantially as shown and specified.

No. 42,624. Street Car Heaters.

(*Calorifère pour chars de rue.*)

Garson Myers, Chicago, Illinois, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. The combination, in a car, with a car seat, of a heater comprising a stove and a box shield containing the stove and having dead air spaces C and D respectively at its base and back, said stove containing shield being imposed on the seat portion of the seat and removably supported in place to avoid injurious bearing thereon, substantially as described. 2nd. The combination, in a car, with a car seat, of a heater comprising a stove and a box shield containing the stove and having sides *r*, a base *q* provided with an apron extension *n*, a dead air chamber C in its base conforming to the seat

portion *m* and a dead air chamber D conforming to the back of the seat, the stove containing shield being removably supported on the seat by fastening to the frame work thereof through the said apron extension and to a rail *k* at the seat back and being thereby practically suspended against injurious bearing on the said seat portion, substantially as described. 3rd. The box shield B of a car heater, adapted to seat directly on a car seat and contain a stove A, said box shield having sides *r*, a base *q* and a back *o* and provided on its base and back, respectively, with dead air chambers C and D, substantially as described.

No. 42,625. Steam Engine. (*Machine à vapeur.*)

Charles Frederic Littlejohn, Bridgeport, Connecticut, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. The combination with the piston rod, of the guided cross head having therein a transverse slide way, the levers 10 and 11 fulcrumed together and guided in the cross head, a sliding head 17 operated at right angles to the length of the piston by one of said levers, and a pitman connecting said head to the main shaft crank, the whole arranged as described and for the purpose set forth. 2nd. The combination with the piston rod and means for driving the same, of the cross head 9, guided in ways in the line of the piston stroke, and having a transverse slide way arranged therein, the lever 10 fulcrumed to the base, the lever 11 fulcrumed to the lever 10, and the joint arranged to have movement in the cross head, the slide head 17 carried by the lever 11, and the pitman 19 whereby the main shaft is driven, the whole arranged substantstantially as and for the purpose specified. 3rd. The piston rod arranged parallel with the driven main shaft, in combination with said shaft, and interposed connections substantially as described, whereby said shaft is revolved by the reciprocating movement of said piston rod.

No. 42,626. Sash Lock. (*Arrête-croisée.*)

Gerolt Gibson, St. Louis, Missouri, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A window sash lock combining a bracket carrying a latch or dog, and having its handle provided with a shoulder or projection, a second bracket carrying a stud or catch having engagement with said latch, and a detent engaging said shoulder, substantially as described. 2nd. In a sash lock, the combination of the bracket having two projecting ears or lugs, and the dog or latch hung near its upper end, between said ears or lugs, and having a lower bevelled end and an outwardly deflected upper end, and the catch having at its upper left hand corner a bevelled stud, substantially as set forth. 3rd. In a sash lock, the combination of two pivots, a detent or prop, and a latch or dog, the detent or prop being upon one of said pivots, and the latch or dog hung upon the other pivot, the latch having an arm provided with a shoulder or notch, which, when the latch is in its locked position, extends within the circle or radius of the prop, whereby the swinging of the prop around into engagement with the notch or shoulder will hold the latch unlocked, one of said pivots being attached to the immovable window frame, so that the opening of the sash will separate the pivots, thus disengaging the prop from the notched latch arm, allowing both the latch and the prop to fall back to their original positions, substantially as specified.

No. 42,627. Caulking Tool. (*Calfat.*)

Joseph O. Walton, George McLellan Robbins and Walter Summer Graham, all of Titusville, Florida, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A caulking tool, comprising a curved handle and caulking wheels pivoted in opposite ends thereof, substantially as described. 2nd. A caulking tool, comprising a curved handle having caulking wheels pivoted in its opposite ends, and a caulking blade pivoted on the same axis as one of the wheels, and having means for fixing its position on said axis, substantially as described. 3rd. A caulking tool, comprising a curved handle having a longitudinal groove therein, caulking wheels pivoted in opposite ends of the handle, and a cleaning out hook pivoted in the handle and adapted to lie in the groove, substantially as described. 4th. A caulking tool, comprising a curved handle having a longitudinal groove therein, caulking wheels pivoted in opposite ends of the handle, and a seam opener pivoted in the handle and adapted to lie in the groove, substantially as described. 5th. A caulking tool, comprising a curved handle having longitudinal grooves therein, caulking wheels pivoted in the opposite ends of the handle, a cleaning out hook pivoted in one of the grooves and adapted to lie therein, and a seam opener pivoted in the second groove, substantially as described. 6th. A caulking tool, comprising a curved handle, and wheels pivoted in opposite ends of the handle, one of the wheels having a grooved edge, substantially as described. 7th. The combination with the handle and the caulking wheel pivoted in one end thereof, of the marking wheel detachably and adjustably secured to the axis of the wheel, substantially as described.

No. 42,628. Safety Bolt. (*Boulon de sûreté.*)

Adam C. Goodman and John Dahinden, both of Canton, Ohio, U.S.A., 14th April, 1893; 6 years.

Claim.—The combination of the bolts A, provided with the right and left hand screw thread *a* and *b*, having different diameters, the female nut B, provided with the screw threaded apertures *d* and d^1, with different diameters, and provided with the non threaded space *f* between the threaded apertures, the nut D, provided with the screw threaded stem C, and the screw threaded bolt aperture *e*, all arranged substantially as shown and for the purpose set forth.

No. 42,629. Holder for Hitching Straps.

(*Porte-lien d'attache.*)

Seth T. Smith and Harlan P. Proctor, both of Viroqua, Wisconsin, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. A hitching strap holder comprising a flat base and a wire loop secured thereto, said loop being doubled upon itself and bent into a flat double coil, and secured at its end to the plate, substantially as set forth. 2nd. A hitching strap holder, comprising a flat sheet metal base having a hole at each end for securing it in place, and a wire loop secured thereto, said loop being doubled upon itself and bent into a flat double coil, and secured at its ends to the plate and base, substantially as set forth.

No. 42,630. Storage Battery. (*Accumulateur.*)

Patrick Kennedy and Charles Joseph Diss, both of Brooklyn, New York, U.S.A., 14th April, 1893; 6 years.

Claim.—1st. The use in a structure or structures employed for holding the active material of a storage battery, or a cohesive bitumen resin gum or gum resin and a mineral non-conductor of electricity, substantially as herein set forth. 2nd. The use in a structure or structures employed for holding the active material of a storage battery of a cohesive substance consisting of bitumen, resin gum or gum resin and a finely pulverized mineral non-conductor of electricity, substantially as herein set forth. 3rd. The use in a structure or structures employed for holding the active material of a storage battery of substances consisting of shellac, and a mineral non-conductor of electricity, substantially as herein set forth. 4th. The use in a structure or structures employed for holding the active material of a storage battery of substances consisting of a cohesive bitumen, resin gum or gum resin, and a floured mineral non-conductor of electricity, substantially as herein set forth.

No. 42,631. Machine for Cutting Stone and Ore.

(*Machine à scier la pierre et les minerais.*)

Camille Denard, Montreal, Quebec, Canada, 14th April, 1893; 6 years.

Résumé.—1° La lame T, tordue pour remplacée le fil T à trois brins et telle que décrite. 2° La combinaison des douze fils sur la figure 1, telle que décrite. 3° La combinaison de la machine E, qui permet de d'étacher tout l'appendice de l'affût, pour le transporter et l'utiliser spécialement, tel que décrit. 4° Le dispositif entiér de la figure 2, comprenant le socle A, les deux bras A^1 et A^2, surmontés des quatre récipiente B et C avec leurs conduits P et O, les disques I et J, avec la combinaison de leurs rails L et K, le tout tel que décrit, en permettant la découpe circulaire des pierres.

No. 42,632. Electric Lamp Lighter.

(*Commutateur de lampe électrique.*)

Josephus C. Chambers, Detroit, Michigan, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In an electric lamp lighter, the combination with a lamp, the burner of which is formed into or provided with an electrode, an extinguisher formed into or provided with the opposite electrode, and means for establishing and breaking the electrical connection between said electrodes, substantially as set forth. 2nd. In an electrical lamp lighter, the combination with a lamp, the burner of which is formed into or provided with an electrode, an extinguisher movable adjacent to the burner and provided with the other electrode, and means for establishing and breaking electrical connection between said electrodes, substantially as set forth. 3rd. In an electrical lamp lighter, the combination with a lamp, the burner of which is formed or provided with an electrode, an extinguishing cap movable back and forth over said burner, and provided with the other electrode at the rear, whereby the movement of the cap in one direction ignites the light, and the movement of it in the opposite direction extinguishes it, substantially as set forth. 4th. In an electrical lamp lighter, the combination with a lamp, the burner of which is formed into or provided with an electrode, an extinguishing cap, and an electrode, secured at the rear thereof, said last mentioned electrode comprising a wire, the portion intermediate its ends being coiled to increase its resiliency, substantially as set forth. 5th. In an electrical lamp lighter, the combination with a lamp, the burner of which is formed into or provided with an electrode, an arm pivotally secured adjacent to the lamp, one end of which is provided with an extinguisher, and an electrode, and means for automatically returning the arm to extinguish the light, substantially as set forth. 6th. In an electrical lamp lighter, the combination with a lamp, the burner of which is formed into or provided with an electrode, an arm pivotally secured adjacent to the lamp and provided with the other electrode, and means for simultaneously moving said lamp and the arm in opposite directions whereby the two electrodes are caused to engage with each other, substantially as set forth. 7th. In an electric lamp lighter,

metallic supporting standard, a metallic lamp, a metal arm insulated from the standard and lamp, and led into proximity to the lamp, an electric circuit through the arm, lamp and standard, having its poles adjacent thereto, said lamp and arm the one made movable in relation to the other, to make and break said circuit at said poles, the circuit being normally open, substantially as described. 8th. In an electric lamp lighter, a lamp, a standard to support the lamp, a support for said standard, an arm led into proximity to the lamp, an electric circuit having its electrodes in proximity to the adjacent portions of the lamp, and an arm, said lamp and arm the one made movable in relation to the other, to close and break the circuit, said circuit being normally open, and said standard being adjustable in said support, substantially as described. 9th. In an electric lamp lighter, the combination of a lamp, a support therefor, an arm led into proximity to the lamp, an electric circuit having its electrodes at the adjacent portions of the lamp and arm, said lamp and arm the one made movable with relation to the other to close and break said circuit at said electrodes, said arm at its extremity adjacent to the lamp provided with an insulated cap and extinguisher, substantially as described. 10th. In an electric lamp lighter, a lamp, a support therefor, an arm led into proximity to the lamp, provided with an extinguisher, an electric circuit having its electrodes at the adjacent portions of the arm and lamp, said arm and lamp the one movable in relation to the other to close said circuit to ignite the lamp and self-retracting to extinguish the lamp, said circuit being normally open, substantially as described. 11th. In an electric lamp lighter, a lamp, a support therefor, an arm led into proximity to the lamp, provided with an extinguisher, an electric battery, an electric circuit leading from said battery having its electrodes at the adjacent extremities of said lamp and arm, an inductive coil in said circuit, said lamp and arm, the one made movable with relation to the other, to close the circuit and ignite the lamp, and also to extinguish the same, said circuit being normally open, substantially as described. 12th. In an electric lamp lighter, the combination of a lamp, a support therefor, an arm overhanging the lamp tube, an electric current in electrical connection with the lamp and with said arm, a metallic bar H, connecting said arm with the circuit and insulated from the standard and lamp, said lamp and arm the one made movable with relation to the other to close the circuit and ignite the lamp, substantially as described.

No. 42,633. Electric Arc Lamp.

(*Lampe électrique à arc.*)

William Hopkin Akester, Fulham, Middlesex, England, 15th April, 1893; 6 years.

Claim.—1st. In an electric arc lamp, the combination of the two carriers for the carbons supported by the lower ends of suitable rods, suspended by means of a flexible connection passing over a pulley, a vertically movable box or case surrounding one of the rods and filled with spherical pellets and held in its normal position by a spring or weight, a loose disc or washer within the box, a solenoid and a stud or projection connected with the core of the solenoid and bearing upon the loose disc, substantially as herein shown and described and for the purpose stated. 2nd. In an electric arc lamp, a regulating device, consisting of a vertically movable box or case filled with spherical pellets and held in its normal position by a spring or weight, a rod passing therethrough and connected with one of the carbons, an apertured disc located within the box and a stud or projection bearing upon the disc and carried by some electrically controlled part of the lamp, substantially as herein shown and described and for the purpose stated.

No. 42,634. Street Car. (*Char de rue.*)

James Marshall, Toronto, Ontario, Canada, 15th April, 1893; 6 years.

Claim.—1st. A street car having a hinged step or foot board provided with means for locking it in a tilted position, substantially as and for the purpose specified. 2nd. A street car having a hinged step or foot board provided with means for locking it in a tilted position, in combination with one or more rails extending across the passage way, and connected to the hinged step or foot board, substantially as and for the purpose specified. 3rd. A hinged step or foot board A, one or more rails H, flexibly connected to the hinged step or foot board A, in combination with cords arranged to simultaneously tilt the step or foot board A, and raise the rails H, substantially as and for the purpose specified.

No. 42,635. Railway Signal.

(*Signal de chemin de fer.*)

John James Boyle, Kilskerry, Tyrone, Ireland, 15th April, 1893; 6 years.

Claim.—1st. In means for controlling trains on single railway lines, the combination with a starting signal operated from a signal cabin, of run-off switches leading to a siding and normally held open by a weight, and closed by the lever actuating the said signal whenever a suitable unlocking device is handed to the signal man in the cabin by the driver of an incoming train, substantially as described and shown in figs. 1 and 2 of the drawings. 2nd. In means for controlling trains on railway lines such as above claimed, the combination for shunting purposes, of a locking bar lever for locking and unlocking the switches of a siding operated from the signal cabin with a starting signal, while the signal remains at danger on the line, substantially as herein described and shown in figs. 3 and 4 of the drawings.

No. 42,636. Wall Ventilator. (*Ventilateurs pour murs.*)

George McSpadden, Denver, Colorado, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In a wall ventilator, the combination of a casing having a rounded or curved upper end, and the damper hinged to the casing of said ventilator, substantially as shown and described. 2nd. In a wall ventilator, the combination with a casing having an opening at its lower end for the passage of a stove pipe, a hinged damper and an opening at its rear upper side, the upper portion of said casing being contracted and curved as described, of the hinged damper located in said casing, and means for opening and closing the same, substantially as described. 3rd. A wall ventilator comprising a casing, having a vertical rear wall and an opening at its upper end adapted to communicate directly with a flue, a circular opening for the passage of a stove pipe, a hinged door and a pivoted damper located in said casing, substantially as described.

No. 42,637. Curtain Holding Device.

(*Bâton de rideaux.*)

Edward Everett Piper and George Henry Davis, both of Portland, Maine, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. A curtain stick for retaining window shades in place having journalled on the end thereof a truck or wheel, said truck or wheel being pressed normally against the window casing, a brake being pressed normally against said truck or wheel, and means for releasing said brake, substantially as described. 2nd. A curtain stick for retaining window shades in position having a truck or wheel journalled in bearings in the end thereof, said bearings being adapted to allow of a limited motion at right angles to the casing, a spring actuated brake for checking the rotation of said wheel, and at the same time forcing it against the casing, substantially as described. 3rd. A curtain stick composed of two hollow tubes connected by an open centre piece, a truck or wheel journalled in bearings in the outer end of said tubes, said bearings being adapted to allow of a limited motion at right angles to the casing, a spindle extending through each of said tubes into said centre piece, the outer end of each spindle being provided with a brake adapted to bear against one of said wheels, a spring for forcing each spindle outward, and a cam or button pivoted in said centre piece so arranged as to retract the said spindles when turned, substantially as described.

No. 42,638. Land Roller. (*Rouleau d'agriculture.*)

Charles Lucian Barrett, Kent, Michigan, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In combination, the frame work, a pair of rollers having independent shafts, the independent bars *e*, *f*, at the inner adjacent ends of said shafts, each of said bars being pivotally connected to the frame to have lateral and vertical movement, the universal connections between the said bars and their respective roller shafts, and the arms *c*, connected to the outer ends of the roller shafts by a universal joint, said bars being pivoted to the frame to move laterally, and held against vertical movement whereby the frame is supported by the said laterally movable levers, and the rollers permitted to adjust themselves laterally, substantially as described. 2nd. The described roller consisting of the heads and a series of castings forming the periphery, each having a central projection and flanges on each side thereof, said flanges bearing against each other, and the means engaging both flanges to hold them in place, substantially as described. 3rd. In combination, the threaded spokes and the sections or bars having overlapping flanges through which the spokes pass, and the nuts for holding the flanges to the spokes, substantially as described.

No. 42,639. Tightener for Tires. (*Lien de jante.*)

John P. Ross, Waterloo, Alabama, U.S.A., 15th April, 1893; 6 years.

Claim.—A tire tightener comprising in combination, the recessed tire clamps, the guide plate G, provided with arms pivoted near the centre of the same adapted to bear against the said clamps, of a secondary guide plate fastened together with bolts, and a threaded bolt having suitable nut and washer which passes through the sectional guide plate and bears against the guide plate, all substantially as shown and described.

No. 42,640. Separator for Ores. (*Séparateur de minerai.*)

Orrin Burton Peck, Chicago, Illinois, U.S.A., 15th April, 1893; 6 years.

Claim.—The process of treating and separating particles of metallic or mineral bearing substances of different degrees of specific gravity, which consists in subjecting them as introduced to the action of centrifugal force in a revoluble vessel rotating at a high degree of speed at the commencement of the operation and afterward at a diminishing speed, substantially as described.

No. 42,641. Oil Lamp. (*Lampe à huile.*)

Francis Thomas Vine, Eastington Rectory, Gloucester, England, 15th April, 1893; 6 years.

Claim.—1st. In an oil burning lamp the combination with the main wick tubes aa, of an auxiliary wick tube f having the screw threaded portion f^2 engaging in the screw threaded socket f^{1a}, the lever f^4, cross bar f^4, with ring f^5, and collars f^7 on said tube f, as and for the purpose set forth. 2nd. The combination with the wick tube f, having the slot g, of the pin g^1, with top g^4, and fulcrum eye g^2, for the purpose set forth. 3rd. The combination of a wick tube wheels h^3 for adjusting the wick, an extinguisher consisting of the plate h, hinged to cross bar h^1, with bars h^2, having teeth to engage with wheels h^3, and a sliding guard and disengagement plate j^3, for the purpose set forth.

No. 42,642. Electric Welding Apparatus.

(*Appareil électrique pour souder.*)

Hermann, Lemp, Lynn, Massachusetts, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In an electric metal working apparatus, fixed current bearing electrodes making contact with the work and through or by which the work slides in the welding upsetting, or other operation, as and for the purpose described. 2nd. In an electric metal working apparatus, plungers or current carrying electrode working in lines converging upon the work, and means for moving the work between said plungers at right angles to the line in which said plungers move. 3rd. The combination, in an electric metal working apparatus, of a current clamp or electrode bearing on the work, and a mechanical clamp for grasping the work and moving it by the current clamp, as and for the purpose described. 4th. The combination, in an electric metal working apparatus, of current carrying slides or plungers bearing laterally on the work, and mounted on a fixed support, and a centering chuck mounted on a longitudinally movable slide, as and for the purpose described. 5th. In an electric metal working apparatus, the combination, with a contact plunger or rod adapted to move laterally toward the work, of a spring for forcing the same against the work and a cam plate for disengaging it, as and for the purpose described. 6th. In an electric metal working apparatus, the combination, with two or more current carrying electrodes working in transverse lines to engage and disengage the work, of a cam plate for moving said plungers outward away from the work, as and for the purpose described. 7th. In an electric metal working apparatus, the combination, with the secondary for the transformer, of a block 7 at the terminal thereof, and a series of plungers 13, mounted therein and bearing laterally upon the work, as and for the purpose described. 8th. In an electric metal working apparatus, the combination, with the block or bearing 7, of the plungers 13, working in the same, springs 14 for pressing the same inward, and a cam plate 16, engaging with pins projecting from said plungers, as and for the purpose described. 9th. In an electric metal working apparatus, the combination, with the current carrying electrodes bearing on the same and adapted to make rubbing or sliding contact, therewith, of means for rotating the work in contact with such electrodes, as and for the purpose described. 10th. In an electric metal working apparatus, the combination, substantially as described, of a number of current carrying electrodes consisting of reciprocating plungers operating in lines converging upon the work and adapted to make sliding contact, and means for rotating the work while the plungers make rubbing or sliding contact therewith. 11th. The combination, substantially as described, in an electric metal working apparatus, of two rotary chucks or holders and two sets of current carrying electrodes mounted between said chucks or holders, and adapted to make sliding or rubbing contact with the work when rotated, as and for the purpose described. 12th. The combination, substantially as described, of two rotary chucks or holders, means for imparting endwise movement to one of the same, and current carrying electrodes mounted between the chucks or holders and adapted to make sliding contact with the work when the same is moved longitudinally or is rotated. 13th. In an electric metal working apparatus, the combination, substantially as described, of two rotary chucks or holders, means for imparting endwise movement to one of said chucks, and current carrying electrodes mounted between said chuck and the part of the work to be heated and adapted to make rubbing or sliding contact with the work when it is given an end movement or is rotated. 14th. The combination, in an electric metal working apparatus, of a reciprocating contact adapted to engage the work latterally and having a solid contact end, and a pipe or passage for delivering the cooling fluid against the inner side of the contact end, as and for the purpose described. 15th. The combination, in an electric metal working apparatus, of an electric contact, a piston for forcing the same against the work, a hollow stem or support extending from the piston and carrying said contact, a passage from the rear of the piston, whereby a cooling fluid employed in operating the piston may be brought to bear on the contact, and pipes or passages for withdrawing the fluid from the hollow stem or support.

No. 42,643. Elevator. (*Elévateur.*)

Marvin Y. Calcutt, Seattle, Washington, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In an elevator of the class described, the combination of a screw having a vertical axis and operating in vertical screw racks, a car located above and supported by the screw, an electric motor located between the car and screw, and gearing communicating motion from the former to the latter, as set forth. 2nd. The herein described screw elevator, having an electric motor and screw located below the car, as and for the purpose set forth. 3rd. In an elevator, the combination of vertical screw racks, a single screw having a vertical axis engaging said racks, an electric motor movable with the screw and actuating the latter at a point at or near its periphery, as set forth. 4th. In an elevator, the combination of a car, a screw having a vertical axis and a diameter equal or nearly equal to that of the car, and an electric motor provided with a horizontal armature shaft geared to the screw, as and for the purpose set forth. 5th. In an elevator of the class described, the combination of vertical screw racks, a single screw having a diameter equal to the diametrical distance between the racks, a car or cage supported by or upon said screw, and a device, substantially as described, for adjusting the screw vertically in relation to the weight it supports, substantially as described. 6th. In an elevator, a screw having a vertical axis operating in vertical fixed screw racks, a car or cage supported by or upon the screw, an electric motor geared to actuate the screw, and an adjusting device, substantially as described, for adjusting the gearing in relation to the screw, for the purpose of taking up wear between the parts, in the manner and for the purpose set forth. 7th. In an elevator, the combination of a screw having a vertical axis and operating in vertical screw racks, a car carried by or supported upon the screw, an electric motor located in a frame depending from the car and geared to the screw, roller bearings interposed between the screw frame and the weight supported thereby and a central adjusting screw to regulate the pressure on the rollers, substantially as described. 8th. In an elevator, a screw having a vertical axis and engaging vertical screw racks, a car located above the screw, a frame suspended from the car, a motor mounted in the frame and having a horizontal armature shaft provided with a pinion, a vertical shaft carrying gears engaged by a pinion, the lower end of said shaft being also provided with a pinion to actuate the screw, and an adjustable screw for moving the shaft laterally, as and for the purpose described. 9th. In combination, with an elevator car, an electric motor secured to rise and fall with the car, electric cables leading from the car to a drum located at the top of the elevator well, said drum being provided with cable receiving grooves, and a counterbalance rope winding in a groove between the cable grooves, as set forth. 10th. In combination, with an electrically actuated screw and fixed vertical screw racks, counterbalancing weights secured to relieve the screw, an electric motor secured to move with a car or cage, and electrical connections controlled from within the car, as specified. 11th. In an elevator, the combination of a screw having a vertical axis, fixed screw racks, a car or cage, an electric motor geared to the screw, and adjustable devices connected with the gearing and screw, whereby they are regulated, in the manner and for the purpose set forth. 12th. In combination, with a screw, having a vertical axis, a screw frame to which the screw is removably secured, as specified.

No. 42,644. Cable Car Grip.

(*Grippe pour chemin de fer funiculaire.*)

David D. Nolley, Wilson, North Carolina, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. A cable grip comprising a car standard, a plate carrying a grip, and automatically acting connecting devices between the plate and standard. 2nd. A grip comprising a car standard, a plate carrying a grip, and automatically acting latches which connect the plate and the standard. 3rd. A grip comprising a car standard, a plate carrying a grip, hooks upon which catch the other, and a means for automatically operating the hooks at the intersection of cross cables, for moving the hooks alternately out of the way of the crossing cable. 4th. A grip comprising a car standard, a plate carrying a grip, hooks pivoted upon the plate having their hooked ends engage the standard, and a means for turning the hooks upon their pivotal points, and disengaging them from the car standard, and a means for returning them to position, substantially as described. 5th. A grip comprising a car standard, a plate carrying a grip, and a vertically moving device upon the car for operating the grip, and automatically operating hooks which connect and disconnect alternately the standard and the plate, substantially as specified. 6th. A grip comprising a revoluble standard upon the car, a plate carrying a grip, hooks pivoted upon the plate which incline away from the direction of travel, and a stationary incline which engage and operate the hooks, substantially as and for the purpose described. 7th. A grip comprising a revoluble standard, a plate carrying a grip, hooks which automatically connect and disconnect the plate from the standard, and a vertically moving device at the centre of the standard to operate the grip, substantially as set forth. 8th. A grip comprising a car standard, having pins or rollers, a plate carrying a grip, hooked levers pivoted to the said plate and catching over the said rollers, and an operating device held stationary for operating the hooks and disengaging them alternately from the said car standard, substantially as specified. 9th. A grip comprising a car standard having a laterally extending portion provided with sockets, pins or rollers in the sockets, a plate carrying a grip hooked levers pivoted upon the plate which engage the said rollers, and a means for turning the hooks

upon their pivots and alternately disengaging them from the standard, substantially as set forth. 10th. A grip comprising a car standard having projections or pins, a plate carrying a grip, hooked levers pivoted between their ends upon the plate, for engaging the pins or projections, and a stationary incline which engages the lower ends of the hooks and turns them upon their pivots for the purpose described. 11th. A grip comprising a car standard having pins or rollers, hooked levers, a plate to which the levers are pivoted, shoulders upon the levers, and stops upon the standard which the shoulders engage, and a means for automatically operating the levers, substantially as specified. 12th. A grip comprising a car standard, having sockets provided with projections or pins, a plate carrying a grip, levers pivoted between their ends upon the plate which have their upper ends provided with hooks to engage the pins or projections, springs for holding the hooked ends in engagement therewith, and a stationary incline which engages the lower ends of the levers automatically, and disengages them from the standard, substantially as set forth. 13th. A grip comprising a car standard, a plate carrying a grip, hooked levers pivoted between their ends to the said plate which engage with the standard, the levers having laterally extending rollers, and an incline which engages the rollers for operating the hooks, substantially as specified. 14th. A grip comprising a car standard, a plate carrying a grip, hooked pivoted levers for connecting the plate and the standards, and an operating device having an incline for engaging and operating the levers, and a straight portion for holding the levers in this operated position for a prescribed distance, substantially as shown. 15th. A grip comprising a car standard, a plate carrying a grip, hooked levers which connect the standard and the plate which are pivoted between their ends, an incline in the front of the cross cable which engage the lower ends of the levers, and automatically detach the same from the standards.

No. 42,645. Manufacture of Fancy Yarn. (*Fabrication de filaments de laine mêlés avec du fil de coton ou de soie.*)

John Robb, Oxford, Nova Scotia, Canada, 15th April, 1893; 6 years.

Claim.—The use of a yarn or thread of any character or material in connection with a finisher, card or condenser in the manufacture of spotted, flaked or fancy yarn, substantially as and for the purpose hereinbefore set forth.

No. 42,646. Gas Stove. (*Poêle à gaz.*)

John W. Danforth, Buffalo, New York, U.S.A., 15th April, 1893; 6 years.

Claim.—1st. In a gas cooking stove, the combination with the inner and lower supporting frames of a warming chamber at one side of the stove, an oven located at the opposite side, composed of double walls forming flues through which the heat passes, a sliding door forming the front removable side of the oven, a removable shelf 9, forming the top of the oven, a water reservoir located in the top of the upper frame, a jacket inclosing the water reservoir and forming a flue between it and the reservoir, and a series of burners located below the stove top from which the heat passes to the warming chamber and to the oven flues and water reservoir, substantially as described. 2nd. In a gas cooking stove, the combination with the other walls of the oven, of a hinged wall forming one wall thereof, adapted to be thrown back to one side so as to expose the whole top of the stove for use, substantially as described. 3rd. In a gas cooking stove, an oven consisting of three hollow walls open at the top and bottom, one of the walls being hinged so as to be thrown back to expose the whole top of the stove, and a sliding door adapted to slide vertically in sideways in the two opposite walls, substantially as described. 4th. A gas cooking stove consisting of three sections, a lower section in which the burners are located, a section in which the oven and warming chambers are located, and top section in which is located the water reservoir, substantially as and for the purpose described. 5th. A gas cooking stove having the water reservoir located at the top and an intermediate cooking and baking section below it, and a series of burners located below the intermediate section, and a means for admitting or shutting off the gas, whereby the heat after being used in the cooking and baking section passes up to the water boiler, substantially as described.

No. 42,647. Machine for Cutting Fabrics.

(*Machine à tailler les draps.*)

The Becker Machine Company, assignee of Henry S. Becker, all of Charlottesville, Virginia, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. In a cutting machine, a feeding device, a presser guage bar, a cutting apparatus, and a drawer and holder, combined to operate as described. 2nd. In a cutting machine, a cutting apparatus, a guage device and a drawer and holder co-acting therewith combined to operate as described. 3rd. In a cutting machine, the combination of a work table, a cutting apparatus, a vertically movable pressure guage bar along the inner side of the cutting apparatus, a vertically movable and horizontally adjustable frame, screws whereby said frame carrying said bar can be adjusted horizontally to vary the distance between said bar and the cutting apparatus, and operating connections by which the frame and said bar are raised and lowered at the proper periods, substantially as described. 4th. In combination, a work table, a cutting apparatus a frame above the table, a rock shaft mounted therein, operating connections to rock said shaft, arms depending from said shaft, the feeder bar at its ends journalled in the lower ends of said arms and having the engaging devices on one edge, and a spring to hold said grasping devices in engagement with material on the table, substantially as described. 5th. In combination, a work table, a frame extending up from such table, a vertically movable pressure bar at the inner side thereof, and having a lateral arm or projection, a controlling rod extending up from said bar, a guide carried by such frame for such rod, a spring forcing said bar down, a rocking lever mounted on such frame and provided with suitable means for raising said rod and the bar connections from the operating shaft to rock said lever, substantially as described. 6th. In a cutting machine, a work table, a frame extending above the table, the stationary blade, the corresponding vertically movable blade pivoted at the end, the operating toggle links for said swinging blade pivoted to the blade and to said frame, a pitman or link to expand said toggle links, a driving shaft, means controlled by said shaft to expand the toggle to throw down the movable blade, and a spring to draw up said blade. 7th. In a cutting machine, the combination of the work table having the upright frame, a stationary blade, a corresponding pivoted blade, the transverse sliding plate above the pivoted table, the toggle links pivoted to the pivoted blade, and to said plates, and the frame and means for operating said parts, substantially as described. 8th. In a cutting machine, the combination of a working table, a frame extending above the table, a drive shaft having a cam, a stationary cutting blade, a corresponding vertically movable blade pivoted at one end, the toggle links for forcing down said blade, the spring for forcing said blade up, the bell crank lever having one end connected to the joint between said links, the lever arranged to be depressed by said cam and connected to the other end of said crank lever. 9th. In a cutting machine, the combination of cutting apparatus, frame, and the herein described drawer and holder, comprising a rock shaft in the frame, means for rocking the same, clamp carried by loose arms depending from said shaft, and consisting of a rigid and pivoted jaw, a spring to draw the clamp towards the cutting apparatus, and a clasp controlling arm to draw said clamp back, having a movable dog to lock and release said clamp, substantially as described. 16th. In a cutting machine, the combination, with the cutting apparatus and a pressure guage bar, of a holding and drawing clamp consisting of a clasp composed of a pair of jaws, arms swinging from a rock shaft carrying said clamp, a dog or trigger for closing or allowing the clamp to open, and means, substantially as described, for operating said parts, substantially as set forth. 11th. In a cutting machine, the combination of a frame cutting apparatus, a rock shaft, a drawing and holding mechanism consisting of a clamp comprising rigid and pivoted jaws, arms loose on and depending from said shaft by loose arms, a controlling and operating arm for said clamp, a spring connection between said operating arm and the shaft, for the purpose set forth, and means controlling said pivoted jaw. 12th. In combination, a work table, a frame extending above the same, a cutter, a rock shaft in said frame, swinging clasp carried by said frame and comprising stationary and pivoted jaws, an arm loose on and depending from said shaft for controlling the swing of said clasp, an arm rigid with said shaft and normally parallel with said loose arm, and a spring yieldingly holding said loosely and rigidly mounted arms together, substantially as set forth, and controlling means, substantially as described, for said pivoted jaw. 13th. In a cloth cutting machine, the combination of a work table, a frame extending above the same, a drive shaft, a cutter operated from said shaft, a rock shaft in said frame, a swinging feeder depending from said rock shaft, an additional rock shaft in said frame, a swinging drawer and holder depending from and operated by such additional rock shaft, said two rock shafts being connected to operate together by crank arms and connections, and operating connections from said drive shafts to one end of said rock shaft, substantially as described. 14th. In a cutting machine, the combination of a work table, an upright frame above the same, the drive shaft having the cams, a cutter, a lever engaging and operated by one of said cams and connected to said cutter to swing the same, the vertically movable pressure guage bar, a frame carrying the same, a lever operated by one of said cams and connected with said guage bar frame to swing the same, the swinging feeder, a rock shaft carrying the same mounted in said upright frame carrying such drawer and holder, and a lever operated by one of said cams, and connected to control both of said rock shafts. 15th. In a cutting machine, the combination of a work table, a cutter, the feeder on one side of the cutter, the drawer and holder on the opposite side of the cutter, the pressure guage bar operating in conjunction with such drawer and holder, a vertically swinging frame carrying such bar at the inner side of the cutter, controlling connections for such frame to raise and lower the bar at the proper periods, and operating mechanism, substantially as described. 16th. In a cloth cutting machine, the combination of a work table, a cutter, a vertically movable pressure guage bar at the inner side of the cutter, having the lower projecting longitudinal edge to catch the welts in the fabric, a vertically movable support or carrier for such bar, operating connections and mechanism therefor, the drawer and holder on the opposite side of the cutter, comprising a clasp arranged to operate in conjunction with such bar and to grasp the fabric and draw it beneath the cutter and bar until the bar engages a welt and holds the fabric, and operating connections and mechanism, substantially as described.

No. 42,648. Whiffletree Hook. (*Crochet de palonnier.*)

Charles E. Jones, Wheatland, Josia H. Childers and Joseph S. Hartman, Hermitage, all of Missouri, U.S.A., 17th April, 1893; 6 years.

Claim.—In combination with a whiffletree of a sleeve mounted thereon and having a recess in its outer end, and a hook flared outwardly at its free end, a flat spring having a free end bearing against the rear portion of said hook and normally closing the hook and outwardly flared at 6 to form, with the outwardly flared portion of the hook, an entrance mouth, the front end of said spring being mounted in the recess in the said sleeve and held in position by a single fastening to thereby prevent the spring from turning or becoming displaced, substantially as described.

No. 42,649. Can Filling Machine.

(*Machine pour remplir les bidons.*)

James S. Moore, Sullivan, and William S. Bristol, Flat Rock, both of Indianna, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. In a can filling machine, the combination with the salt chamber having bottoms S, and T provided, respectively, with opening 1 and spout V, of the sliding valve 2, having port 3 adapted to register with said opening or said spout, and arranged to slide between said bottoms, the slotted valve rod 4 attached to said valve, rod 7 attached to agitator 6 and provided with pin 10 arranged to engage said valve rod, the revoluable cam 13, and the intermediate connecting mechanism connecting said cam and said rod 7 so as to impart a reciprocating movement to the rod, all arranged to co-operate substantially as set forth, whereby at each revolution of the cam the agitator is first caused to traverse the opening in the bottom of the salt chamber and the valve is then moved in the same direction. 2nd. In a can filling machine, the combination of the salt chamber having bottom S, having opening I, sliding valve 2, false bottom T, provided with spout V, and the steam coil 15 arranged beneath said false bottom and surrounding said spout as and for the purpose set forth. 3rd. In a can filling machine, the combination with the can and the discharge spout N, of the face plate 17, having on its under side flange 20, and recess 23, surrounding said flange, said recess being of less diameter than the can to be filled, and having extensions 24 extending beyond the periphery of the can, all arranged to co-operate substantially as set forth.

No. 42,650. Friction Roller. (*Bâton de rideaux à frottement.*)

The Brussels Tapestry Company, Chauncey, assignee of George A. Crisson, Tarrytown, all of New York, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. The within described compound friction clutch for curtain rollers, consisting of a sleeve with an interior conical recess, a revoluble cone seated therein, and a fixed abutment F, said cone and abutment having on their juxtaposing faces intermeshing ratchet and spring pawls, in combination with a torsion spring all arranged within tubular casing A^1, substantially as described. 2nd. The abutment F, centrally bored for passage of spindle G, provided with transverse aperture for reception of pin *d*, to connect it through aligning orifice *k*, to said spindle, said abutment having pawls *f*, *f*, roller E, having recess bearing for end of spindle G, cone F^1, its surface provided with outwardly extending ratchets, said abutment and cone mounted on spindle G, and maintained separated thereon by spiral spring *g*, coiled over the spindle intermediate of their faces, the cone clutch F^1, loosely seated in socket of metallic sleeve H, all in combination with said sleeve and fixed spindle of spring actuated curtain roller, substantially as described. 3rd. In a spring curtain roller, an attached shade having folds of its upper edge inserted within lengthwise channel of outer tubular casing A^1, and a counterpoise weighted rod at its opposite edge, said casing divided into sections, one section provided with interior torsion spring S, the other section supplied with extensible wooden roller E, adapted to be extended lengthwise said roller having seated within one of its ends terminal points of spindle G, abutment F, secured to the spindle, and metal sleeve H, adjusted within one end of the tubular casing, said sleeve having conical recess *j*, into which is loosely seated friction cone clutch F^1, said abutment and clutch provided on their juxtaposing surfaces with intermeshing pawls and ratchets, all in combination with spindle passing axially through the sleeve, abutment and cone F^1, substantially as described. 4th. The combination in a curtain roller having within one end of incasing tube A, axially revoluble spindle G, of torsion spring S, friction cone clutch F^1, abutment F, provided on their respective faces with intermeshing ratchets and spring pawls, revoluble sleeve H, and a weighted shade, all arranged as set forth and illustrated, whereby the attached shade is automatically maintained during ascent and descent at any desired elevation, substantially as described. 5th. The combination in a spring actuated curtain roller, of an outer tubular casing containing a winding spring within one section of its length and an interior extensible wooden roller carrying abutment F, and an aligning revoluble sleeve H, having on its inner face an obliquely inclined socket *j*, into which is seated cone clutch F^1, said clutch and abutment having on their juxtaposing faces ratchets and intermeshing spring pawls, said sleeve, abutment, and cone axially mounted on spindle G, having short coiled spring *g*, surrounding the spindle intermediate of the faces of said cone and abutment, whereby as rotary motion is imparted to the roller in either direction said cone will be gradually pressed against its seat within the sleeve, and thereby control the upward and downward motion of shade attached to the device, as and for the purpose intended, substantially as described.

No. 42,651. Separator for Ores. (*Séparateur de minerai.*)

Orrion Burton Peck, Chicago, Illinois, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. In machinery for centrifugally treating and separating particles of metallic or mineral bearing substances, the combination of a revoluble vessel, means for rotating such vessel, and means for gradually and automatically decreasing its speed of rotation from the commencement to the end of the operation, substantially as described. 2nd. In machinery for centrifugally treating or separting particles of metallic or mineral bearing substances, the combination of a revoluble vessel, an engine generating and supplying power for the rotation of such vessel, means for transmitting and applying such power, and means for gradually and automatically decreasing the speed of the engine, and thereby the speed of rotation of the revoluble vessel, from the commencement to the end of the operation, substantially as described.

No. 42,652. Nut Lock. (*Arrête-écrou.*)

James C. Cooke, Malton, Ontario, Canada, 17th April, 1893; 6 years.

Claim.—1st. A nut lock comprised of a bolt, a longitudinal groove formed in the said bolt, a washer, a lug projecting inwardly from said washer and adapted to enter the groove in the said bolt, a nut, and means for locking together the end of the said washer, substantially as and for the purpose set forth. 2nd. In a nut lock composed of a bolt, a longitudinal groove formed in the said bolt, a washer, a lug projecting inwardly from said washer and adapted to enter the groove in the said bolt, a nut, a pin within the said nut and adapted to enter a recessed portion of the adjacent face of the said washer, substantially as and for the purpose set forth.

No. 42,653. Valve Gear for Engines.

(*Mécanisme de soupape pour machines.*)

The Woolf Valve Gear Company, assignee of Ellis Woolf, all of Minneapolis, Minnesota, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. A carrier for a valve gear, consisting of a rigid bell crank lever having one arm loosely mounted on the eccentric shaft and the other connected to some independent support, with freedom for a limited movement in the direction of its length, but without freedom to move at an angle to the line of its to and fro motion, whereby while automatically adjusting the gear to the rising and falling of the shaft, the carrier always presents a rigid base of resistance to the valve thrust. 2nd. In a locomotive, the combination with the driving axle, the eccentric, and the strap, of a restraining device for directing the outer end of the strap in a definite path variable at will, and a rigid bell crank lever having one arm loosely mounted on the axle and supporting the restraining device and the other arm connected to the engine frame, with freedom for a limited to and fro motion to compensate for the rising and falling of the axle, but always constant and rigid with reference to the valve thrust. 3rd. In a locomotive, the combination with the driving axle, eccentric, and strap, of a restraing device adapted to constrain the outer end of the strap to pursue a definite path variable at will, and a rigid bell crank carrier for supporting said restraining device, having one of its arms loosely mounted on the axle and the other connected to the frame by a pivoted hanger, substantially as and for the purpose set forth. 4th. In a locomotive, the combination, with the axle, the eccentric, and the strap, of the standard boxed on the axle, the arm or lever rigid with the standard and angularly extended therefrom, of greater length than the standard, the pivoted hanger pivotally connecting the outer end of said arm with the frame, and a restraining device for the outer end of the strap mounted on said standard, substantially as and for the purpose set forth. 5th. In a radial valve gear, a restraining device for constraining the outer end of the eccentric strap to pursue a definite path variable at will, consisting of a rock shaft provided with a rigid arm and a bar pivotally connected at one end to said arm and at the other to said strap. 6th. In a locomotive, the combination with the eccentric shaft, of the eccentric strap, the standard loosely boxed on said shaft, a support for said standard, a rock shaft on said standard provided with a rigid arm, and a bar pivotally connecting said arm and the outer end of the said strap, substantially as and for the purpose specified.

No. 42,654. Process of Drawing Sheet Metal.

(*Procédé à étirage de feuilles métalliques.*)

Edwin Norton and Oliver W. Norton, assignees of John W. Bodge, all of Chicago, Illinois, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. The process of drawing metal sheets into cylindrical or other shapes, consisting in first drawing the sheet in one direction and then drawing it in the opposite direction and turning the article or shape first drawn inside out, substantially as set forth. 2nd. The process of drawing metal sheets, consisting in successively reversing the direction in which the metal is drawn, substantially as specified. 3rd. The process of drawing metal sheets into shapes, consisting in first drawing it into a hollow or vessel form and then drawing said

form first produced into a form of smaller diameter and at the same time turning the form first produced inside out, substantially as specified. 4th. The process of producing from a hollow sheet metal form a form of smaller diameter and greater length or depth, consisting in turning said first mentioned form inside out, substantially as specified. 5th. The process of producing a smaller tube from a larger tube, consisting in turning, flowing, or drawing the larger tube around the edge of an annular die and thus turning the larger tube inside out and producing the smaller tube, substantially as specified. 6th. The sheet metal drawing dies for turning a vessel or shape inside out and drawing it into a vessel or shape of smaller diameter, consisting of a punch or male die C and an annular die C^1, upon the outer periphery of which the vessel to be reversed or turned inside out fits, substantially as specified. 7th. The sheet metal drawing dies for turning a vessel or shape inside out and drawing it into a vessel or shape of smaller diameter, consisting of a punch or male die C and an annular die C^1, upon the outer periphery of which the vessel to be reversed or turned inside out fits, said annular die C^1 having a rounded edge or shoulder c, substantially as specified. 8th. The sheet metal drawing dies for turning a vessel or shape inside out and drawing it into a vessel or shape of smaller diameter, consisting of a punch or male die C and an annular die C^1, upon the outer periphery of which the vessel to be reversed fits, and a follower or presser C^2, substantially as specified.

No. 42,655. Register of Persons Entering Cars, Etc. (*Registre pour personnes entrant dans les chars, etc.*)

Adrian Gifardo, Valparaiso, Chili, 17th April, 1893; 6 years.

Claim.—1st. In an apparatus for the purposes above specified, the combination of suitable arms or gates pivoted or hinged at one extremity thereof, and one or more curved or segmental sliding bars or gates arranged to close when the pivoted or hinged gates are opened for the purpose set forth. 2nd. In an apparatus for the purposes specified, the employment of a set of curved or segmental sliding bars or gates acted on by a flexible rod which is bent to one side in moving the said bars outward and reacts to restore the same to their normal position, substantially as described. 3rd. An apparatus for the purposes above specified constructed substantially as described with reference to the accompanying drawings and operating as set forth.

No. 42,656. Gas Stove. (*Poêle à gaz.*)

James Gibbons, Jersey, New Jersey, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber closed at the front by a transparent or partly transparent outer wall, of partitions located above and below said chamber, which has back and end walls set away from the stove body, and a burner flaming into or toward the fire chamber, substantially as described, whereby a superheating chamber for air maintaining combustion at the burner is formed all around the fire and mixing chamber except at its front, through which the fire or incandescent interior of the stove is visible, as herein set forth. 2nd. In a gas stove, the combination, with the stove body closed at the front and provided with an interior fire and mixing chamber having a rear wall b^1, b^2, set away from the adjacent wall of the stove body, of partitions b^4 D above and below the fire chamber and forming an air superheating chamber next the fire chamber, said stove body having an opening for air below the partition b^4, and a burner flaming into or toward the fire chamber, substantially as herein set forth. 3rd. In a gas stove, the combination, with the stove body closed at the front and provided with an interior fire and mixing chamber having a rear wall b^1, b^2, and end walls b^3 b^3, set away from adjacent walls of the stove body, of partitions b^4 D, above and below the fire chamber and forming an air superheating chamber all around the fire chamber except at its front, said stove body having an opening for air below the partition b^4, and a burner flaming into or toward the fire chamber, substantially as herein set forth. 4th. In a gas stove, the combination, with the stove body closed at the front by a transparent or partly transparent outer wall and provided with an interior fire and mixing chamber having a rear wall b^1, b^2, set away from the adjacent wall of the stove body, of partitions b^4 D, above and below the fire chamber, and forming an air superheating chamber next the fire chamber, said stove body having an opening for air below the partition b^4, and a burner flaming into or toward the fire chamber, substantially as herein set forth. 5th. In a gas stove, the combination, with the stove body closed at the front and provided with an interior fire and mixing chamber having a rear wall b^1, b^2, set away from the adjacent wall of the stove body, of partitions b^4 D above and below the fire chamber and forming an air superheating chamber next the fire chamber, said stove body having an opening for air below the partition b^4, a plate C below the partition b^4, and forming a passage c conducting air directly to the rear wall of the fire chamber, and a burner flaming into or toward the fire chamber, substantially as herein set forth. 6th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber, of interior partitions forming an air superheating chamber within the stove body next the fire chamber, said fire chamber formed or provided with two distinct passages or series of passages for the superheated air, one passage or series of passages receiving superheated air to maintain combustion at a burner and the other passage or series of passages receiving a portion of the superheated air and conducting it to the fire chamber at a point or points beyond the flame of the burner to assure more complete combustion, substantially as herein set forth. 7th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber closed at the front by a transparent or partly transparent outer wall, of interior partitions forming an air superheating chamber within the stove body next the fire chamber, said fire chamber formed or provided with two distinct passages or series of passages receiving superheated air, one passage or series of passages receiving superheated air to maintain combustion at a burner and the other passage or series of passages receiving a portion of the superheated air and conducting it to the fire chamber at a point or points beyond the flame of the burner, to assure more complete combustion, substantially as herein set forth. 8th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber, closed at the front and provided with bottom openings and having refractory linings at its inner or rear wall, of interior partitions forming an air superheating chamber within the body next the fire chamber, said fire chamber linings provided with or set so as to form passages h, i, discharging superheated air from the lower openings into the fire chamber, at a point beyond the flame of the stove burner, substantially as herein set forth. 9th. In a gas stove, the combination, with the stove body, having an interior fire and mixing chamber provided with a fire brick or refractory lining G, H, I, of partitions b^4, D, in the stove body, forming next the fire chamber, a chamber E, for superheating air, said fire chamber provided with one or more passages b^5, receiving hot products of a burner and the main body of superheated air from the chamber E, and also provided with passages b^6, g, h, i, at the linings C, H, I, which receive part of the superheated air, and discharge it into the fire chamber at a point removed from the hot product inlets b^5, substantially as herein set forth. 10th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber, closed at the front by a transparent or partly transparent outer wall, and provided with inlets for superheated air and hot products from a burner, and partitions forming with the stove body and fire chamber, an air superheating chamber next the fire chamber, of a perforated refractory shell or body placed in the fire chamber and visible through its front and forming a combustion chamber receiving hot products from the burner and air from the superheating chamber, substantially as herein set forth. 11th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber closed at the front and provided with inlets for superheated air and hot products from a burner, and partitions forming with the stove body and fire chamber, an air superheating chamber next the fire chamber, of a perforated refractory hollow shell or body placed in the fire chamber and ranging along its bottom, rear and end walls, and forming a combustion chamber, receiving hot products from the burner and air from the superheating chamber, substantially as herein set forth. 12th. In a gas stove, the combination, with the stove body having an interior fire and mixing chamber, closed at the front and having inlets for superheated air and hot products from a burner, and partitions forming with the stove body and fire chamber, an air superheating chamber next the fire chamber, said fire chamber also having auxiliary passages receiving part of the superheated air and discharging it into the fire chamber at a point removed from the hot product inlet at the burner, of a perforated refractory hollow shell or body, placed in the fire chamber and directly receiving hot products from the burner, with air from the upperheating chamber, the auxiliary superheated air inlets to the fire chamber being beyond or outside of the perforated shell or body, substantially as herein set forth. 13th. In a gas stove, the combination, with the stove body having an air inlet c^1, of a fire chamber having passages b^5, h, i, partitions b^4, D, in the stove body, and forming therein an air superheating chamber behind the fire chamber, and a perforated shell or body K, in the fire chamber, below the air inlet i, and receiving hot products of a burner at the fire chamber passages b^5, substantially as herein set forth. 14th. In a gas stove, the combination, with the stove body having an air inlet c^1, of a fire chamber, having passages b^5, h, i, partitions b^4, D, C, in the stove body, forming therein an air superheating chamber and air passage c, behind the fire chamber, and a perforated shell or body K, in the fire chamber below the air inlet i, and receiving hot products of a burner at the fire chamber passages b^5, substantially as herein set forth. 15th. In a gas stove, the combination, with the stove body having an air inlet at its upper rear part, of a fire and mixing chamber within the body, partitions forming an air superheating chamber behind and next the fire chamber, a jacket and partition forming an atmospheric air inlet next the back of the stove body, which communicates with the air superheating chamber within the body, and forming also a hot air passage behind said air inlet, and also forming hot product passages at both ends of the stove body, which communicate with the fire chamber and with the rear hot air passage, and a hot product outlet from the passage of the jacket, substantially as herein set forth. 16th. In a gas stove, the combination, with the stove body having an air inlet at its rear part, of a fire and mixing chamber within the body, partitions forming an air superheating chamber behind and next the fire chamber, a jacket W, and partition X, forming passages Y, w, w, w^2, at the rear and ends of the stove body, the lower openings w^1, being provided between the passages w, w, w^2, and an outlet for hot products from the rear passage w^2, said passage Y, opening to

the air at or near the base of the stove substantially as herein set forth. 17th. In a gas stove, the combination, with the stove body provided with a fire chamber and an adjacent air superheating chamber, of a burner consisting of two main pipes, one within the other, with a space between them, and a fluid fuel feed device communicating with one of the main pipes and the other pipe discharging hot products into the fire chamber, both main pipes communicating with each other at a place or places distant from the feed device, one of the two main pipes and the feed device of the burner being fitted to the walls of the stove body to form a mutual bracing for the body and burner, substantially as herein set forth. 18th. In a gas stove, the combination, with the stove body provided with a fire chamber and an adjacent air superheating chamber, of a burner consisting of two main pipes N, N, the outer pipe N, held to opposite walls of the stove body and having burner tubes or tips flaming into the fire chamber, and the inner pipe N, communicating at its outer ends with the pipe M^1, and a gas and air feed pipe O, communicating with the pipe N, at a point distant from its outlets to the pipe M, said pipes M, O, being fitted to the walls of the stove body to form a mutual bracing for the body and burner, substantially as herein set forth. 19th. In a gas stove, the combination, with the stove body provided with a fire chamber and an adjacent air superheating chamber, of a burner consisting of two main pipes, one within the other, with a space between them, a feed pipe communicating with one of the main pipes, the other pipe discharging hot products into the fire chamber, both main pipes communicating with each other at a place or places distant from the feed pipe, one of the main pipes and the feed pipe being fitted to the walls of the stove body to form a mutual bracing for the body and burner, independent gas and air inlets to the feed pipe consisting of a ring valve fitted adjustably to said pipe and having side openings admitting air, a gas supply nipple entering the ring valve, and a needle valve in the gas nipple, substantially as herein set forth. 20th. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, and a fluid fuel feed device communicating with one of the pipes, the other pipe having openings at which the burner flames, and both main pipes communicating with each other at a place or places distant from the fuel feed device, substantially as described, whereby the fluid fuel must traverse a sinuous course through the two main pipes to the point of ignition, as herein set forth. 21st. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, and independent gas and air inlets communicating with one of the pipes, the other pipe having openings at which the burner flames, and both main pipes communicating with each other at a place or places distant from the gas and air inlets, substantially as described, whereby the admitted gas and air must traverse a sinuous course through the pipes to the point of ignition as herein set forth. 22nd. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, a fluid fuel feed pipe forming a mixing chamber and communicating with one of the main pipes, the other main pipe having openings at which the burner flames, and both main pipes communicating with each other at a place or places distant from the feed pipe, and independent fluid fuel and air inlets at the feed pipe, substantially as described, whereby the air and fluid fuel admitted to and commingled in the feed pipe must traverse a sinuous course through the main pipes to the point of ignition, as herein set forth. 23rd. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, a fluid fuel feed device communicating with the inner pipe, the outer pipe having openings at which the burner flames, and both pipes communicating with each other at a place or places distant from the fuel feed device, substantially as herein set forth. 24th. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, a feed pipe communicating with the inner pipe and forming a mixing chamber, the outer having opening at which the burner flames, and independent fluid fuel and air inlets at the feed pipe, both main pipes communicating with each other at a place or places distant from the feed pipe, substantially as herein set forth. 25th. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, a fluid fuel feed device communicating with one of the pipes and the other pipe having openings at which the burner flames, both main pipes communicating with each other at a place or places distant from the feed device by perforations of the inner pipe breaking up the fluid fuel currents passing from one pipe to the other, substantially as herein set forth. 26th. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, a feed pipe communicating with one of the pipes and forming a mixing chamber, the other main pipe having openings at which the burner flames, both main pipes communicating with each other at a place or places distant from the feed pipe by perforations of the inner pipe breaking up the fluid fuel currents and independent fluid fuel and air inlets at the feed pipe, substantially as herein set forth. 27th. In a gas stove, the burner made with two communicating main pipes, one within the other, one of the pipes having openings at which the burner flames, the outer pipe having plugged or closed ends, and the inner pipe fitted to said ends for centreing it within the outer pipe, said inner pipe having perforations breaking up the fluid fuel currents passing through them from one pipe to the other, substantially as herein set forth. 28th. In a gas stove, the burner made with an outer pipe M, and an inner pipe N, perforated at its end parts, plugs or heads m^1, in the outer pipe to which the ends of the inner pipe are fitted, a feed pipe O, communicating with the inner pipe, and one or more burner tips or openings at the outer pipe, substantially as herein set forth. 29th. In a gas stove, the burner made with two main pipes, one within the other, with a space between them, one of said pipes having tips or openings at which the burner flames, a feed pipe communicating with the other pipe and forming a mixing chamber, both main pipes communicating with each other at a place or places distant from the feed pipe, a ring valve fitted adjustably on the feed pipe and having air inlet openings, a gas nipple discharging into the ring valve, and a needle valve in said nipple, substantially as herein set forth.

No. 42,657. Steam Generator. (*Générateur à vapeur.*)

Thomas Lishman, Manchester, England, April 17th, 1893; 6 years.

Claim.—1st. An apparatus for producing steam and heating air or water, consisting essentially of a vertically placed tube or tubes, the upper end or ends of which open into a reservoir communicating with a chamber for receiving and confining the steam generated by water contained in the said reservoir and tube or tubes direct into the said chamber, or into a chamber for receiving air heated in the said tube or tubes, one or more straight A-shaped or spiral tubes being placed inside of each of the first named tubes for heating the water or air therein, substantially as set forth. 2nd. In an apparatus for producing steam, the combination of the tubes *a*, arranged around the furnace in the form of a jacket, and the tubes *f*, reservoir *c*, steam chamber *d*, flue *h*, feed water heater *k*, and water channels *o* and i^1, all arranged substantially as and for the purpose described. 3rd. The combination with the apparatus for producing steam, herein described and illustrated of the regulating tank is fitted with the supply pipe *r*, valve *w*, float *z*, and connecting lever and rods x, y, a^1, substantially as set forth and represented. 4th. The use, in combination with apparatus for producing steam, of the door illustrated, comprising the two chambers e^1, e^1, air inlets y^1, z^1, gas supply pipe a^2, having a joint b^2, in the form of a cock, the axis of which is in a line with the door hinge aperture c^2, and tubes d^2, substantially as set forth. 5th. As a domestic heating apparatus, the tubes *a*, *f* and *c*, chamber *d*, box e^1, and burner *g*, substantially as set forth. 6th. The apparatus for heating air, comprising the tubes *a* and *f*, perforated chamber *d*, and box e^1, containing the tank *o*, and gas burner *g*, substantially as set forth. 7th. A cooking apparatus, comprising the tubes *a* and *f*, the box e^1, and the chamber *d*, containing the cooking chambers e^1 and o^1, substantially as set forth. 8th. The combination, with a cooking apparatus, constructed of tubes *a* and *f*, a box e^1, and a chamber *d*, containing cooking chambers e^1 and o^1, of the fire grate a^2, communicating by means of the passages o^2, o^2, with the interior of the tubes *f*, substantially as set forth.

No. 42,658. Machine for Making Nuts and Washers.

(*Machine à écrou et rondelle.*)

James P. Mason and Amor J. Mason, both of Morristown, and S. Lloyd Weigand, Philadelphia, all in Pennsylvania, U.S.A., April 17th, 1893; 6 years.

Claim.—1st. In a machine for punching washers from plate metal, the dies and punches arranged in rows with intermediate spaces equal to the outer dimensions of the washer, to punch washers from the plate from the portion intermediate between previous punching to avoid waste in the manner set forth, shown and described. 2nd. In a machine for punching washers from plate metal, the horizontally reciprocating slide having dies attached thereto upon opposite ends thereof, in combination with opposed stationary punches supported endwise by adjustable keys resting upon the stationary frame, substantially as and for the purpose set forth. 3rd. In a machine for punching washers from plate metal, the horizontally moving punches, each having a central aperture constructed and arranged to operate as a die, each in combination with a stationary die, and each provided with a central punch supported upon adjustable keys to adjust the position, of cutting and to compensate for wear, substantially as set forth. 4th. In a machine for punching washers from plate metal, the dies and punches arranged to telescope the one within the other, in combination with the discharging rods resting upon adjustable keys for expelling the washers and scrap, substantially as set forth. 5th. In a washer punching machine, the combination of cylindric punches and dies, provided with a retaining collar, with a correspondingly counterbored chuck, adapted to fit recesses in the frame and sliding head of the machine, substantially as set forth. 6th. In a washer punching machine, the series of punches and dies telescoping with each other, as described, in combination with a guiding plate reciprocating on a pivot for guiding and delivering the scrap and washers in opposite directions, substantially as set forth. 7th In a washer punching machine, the series of dies and punches arranged in conjunction with the feeding devices, as described, to cut washers from a plate of metal so closely as to sever the scrap located between the washers, in combination, with a pair of shearing blades, arranged to divide the marginal surplus metal of the sheet into short scrap, substantially as set forth. 8th. In a washer cutting machine, the arrangements of dies in series at such distances from each other that the plate intervening between the contiguous die apertures shall include a circular space equal to the outer diameter of the washers, and thereby effect a

severance of the scrap located between the washers when such intermediate portion of plate is punched, substantially as set forth. 9th. In a machine for cutting hexagon nuts and washers, or like shape, the method of arranging the dies so as to present angles to the side of the plate and produce triangular scrap, as described, and straight lines toward the end of the plate, and feeding the plate so that the cut opening will, upon one or more of its sides, coincide with the side of the washer next cut without intervening scraps, substantially as set forth. 10th. In dies for making hexagon nuts from plates of metal, the punches and dies arranged in series so as to place one nut with sides on the line of severance of preceding nuts in dies of the series, in combination with a second series of dies and punches, adapted to punch the eyes of nuts from plate metal to centrally register with the series of hexagon dies for severance of the nuts from the plate, substantially as set forth. 11th. In dies for simultaneously punching several nuts from the same plate of metal, the arrangement of dies in series or lines with intervening distances equal to the multiple of the breadth of the nuts, so that the cut surface left by the severance of one nut, by progressively moving the plate between the punches and dies, forms without further cutting a surface of another nut, cut subsequently from the plate, substantially as set forth.

No. 42,659. Electrical Indicator for Sports.

(*Indicateur électrique pour jeu.*)

Samuel Dimmock Mott, Passaic, New Jersey, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. In a sporting indicator, the combination with two or more movable pointers and cylinders, electro-magnetic intermittent motors for actuating the same included in normally open local circuits, and a circuit closer common to all of said circuits, of a switch for closing the break in any one of the local circuits, and two polarized magnets or armatures operated by the main line, one for moving the switch, the other for operating the circuit closer, as set forth. 2nd. The combination with two or more movable pointers and cylinders constituting the display parts or elements of a sporting indicator, electo-magnetic motive devices for imparting an intermittent movement to the same, and each included in a normally open branch of a local circuit, the circuit closer for connecting any one of said branches with the local circuit, a polarized magnet in the main circuit for operating or moving said circuit closer, and an oppositely polarized magnet also in said circuit for making and breaking the local circuit, and that one of its branches which is closed by the circuit closer. 3rd. The combination with two or more pointers and cylinders, an electro-magnetic motive device for each included in normally open branches of a circuit, of a series of contacts forming the terminals of such branches, a contact arm adapted to sweep over said terminals and close the breaks in the branch circuits successively, a polarized main circuit electro-magnet for moving said contact arm, and an oppositely polarized magnet in the main circuit for connecting with the branch circuits and disconnecting therefrom a local battery, as set forth. 4th. In a sporting indicator, the combination with two or more pointers or cylinders, or both, and ratchets and pawls for moving them step by step, of armature levers carrying said pawls and polarized electro-magnets for said armatures, connected with the same circuit and of differerent degrees of sensitiveness to the action of a current, as set forth. 5th. In a sporting indicator, the combination with two or more pointers or cylinders, and ratchets and pawls for moving them step by step, of armature levers carrying said pawls and polarized electro-magnets, two of which respond slowly to a weak current and to respond quickly to a stronger current, the circuit of the former being controlled by the latter, and all of said magnets being connected with the same electric circuit, as described. 6th. The combination with a main or line circuit, of a series of independent movable indicating devices or pointers, an electro-magnet for each pointer, all connected to a single local circuit controlled by the main circuit, and mechanism actuated thereby for imparting to said pointers intermittent movements of equal extent, independent electric circuits or branches for controlling the action or effect of said electro-magnets, mechanism for closing any one of the independent circuits operated by the main circuit, as set forth. 7th. The combination in an electrical indicator with a main or line circuit, of a series of devices such as pointers, an electro-magnet for each pointer for imparting thereto intermittent movements of equal extent, each of said magnets being provided or wound with two coils, one connected with a circuit common to all and controlled by the main circuit and the other with an independent circuit and branch and mechanism for closing any one of the said independent circuits, operated by the main circuit, as set forth. 8th. The combination in an electrical indicator with a main line or circuit, of a series of pointers, electro-magnetic step by step motors, one for each pointer and all connected with a single local circuit controlled by the main, electro-magnetic controlling devices for retarding or accelerating the movement of any of the pointers and included in normally inactive independent circuits, and a switch mechanism operated by the main circuit for closing any one of said independent circuits, as set forth. 9th. The combination in an electrical indicator with a main line or circuit, of a series of pointers, an electro-magnet for each pointer, all included in the same local circuit and adapted to impart movements of given extent to the pointers, a second electro-magnet for each pointer, each included in an independent circuit or branch and adapted to accelerate the normal movement of the pointers, and mechanism, substantially as described, operated or controlled by the main circuit for making and breaking the local circuit and any of the independent or branch circuits described. 10th. The combination in an electrical indicator with a main line or circuit, of a series of pointers, an electro-magnetic motive device for each pointer having two coils, one included in a local circuit common to all the motors, the other in an independent circuit or branch, a second electro-magnetic motive device for each pointer, each included in an independent circuit or branch and adapted to accelerate the normal movement of the pointers and mechanism, substantially as described, operated or controlled by the main circuit for making and breaking the said local circuit and any one of the independent or branch circuits described. 11th. In an electric indicator, the combination with a series of concentric shafts carrying pointers, a series of step by step electric motors for turning said shafts, means for accelerating or retarding any of the shafts, a second series of shafts corresponding to and engaging with the first respectively, stops carried by the second shafts corresponding to the pointers on the first and an electro-magnetic detent for engaging with all of said stops to bring the pointers to a given starting point and releasing the same, as herein set forth. 12th. In an electrical indicator, the combination with a main or line circuit and a neutral and a polarized electro-magnet included therein, of a series of pointers, a step by step electro-magnetic motor for each, a local circuit common to all of said motors and controlled by the neutral magnet of the main line, a series of independent circuits or branches for controlling or modifying the relative movement of the pointers, and a circuit closer operated by the polarized magnet of the main line to accelerate any of the said independent circuits, as set forth. 13th. In an electric indicator, the combination with a main or line circuit and a neutral and a polarized electro-magnet included therein, a series of pointers, a step by step electro-magnetic motor for each, a local circuit common to all of said motors, a circuit breaker therein controlled by the neutral magnet of the main line, a series of independent derived circuits or branches from said local circuit, mechanism contained therein for retarding or accelerating the movement of the pointers, and a switch operated by the polarized magnet of the main line to complete any of the said independent circuits, as set forth. 14th. The combination, in an electrical indicator with pointers or similar devices and electro-magnetic motive devices for moving the same, each having two opposing circuits or coils, of a local circuit including one of the coils of each motor, independent derived or branch circuits from the local, each including one of the opposing coils, a main or line circuit and two electro-magnets, one a neutral magnet for making and breaking the said local circuit, the other a polarized magnet for completing any one of the derived or branch circuits, as set forth.

No. 42,660. Automatic Detector Stop Motion for Wire Working Machines. (*Mécanisme d'arrêt à délateur automatique pour machines à fil de fer.*)

Edward Samuel Bond, Birmingham, England, April 17th, 1893; 6 years.

Claim.—1st. A new or improved automatic detector stop motion for wire netting and other wire working machines, substantially as and for the purpose herein set forth and shown. 2nd. In a new or improved automatic detector stop motion for wire netting and other wire working machines, the droppers M, sustained by the wire, substantially as and for the purpose herein set forth and shown. 3rd. In a new or improved automatic detector stop motion for wire netting and other wire working machines, the tilting table B, operated substantialy as and for the purpose herein set forth. 4th. In a new or improved detector stop motion for wire netting and other wire working machines, the levers P, sustained by the wire, substantially as and for the purpose herein set forth and shown. 5th. In a new or improved detector stop motion for wire netting and other wire working machines, the rocking plate S, operated substantially as and for the purpose herein set forth and shown. 6th. A new or improved stop motion, consisting of the reciprocating dropper v^2, in combination with the detecting arrangement by which the stopping mechanism is operated, substantially as herein set forth and shown upon the accompanying drawings. 7th. The combination of the dropper M^6, with the disc X, and adjustable stud X^1, substantially as and for the purpose herein set forth and shown.

No. 42,661. Cooking Apparatus. (*Appareil de cuisine.*)

James Gibbons, Jersey City, New Jersey, U.S.A., 17th April, 1893; 6 years.

Claim.—1st. A cooking apparatus made with a broiling chamber having opposing contiguous readily removable cooking walls, substantially as described. 2nd. A cooking apparatus made with a broiling chamber having opposing, contiguous, readily removable, and imperforate cooking walls and sources of heat behind said walls, substantially as described. 3rd. A cooking apparatus made with a broiling chamber having opposing contiguous readily removable cooking walls provided within the chamber with supports for food holding grids, substantially as described. 4th. A cooking apparatus made with a broiling chamber having opposing, contiguous, readily removable, and imperforate cooking walls provided within the chamber with supports for food holding girds, sources of heat being arranged behind said cooking walls, substantially as described.

5th. A cooking apparatus made with a casing or frame, opposing, contiguous, and removable cooking walls sliding therein and forming a broiling chamber between them, and sources of heat next said cooking walls, substantially as described. 6th. A cooking apparatus made with two contiguous fire chambers having thin opposing walls which are readily removable from their supports and form cooking walls of an intermediate broiling chamber, and sources of heat within the fire chambers, said fire chambers having refractory heat deflecting outer walls, substantially as described. 7th. A cooking apparatus made with two contiguous fire chambers forming a broiling chamber between their opposing inner cooking walls, said fire chambers being contracted toward their tops, substantially as described. 8th. A cooking apparatus made with two contiguous fire chambers forming a broiling chamber between their opposing inner cooking walls which are substantially vertical and parallel, said fire chambers having rear walls which lean inward and contract them toward their tops and thrown the heat against the inner cooking walls, substantially as described. 9th. A cooking apparatus made with two contiguous fire chambers forming a broiling chamber between their opposing inner cooking walls which are thinner than their outer walls, said outer walls being set to contract the fire chambers toward their tops and throw the heat against the cooking walls, substantially as described. 10th. A cooking apparatus made with two contiguous fire chambers forming a broiling chamber between their opposing cooking walls, the hot product outlets of the broiling chamber, substantially as described, whereby the opposing cooking walls of the fire chambers will be evenly heated for their entire width, as set forth. 11th. A cooking apparatus made with an outer casing or frame, two contiguous fire chambers in said casing and having opposing cooking wall forming a broiling chamber between them, said casing also having an upper chamber receiving and leading off hot products from both fire chambers, the broiling chamber having an apertured upper portion forming an outlet, and a damper fitted thereto and controlling escape of smoke, heat, and odors from the broiling chamber to the upper chamber, substantially as described. 12th. A cooking apparatus made with an outer casing or frame, two contiguous fire chambers in the casing and forming a broiling chamber between them, said casing having another chamber receiving and leading off the hot products of both fire chambers, combined with an interior cap or hood placed in the hot products chamber above the broiling chamber, and receiving the fumes therefrom and conducting them to the flue outlet, said interior cap preventing the hot products of the fire chamber from entering the broiling chamber, substantially as described. 13th. A cooking apparatus made with an outer casing or frame, two contiguous fire chambers in the casing and forming a broiling chamber between them, said casing having another chamber receiving and leading off the hot products from both fire chambers, combined with an interior cap or hood open at both ends and placed in the hot products chamber above the broiling chamber and receiving the fumes directly therefrom and conducting them to the flue outlet, and a front fume collecting hood communicating with the interior cap or hood which traverses the hot products chamber, substantially as described. 14th. A cooking apparatus made with two contiguous fire chambers having opposing cooking walls forming a broiling chamber between them, the back or outer walls of said fire chambers having facial corrugations which retard passage of hot products through the fire chambers, substantially as described. 15th. A cooking apparatus made with two contiguous fire chambers having opposing cooking walls forming a broiling chamber between them, the back or outer walls of the fire chambers leaning inward to contract said chambers toward their tops, said outer leaning walls having facial corrugations which retard passage of hot products through the fire chambers, substantially as described. 16th. A cooking apparatus made with contiguous opposing cooking walls, forming between them a vertical broiling chamber, and sources of heat behind said walls, the broiling chamber having a downward extension provided at its side walls with ledges or shoulders, combined with a removable drip tray or funnel on said shoulders, practically closing the bottom of the broiling chamber, substantially as described. 17th. A cooking apparatus made with a vertical broiling chamber having a downward extension provided at its side walls with ledges or shoulders, combined with a removable drip tray or funnel held between said shoulders, and provided with a front extension beyond the broiling chamber, said shoulders preventing tipping of the drip tray or funnel by weight or pressure on its extended front portion, substantially as described. 18th. A cooking apparatus made with two contiguous fire chambers, having opposing inner cooking walls forming a broiling chamber between them, an outer casing forming an air superheating chamber behind each fire chamber, each superheating chamber having openings admitting atmospheric air and other openings discharging said air when superheated into the fire chambers to maintain combustion therein, substantially as described. 19th. A cooking apparatus made with two contiguous fire chambers having opposing inner cooking walls forming a broiling chamber between them, fluid fuel burners flaming into said fire chambers, an outer casing forming an air superheating chamber behind each fire chamber, and each superheating chamber having openings admitting atmospheric air, and other openings discharging said air when superheated into the fire chambers to maintain combustion at the burners, substantially as described. 20th. A cooking apparatus made with an outer casing or frame, two contiguous fire chambers therein having inner cooking walls forming a broiling chamber between them, said casing having an upper chamber receiving the hot products of both fire chambers, and also forming an air superheating chamber behind each fire chamber, and provided with openings admitting atmospheric air to the superheating chambers, and the fire chamber, having other openings admitting superheated air to maintain combustion therein, substantially as described. 21st. A cooking apparatus made with an outer casing or frame, two contiguous fire chambers therein, having opposing inner cooking walls, forming a broiling chamber between them, fluid fuel burners flaming into said fire chambers, the casing having an upper chamber receiving the hot products from both fire chambers, said casing also forming an air superheating chamber behind each fire chamber, and provided with openings admitting atmospheric air to the superheating chambers, and the fire chambers having other openings admitting superheating air to maintain combustion at the burners, substantially as described. 22nd. A cooking apparatus made with two contiguous fire chambers, having opposing inner cooking walls forming a broiling chamber between them, an outer casing forming an air superheating chamber behind each fire chamber, each of said air superheating chambers provided with an intermediate wall or partition and bottom openings at each side of the partition and each fire chamber having an opening through it beyond the burning fuel, substantially as described whereby the air raised in temperature in the superheating chambers will be discharged into the fire chambers both at or adjacent to and beyond the fires to assure practically perfect combustion at a high temperature in the two opposing fire chambers, as set forth. 23rd. In a cooking apparatus, the combination, with opposing contiguous cooking walls or plates, forming a broiling chamber between them and ledges or shoulders forming separate or independent supports on the respective cooking walls within the chamber, of a grid having at its opposite side frames or parts outward lateral projections or extensions resting on the cooking wall supports, and sustaining it vertically within the broiling chamber, substantially as described. 24th. A cooking apparatus made with opposing readily removable cooking walls or plates, forming the inner sides of contiguous fire chambers, and providing a broiling chamber between them, said removable cooking walls provided, respectively, with separate or independent ledges or shoulders, forming supports within the broiling chambers, combined with a grid having at its opposite side frames or parts, outward lateral projections or extensions resting on said cooking wall supports, and sustaining the grid vertically within the broiling chamber, substantially as described. 25th. A cooking apparatus, made with two or more broiling chambers, and fire chambers at both sides thereof, all arranged within an outer casing or frame, and set back therefrom to form an air superheating chamber or chambers next the fire chambers, said casing provided with openings admitting atmospheric air, and the fire chambers having other openings admitting the superheated air to maintain combustion, substantially as described. 26th. A cooking apparatus made with two or more broiling chambers and fire chambers at both sides thereof, all arranged within an outer casing or frame and set back therefrom to form an air superheating chamber or chambers next the fire chambers, said casing provided also with openings admitting atmospheric air, and the fire chambers having other openings admitting the superheated air to maintain combustion, said casing also having an upper or outer chamber into which the hot products of all the fire chambers discharge to find outlet and upon the top of which upper chamber cooking may be done, substantially as described 27th. A cooking apparatus, made with two contiguous fire chambers having opposing inner cooking walls forming a broiling chamber between them, an outer casing forming an air superheating chamber behind the fire chamber and having openings admitting atmospheric air and other openings discharging said air when superheated into the fire chambers to maintain combustion therein, and an auxiliary cooking chamber at one or both sides of the boiler casing and provided with a source of heat, said casing having openings discharging superheated air into the auxiliary cooking chamber or or chambers to maintain combustion therein, substantially as described. 28th. A cooking apparatus or broiler made with a casing or frame, contiguous opposing cooking walls therein, forming a broiling chamber between them, sources of heat for said cooking walls within the casing, said casing provided with side openings adapted for connection of an outlet flue or pipe, and caps adapted to close the disused side openings, substantially as described, whereby two or more of the broilers may be coupled together and discharge their hot products at one flue, as set forth. 29th. A cooking apparatus or broiler made with a casing or frame, two contiguous fire chambers therein having opposing inner cooking walls forming a broiling chamber between them, the casing having an upper chamber receiving and carrying off the hot products from both fire chambers, said casing provided at the hot products chamber with side openings adapted for connection of an outlet flue or pipe, and caps adapted to close the disused side openings, substantially as described.

No. 42,662. Grooving Machine. (*Machine à rainure.*)

Peck, Stow and Wilcox Company, assignees of Hial Stow Grannis, all of Southington, Connecticut, U.S.A., April 18th, 1893; 6 years.

Claim.- 1st. The combination of the frame A having upper and lower sockets, set screws 6, and a longitudinal passage for a rack

bar, the upper and lower horns 7 and 8 formed of round bars and secured within said sockets, the rack bar B fitted to the longitudinal passage through said frame, and the roller carriage 10 having curved side pieces surrounding and embracing said round upper horn, substantially as described and for the purpose specified. 2nd. In a grooving machine having an upper horn, the combination of the frame having a socket for the lower horn, the lower horn 8 fitted to said socket and provided at its socket with the locking holes 16 and a locking bolt secured in said frame for engaging said holes for locking said lower horn correctly in its several positions, substantially as described and for the purpose specified.

No. 42,663. Can Opener.

(*Machine à ouvrir les boîtes métalliques.*)

William Henry Thicke, John James Collins and Thomas McJanet, all of Ottawa, Ontario, Canada, 18th April, 1893; 6 years.

Claim.—The combination in a can opener of the frame A having on same the inserting point G, the sides E on each side and the slot F, in which the block D is adapted to slide, the lever C which is pivoted to the block D, by the hinge I, the fulcrums H which are cast on the lever C, as described, the block D, and the knife B, which is attached to the block D, substantially as and for the purpose hereinbefore set forth.

No. 42,664. Power Controller.

(*Appareil pour controller les moteurs.*)

James Francis McLaughlin, Philadelphia, Pennsylvania, U.S.A., April 18th, 1893; 6 years.

Claim.—1st. As a means for controlling an operator in the application of power, the combination of power transmitting devices, and a hand lever or rod for actuating the same, with a rocking escapement pawl preponderating on one side, carried by said lever or rod, and a ratchet in operative relation to the escapement pawl and arranged with reference to the same to lock the lever or rod against rapid movement in one direction, substantially as described. 2nd. In electric motor cars, the combination of an electric motor and the lever for starting the car, with a biased escapement pawl carried by the lever and a ratchet in operative relation to the escapement pawl, the two being spaced and shaped with reference to each other to lock the lever against rapid movement in the direction of applying the power, substantially as described. 3rd. In electric motor cars, the combination of an electric motor, a clutch for coupling the armature of the motor to the drive axle and for uncoupling the same and the lever for admitting current to the motor and for actuating the clutch, with a ratchet and a pivoted escapement pawl moved by the lever along the ratchet and oscillated by the ratchet teeth and by gravity to lock the lever against rapid movement in one direction, substantially as described. 4th. The combination of a lever for actuating power applying devices, with a biased escapement pawl carried by the lever, and a ratchet, both constructed, substantially as described, to react upon the lever to lock the same against rapid movement in one direction, substantially as described. 5th. The combination of a lever, for actuating power applying devices, with an escapement pawl carried by the lever, and a ratchet in operative relation to the escapement pawl, both spaced and shaped to bring the escapement pawl into abutment with the ratchet, when the lever is moved beyond a predetermined speed in one direction, substantially as described. 6th. A power controlling lever in combination with a speed lock, substantially as described.

No. 42,665. Broiling Apparatus. (*Gril.*)

James Gibbons, Jersey City, New Jersey, U.S.A., April 18th, 1893; 6 years.

Claim.—1st. The combination, in a broiling apparatus, of a casing or frame, a series of food broiling and air superheating chambers A, and adjacent fire chambers B therein, and a rear partition G, in the casing having upper openings g, and lower openings g^1, and providing a passage H, giving indirect communication between the broiling and fire chambers, substantially as described. 2nd. The combination, in a broiling apparatus, of a casing or frame, a series of food broiling and air superheating chambers A, and adjacent fire chambers B therein, and a rear partition G, in the casing, having upper openings g, and lower openings g^1, and providing a passage H, giving indirect communication between the broiling and fire chambers, said passage being fitted with partitions apportioning the hot air and fatty fume mixture from the broiling chambers to the adjacent fire chambers, substantially as described. 3rd. The combination, in a broiling apparatus, of a casing or frame, a series of food broiling and air superheating chambers A, and adjacent fire chambers B therein, chambers A^1, below the chambers A, chambers D, below the chambers B, and fluid fuel burners in the chambers D, and provided at their mixing tubes and outside the burner or fire chambers with air inlets, a partition G in the casing, provided with openings g, g^1, and forming a passage H, giving indirect communication between the broiling and fire chambers, an upper hot product chamber J, being provided in the casing, conduits I, in said chamber J, and final outlets as at k, K, from this chamber for the hot waste products, substantially as described. 4th. The combination, in a broiling apparatus, of a casing or frame, a series of food broiling and air superheating chambers A, and adjacent fire chambers B therein, chambers A^1, below the chambers A, chambers D, below the chambers B, fluid fuel burners in the chambers D, and provided at their mixing tubes, and outside the burner or fire chambers with air inlets, a partition G, in the casing, provided with openings g, g^1, and forming a passage H, giving indirect communication between the broiling and fire chambers, an upper hot product chamber J, being provided in the casing, conduits I, in said chamber J, final outlets as at k, K, from this chamber for the hot waste products, and a hood M, in front of the conduits I, substantially as described. 5th. The combination, in a broiling apparatus, of a casing or frame, a series of broiling chambers A, and fire chambers B therein, chambers A^1, below the chambers A, chambers D, below the chambers B, fluid fuel burners in the chambers D, said casing having a front portion c^1, sustaining the burner fittings, and a removable or operable front portion c^2, giving access to the burners, substantially as described. 6th. A broiling apparatus made with two or more broiling chambers, fire chambers at the sides thereof, and with which the broiling chambers indirectly communicate, fatty fume conduits above the broiling chambers, and doors fitted to the broiling chambers, and extended to close the fume conduits, substantially as described, whereby when the doors of the unused broiling chambers are closed, the corresponding fume conduits will also be closed to increase the draft through the broiling and fire chambers, and the respective conduits in use and exclude the fatty fume from unused parts of the apparatus, as herein set forth. 7th. A broiling apparatus made with two or more broiling chambers, fire chambers at the sides thereof, and heat radiating deflectors in the intermediate fire chamber or chambers, distributing the flame or heat toward cooking walls of two adjacent broiling chambers, substantially as described. 8th. A broiling apparatus, made with two or more broiling chambers, fire chambers at the sides thereof, fluid fuel burners adapted to flame into said fire chambers, and heat radiating deflectors in the intermediate fire chambers above the burners and distributing their flames or heat toward cooking walls of two adjacent broiling chambers, substantially as described. 9th. A broiling apparatus made with two or more broiling chambers, fire chambers at the sides thereof, and heat radiating deflectors in the intermediate fire chambers, provided with downwardly tapering lower parts presented edgewise to the source of heat in the fire chambers and distributing the flame or heat toward cooking walls of two adjacent broiling chambers, substantially as described. 10th. A broiling apparatus made with two or more broiling chambers, fire chambers at the sides thereof, and heat deflectors in the intermediate fire chambers distributing the flame or heat toward cooking walls of two adjacent broiling chambers, said deflectors having lateral or facial perforations or corrugations, substantially as described. 11th. A broiling apparatus made with a casing or frame, two or more broiling chambers therein, fire chambers at the side of the broiling chambers, said broiling chambers communicating indirectly with the fire chambers which consume fatty fumes from the food, and heat radiating deflectors in the intermediate fire chambers distributing the flame or heat from the consuming hot air and fatty fume mixture toward cooking walls of two adjacent broiling chambers, substantially as described. 12th. The combination, in a broiling apparatus, of a series of broiling chambers, fire chambers at the sides thereof, sources of heat in the fire chambers, front and rear supports in the intermediate fire chambers and heat radiating deflecting plates fitted to slide in the supports and sustained edgewise by them between opposing cooking walls of adjacent broiling chambers, substantially as described. 13th. The combination, in a broiling apparatus and with a series of adjacent broiling chambers and fire chambers between them, of heat radiating deflectors O, having shoulders o, and lateral or facial perforations or corrugations, and grooved and shouldered front and rear plates P, sustaining the deflectors within the intermediate fire chambers, substantially as described.

No. 42,666. Knitting Machine. (*Machine à tricoter.*)

William Henry Haskell, Pawtucket, assignee of Frank Wilcomb, Providence, both of Rhode Island, U.S.A., 18th April, 1893; 6 years.

Claim—1st. In combination, the needles, the cam bars, means for moving the needles into operative postion, and the slides acting alternately to lock said means in their inoperative position first on one side of the machine and then on the other, and operating mechanism for the slides, substantially as described. 2nd. In combination, the needles, the cam bars, the means for moving the needles into operative position, the locking slides to retain said means inoperative first on one row and then on the other, mechanism for operating said slides to and from their locking position and devices for giving said slides an additional movement for shaping the fabric, substantially as described. 3rd. In combination, the needles and cam bars, the means for moving the needles into operative postion, a pair of locking slides having notches arranged to release said means alternately first on one row and then on the other, when said notches align therewith and means for operating the slides in unison, substantially as described. 4th. In combination with the needles and cam bars, means for forcing the needles into operative position, the locking and shaping slides having a series of notches alternately set with relation to each other, one of said slides having a wide tooth opposite a wide notch at the end of the other slide, and an additional small notch and the operating means for the slides, substantially as described. 5th. In combination, the needles, the cam bars therefor, the jacks and

springs for forcing the needles forward into operative position, the slides with means for operating them to lock and release the jacks alternately, and the holding dogs for the jacks, the said cam bars having grooves for operating the dogs, substantially as described. 6th. In combination, the needles and cam bars, the means for moving the needles forward into operative position, the notched locking slides, the cross head and the operating connections leading to the main shaft, substantially as described. 7th. In combination, the needles, the means for moving the needles into operative position, the cam bars, the locking and shaping slides, the screw shafts, the connections therefrom to the slides, the means for reciprocating the shaft with the slide and the mechanism for rotating the screw shaft to move the slides for shaping the fabric, substantially as described. 8th. In combination, the needles, the means for moving the needles into operative position, the cam bars, locking and shaping slides, operating mechanism therefor and a detachable connection between said slides and operating mechanism, substantially as described. 9th. In combination, the needles, the means for moving the needles into operative position, the cam bars, the locking slides having a series of notches, the screw shaft connected to the locking slides, the means for moving the shaft longitudinally, consisting of the lever and cam and the means for rotating the screw consisting of the loose pinion, the pawl, the rack bar, the cam, the catch lever for holding the rack inoperative, and the pattern mechanism for withdrawing the catch lever, substantially as described. 10th. In combination, the needle, the means for moving the needles into operative position, the cam bars, the locking slides, the screw shaft with means for operating the same, the detachable nut between the shaft and slides, and the stop, substantially as described. 11th. In combination, the needles and cam bars of a straight knitting machine, a thread carrier arranged over the rows having a knife edge adapted to open and hold the latches of the needles, and an opening for the thread, having a mouth with the opposite ends thereof on opposite sides of the knife edge, substantially as described. 12th. In combination, the needles, the means for moving the needles into operative position, the cam bars, the locking slides and the shaft for operating the same, the means for moving the shaft in one direction and the spring pressed bearing for the end of the shaft, substantially as described. 13th. The combination, the needles and cam bars, the V cam 52, the wings 50, mounted on a plate 51, and means for adjusting said plate, consisting of the plate with the inclined slot and the adjustable rod 56, connected to said slotted plate, substantially as described.

No. 42,667. Electric Arc Lamp.

(*Lampe électrique à arc.*)

The Reliance Electric Manufacturing Company, Waterford, Ontario, Canada, assignee, of James Watson Easton, City of New York, New York, U.S.A., 18th April, 1893; 6 years.

Claim.—1st. In an electric arc lamp, the combination with the actuating magnets or solenoids of a movable carbon, a wheel for controlling the movement of said carbon, connections substantially as described, between said wheel and said carbon, a swinging support on which said wheel is mounted, a pivoted lever carrying a detent arranged to be carried into engagement with and lock said wheel when said support is moved in one direction, and a stop arranged to be carried to arrest the movement of said lever at a predetermined point, and release said detent from engagement with said wheel when said support is moved in the opposite direction, substantially as shown and described. 2nd. In an electric arc lamp, the combination with the actuating magnets or solenoids of a movable carbon, a wheel I for controlling the movement of said carbon, a spur wheel G¹, intermediate said wheel I and said carbon, a swinging support on which said wheel I is mounted, a pivoted lever carrying a detent arranged to be carried into engagement with and lock said wheel when said support is moved in one direction, and a stop arranged to arrest the movement of said lever at a predetermined point, and release said detent from engagement with said wheel when said support is moved in the opposite direction, substantially as shown and described. 3rd. In an electric arc lamp, the combination with the actuating magnets or solenoids of a movable carbon, a wheel for controlling the movement of said carbon, connections substantially as described between said wheel and said carbon, a swinging support on which said wheel is mounted, a lever pivoted to said support, and carrying a detent arranged to be carried into engagement with and lock said wheel when said support is moved in one direction, and a step arranged to arrest the movemet of said lever at a predetermined point, and release said from engagement with said wheel when said support is moved in the opposite direction, substantially as shown and described. 4th. In an electric arc lamp, the combination with a solenoid or electro-magnet connected in series with the main circuit, of a solenoid or electro-magnet embraced in a high resistance circuit derived from said main circuit, a movable carbon, a feed controlling wheel I, connections substantially as described between said wheel and said carbon, a swinging support on which said wheel is mounted, and which is connected with the core of said high resistance solenoid or magnet, a weight in said frame arranged to oppose the action of said high resistance solenoid or magnet, a pivoted lever carrying a detent arranged to be carried into engagement with and lock said wheel I by the movement of said frame caused by the action of said weight, and a stop for arresting the movement of said lever and releasing said detent from engagement with said wheel during the movement of said frame produced by the energizing of the said derived circuit coils, substantially as shown and described. 5th. In an electric arc lamp, the combination with the actuating magnets or solenoids of a movable carbon, a wheel for controlling the movement of said carbon, connections substantially as described between said wheel and said carbon, a swinging support on which said wheel is mounted, a pivoted lever carrying a brake arranged to be carried into engagement with and lock said wheel when said support is moved in one direction, and a stop arranged to arrest the movement of said lever at a predetermined point, and release said brake from engagement with said wheel when said support is moved in the opposite direction, substantially as shown and described. 6th. In a cut out device for electric lamps, the combination of a magnet having its coils connected with one conductor of the main circuit, and having its core and pole electrically connected with said coils, a lever arranged to be thrown into contact with the pole of said magnet by the movement of the carbon feeding mechanism when the resistance of the main circuit becomes excessive, the contacting point of said lever being electrically connected with the other conductor of said main circuit, whereby a circuit is established around the main circuit of the lamp when the carbons fail to approach each other, and is automatically maintained until the carbons come together, substantially as shown and described. 7th. In an electric arc lamp, a feed controlling solenoid or electro-magnet having a portion of its coils included in a high resistance circuit derived from the main circuit of the lamp, and a portion of its coils in series with the main circuit, and so wound and connected that the current through both the said shunt and series coils will flow in the same direction, substantially as shown and described.

No. 42,668. Road Cart. (*Désobligeante.*)

Josiah Dallas Dort and William C. Durant, both of Flint, Michigan, U.S.A., 18th April, 1893; 6 years.

Claim.—1st. In a road cart, the following conjoined elements, the axle, the thills mounted thereon, the springs mounted on said thills, their free ends extending over the axle, the crank rod journalled in the ends of said springs, the crank rod journalled in supports mounted on the thills, and the body mounted pivotally on said crank rods, substantially as set forth. 2nd. In a vehicle, the combination of the axle and thills, the latter having straight rear end portions and central upwardly curved parts, the springs mounted on the rear end portions of the thills and extending rearwardly over the axle, the crank rod journalled in the free ends of said springs, the rear end of the body being journalled on said crank rods, the plates mounted on the upwardly curved portions of the thills, and the crank rod journalled therein, the forward portion of the body being journalled on said crank rod, as and for the purpose specified.

No. 42,669. Kettle Bottom. (*Fond de bouilloire.*)

John Simpson and George M. Collins, both of Toronto, Ontario, Canada, 18th April, 1893; 6 years.

Claim.—1st. A tea kettle or other vessel for boiling purposes, provided with a dome shaped bottom, the convexed side of which is adapted to be adjacent to the contents of the vessel, and the concaved side of which is adapted to be adjacent to the heated products of combustion, substantially as and for the purpose specified. 2nd. A tea kettle or other vessel for boiling purposes, comprising a suitable body, a dome shaped bottom to said body, the convexed side of said dome shaped bottom adjacent to the contents of the vessel and the concaved side of said bottom adjacent to the heated products of combustion, the supporting flange surrounding said dome shaped bottom, and adapted to sustain the weight of a vessel forming part of said bottom by means of which the said bottom is secured to the body of the said vessel, substantially as and for the purpose specified.

No. 42,670. Cooking Apparatus. (*Poêle de cuisine.*)

George Noakes, New York, State of New York, and James Gibbons, Jersey City, New Jersey, U.S.A., 18th April, 1893; 6 years

Claim.—1st. A cooking apparatus made with two opposing contiguous imperforate cooking walls or plates forming a broiling chamber between them and a source of heat behind said cooking walls, substantially as described. 2nd. A cooking apparatus made with two contiguous fire chambers having inner opposing imperforate cooking walls forming a broiling chamber between them and a source of heat within the fire chambers, the fire and broiling chambers being arranged within a casing or frame in one self contained structure, substantially as described. 3rd. A cooking apparatus having a broiling chamber the side walls of which are imperforate, fire chambers at the sides of the broiling chamber, and longitudinal series of fluid fuel burners ranging in said fire chambers along the inner walls thereof, substantially as described. 4th. A cooking apparatus made with a casing or frame, two contiguous fire chambers therein having inner opposing cooking walls forming a broiling chamber between them and a source of heat within the fire chambers, said casing having another chamber receiving and leading off the hot products from both fire chambers, substantially as described. 5th. A cooking apparatus made with two contiguous opposing fire chambers having inner imperforate cooking walls forming a broiling

chamber between them and a source of heat in the fire chamber, said broiling chamber having end doors movable to facilitate original heating of the cooking walls and to admit air, substantially as described. 6th. A cooking apparatus made with two or more broiling chambers, each having opposing contiguous cooking walls and fire chambers at both sides of the broiling chambers, substantially as described, whereby adjacent cooking walls of two independent broiling chambers will be heated by the same fire, as set forth. 7th. A cooking apparatus made with two or more broiling chambers, each having opposing contiguous cooking walls and fire chambers at both sides of the broiling chambers, all arranged within a common casing or frame, said casing also provided with an upper chamber receiving and leading off the hot products from all the fire chambers, substantially as described.

No. 42,671. Car Coupler. (*Attelage de chars.*)

John Byron Graves, Cedar Rapids, Iowa, U.S.A., 18th April, 1893; 6 years.

Claim.—1st. In a car coupler, the combination, of the draw head C, having a shoulder *c*, in the lower part of the mouth thereof, the dog D pivoted in the upper part of the mouth thereof, and with a lever d^1, connected with or forming a part of its pivot *d*, the link E having a hole *e*, through its inner end, the pin F, connecting the link permanently with the draw head, and the hole e^{11} through the outer end of the link to admit the dog of a corresponding draw head, and means, substantially as described, for raising the dog to uncouple. 2nd. In a car coupler, the combination of the herein described draw head having the dog D, pivoted in the principal mouth thereof, a shoulder in said mouth to hold the lower end of the dog, and a supplemental mouth above said principal mouth with a pin therein, whereby the drawhead is adapted to couple with draw bars or links too short to admit the dog, and the link E, having the hole *e* at the inner end, and a hole at the outer end to admit the dog, and the pin F passing through the hole *e*, and connecting it permanently with the draw head. 3rd. In a car coupler, the combination of the dog D, pivot or axis *d*, having crank d^1, chain *f*, and the rock shaft G having crank G^{11}, and a hand lever G^1, the said rock shaft being mounted so that the hand lever when thrown forward passes the centre of gravity, and holds the dog out of coupling position. 4th. In a car coupler, the herein described link, having a solid portion for counterweight inside the draw head, and with a hole *e* therein for a connecting pin, and an open outwardly extending portion with one or more transverse bars connecting the sides, and a pointed or tapered end to prevent two links from abutting each other.

No. 42,672. Thill Support. (*Armon de limonière.*)

William M. Buchnau, Columbia, Tennessee, U.S.A., 18th April, 1893; 6 years.

Claim.—A thill supporter consisting of a straight body, having one end formed to removably engage the axle, and its outer end B, bent at right angle to underlie and uphold the shaft, and the extremity of part B again turned upward at right angles, all constructed and arranged to operate, substantially as and for the purpose specified.

No. 42,673. Straw Cutter. (*Hache-paille.*)

James Albert Manning, Toronto, Ontario, Canada, 18th April, 1893; 6 years.

Claim.—1st. The arrangement of the sleeve A, for carrying the outside rest C, as hereinbefore described and illustrated. 2nd. The outside rest C, for facilitating the cutting of straw, fodder, &c., arranged as hereinbefore described and illustrated. 3rd. The method of securing the cutting knives K, at the butt to a revolving collar B, and at the extremity to studs or blocks E, on the rim of the drive wheel D, so as to allow the outside rest C, to operate between the knives K, and the wheel D, as hereinbefore described and illustrated in the drawings.

No. 42,674. Candle. (*Chandelle.*)

John Tennant, James Tennant and William Richard Tennant, all of Aberdeen, Scotland, 18th April, 1893; 6 years.

Claim.—Coating parafine candles and the like with gold, silver, copper and other like metallic paint or leaf, substantially as and for the purposes hereinbefore described.

No. 42,675. Ear drum. (*Tympan postiche.*)

George Hall Wilson, Louisville, Kentucky, U. S. A., 18th April, 1893; 6 years.

Claim.—An artificial ear drum, composed of a conical rimless body formed with a pair of divergent passages through its contracted end and provided at its hollow base, with an internal transverse diaphragm flush with such base, and adapted to be grasped by a pair of tweezers for the convenient insertion and removal of the drum, substantially as described.

No. 42,676. Pipe Coupling. (*Joint de tuyau.*)

George Bethell Howell, Philadelphia, Pennsylvania, U.S.A., April 18th, 1893; 6 years.

Claim.—1st. In combination, with the water closet or similar fixture of earthenware, provided with an opening having an interior annular projection or flange, the elastic gasket having a conical opening therethrough, and a nipple or coupling piece adapted to be forced into said conical opening so as to expand the gasket within the opening of the fixture, and to secure the parts together without other fastening means, substantially as described. 2nd. In combination, with the fixture having an opening therein provided with an interior annular projection or flange, the elastic gasket having a conical opening through the same, and the nipple or coupling piece having a collar intermediate with the ends thereof and a second collar or lip adapted to overhang the inner end of the gasket when the parts are inserted in the opening of the fixture so as to form a lock joint, substantially as described. 3rd. In combination, with the tubular projection or fixture, having an annular terminal flange or projection, the elastic ring or gasket having an enlarged circumferential portion, and the nipple or coupling piece adapted to compress and expand said enlarged portion of the gasket so as to lock the same to said annular flange and secure the parts together without other fastening means, substantially as described. 4th. In combination, with the tubular fixture having the annular flange or lip, the annular elastic ring fitting thereon and having the portion thereof overhanging said lip enlarged and bevelled or inclined from the fixture, and the detachable coupling piece adapted to compress the enlarged portion thereof about said annular lip so as to seal the joint between the parts and securely connect the same without other fastening means, substantially as described. 5th. In combination, with the tubular fixture, having the annular lip or terminal flange, the elastic ring having the right angle outwardly bevelled and enlarged compressible portion overhanging said lip, and the coupling piece having the annular shoulder adapted to abut against said ring and lock the parts together, substantially as described.

No. 42,677. Loop for Harnesses. (*Bracelet de harnais.*)

William Peter Gelabert, Thomas Granville Nelson and William Francis Clindenen, all of Sweet Springs, Missouri, U.S.A., 18th April, 1893; 6 years.

Claim.—1st. The strap loop formed of two upwardly and forwardly extended end bars and two flattened cross bars, one of which is adapted to rock in the strap; and one of the bars being above and forward of the other, substantially as described. 2nd. The strap loop formed of two upwardly and forwardly extended end bars and two flattened cross bars, one of which bars is adapted to rock within the strap and one of the bars being set above and forward of the other, and the rear one of said bars being set on a plane above the lowest bearing portion of the end bars and thereby forming downwardly extended side confining flanges, substantially as described. 3rd. The strap loop formed of two upwardly curved and forwardly extended end bars and two flattened cross bars, one of which bars being adapted to rock within the strap and one of said bars being provided with one or two notches and one of the bars being set above and forward of the other bar, and the rear bar constructed and arranged on a plane above the lowermost bearing portion of the end bars, thereby forming side guiding flanges for the strap, substantially as described.

No. 42,678. Lining for Journal Bearings.
(*Garniture de coussinet de tourillon.*)

Frank E. Leonard and Charles W. Leonard, assignees of Robert Angus, all of London, Ontario, Canada, 18th April, 1893; 6 years.

Claim.—1st. As a new article of manufacture, an interchangeable lining, cast independent of the bearing or box, and afterwards placed therein, and means for preventing said lining from rotating, substantially as shown and described, and for the purpose specified. 2nd. As a new article of manufacture, an interchangeable lining, cast independent of the bearing or box, and afterwards placed therein, and means for preventing said lining from rotating, and from moving endwise, substantially as shown and described, and for the purpose specified. 3rd. An interchangeable lining, cast independent of the bearing or box, and afterwards placed therein, and an abutment or backing which supports said lining, and its projections or flanges throughout, and means for preventing said lining from rotating, substantially as shown and described, and for the purpose specified. 4th. An interchangeable lining, cast independent of the bearing or box, and afterwards placed therein, and an abutment or backing, which supports said lining, and its projections or flanges throughout, and means for preventing said lining from rotating, and from moving endwise, substantially as shown and described. 5th. As a new article of manufacture, an interchangeable lining, B, formed with the projections, A, substantially as shown and described, and for the purpose specified. 6th. As a new article of manufacture, an interchangeable lining, B, formed with the flanges, C, and the bearing, G, forming an abutment or backing to said flanges, substantially as shown and described, and for the purpose specified. 7th. As a new article of manufacture, an interchangeable lining, B, formed with the projections, A, and flanges, C, substantially as shown and described, and for the purpose specified. 8th. An interchangeable lining, B, and bearing or boxing, G, projections being formed on one, and corresponding recesses in the other, in combination with the sheet iron packing slips, F, substantially as shown and described, and for the purpose specified. 9th. An interchangeable lining, B, and bearing or boxing, G, projections being formed on one, and corresponding recesses in the other, in combina-

tion with the sheet iron packing slips, F, and, L, substantially as shown and described, and for the purpose specified.

No. 42,679. Heater. (*Calorifère de foyer.*)

Albert E. Lytle and Simeon Daniel Ovitt, both of Chicago, Illinois, U.S.A., 19th April, 1893; 6 years.

Claim.—1st. In heaters for fireplaces and the like, the combination of the corrugated back G, and corrugated side or jamb walls G^1, having their lower ends open, and united with openings h, in the top of the base H, with the hollow base H, having the passages for the admission of air, and the hot air flue connected to the opening g^2, substantially as described. 2nd. In heaters for fireplaces and the like, the combination of the corrugated back G, having the openings g^2, and the side walls G^1, having the openings g^4, said back and walls having their lower ends open, and united with openings h, in the top of the base H, with the hollow base H, having air passages and the openings h^5, provided with a cover h^6, and the water receptacle I, placed and adapted to discharge steam or moisture within the hollow of the base, and the hot air flue connected to the opening g^2, of the back, substantially as set forth. 3rd. In heaters for fireplaces and the like, the combination of the vertically corrugated back G, having the enlargement g, openings g^2, and the vertically corrugated side walls G^1, having the openings g^4, said back and walls having their lower ends open, and united with openings h, in the top of the base H, and the hollow base H, having the passages h^2, h^4, for cold air, and the opening h^5, provided with a cover h^6, and the water receptacle I, placed and adapted to discharge steam or moisture within the hollow of the base, and the opening m, for the discharge of ashes, having the cover m^1, and the hot air flue connected to the opening g^2, in the back, substantially as described. 4th. In heaters for fireplaces and the like, the combination of the vertically corrugated back G, having the enlargement g, and the hot air chamber g^1, openings g^2, and the vertically corrugated side walls G^1, having the openings g^4, said back and walls having their lower ends open, and united with openings h, in the top of the base H, with the hollow base H, having the air passages h^2, h^4, and the opening h^5, provided with a cover h^6, and the water receptacle I, placed and adapted to discharge steam or moisture within the hollow of the base, and the opening m, for the discharge of ashes, having the cover m^1, and the hot air flue F, having the inlets F^1, provided with the dampers a, the doors N, secured to the front of the side walls, substantially as described. 5th. In heaters for fireplaces and the like, the combination of the vertically corrugated back G, having the enlargement or forward curve g, hot air chamber g^1, and the openings g^2, and the vertically corrugated side walls G^1, having the openings g^4, and ledges or brackets o, said back and walls having their lower ends open and united with openings h, in the top of the base H, with the hollow base H, having the air passages h^2, h^4, and the opening h^5, and the water receptacle I, placed and adapted to discharge steam or moisture within the hollow of the base, and the hot air flue F, connected to the opening g^2, and having the inlets F^1, provided with dampers a, the doors N, having the transparent panels, and secured to the front of the side walls, substantially as described.

No. 42,680. Support for Shelves. (*Support de rayons.*)

William Evarts Richards, City of New York, State of New York U.S.A., 19th April, 1893; 6 years.

Claim.—1st. As an article of manufacture, a shelf support consisting of a bracket for supporting the shelf, and a wedge or locking piece for locking the bracket. 2nd. In combination, with ways or grooves in the frame of a book case or like article, a shelf support adapted thereto, consisting of a bracket, and a wedge or locking piece, the said bracket being locked within the grooves or ways by the wedge, substantially as described. 3rd. In combination, with the ways or grooves in the frame of a book case or like article, a shelf support fitted thereto, consisting of a bracket within the groove, having an ear or lug projecting therefrom to support the shelf, and a wedge or locking piece interposed between the bracket and the wall of the groove or way, substantially as described. 4th. The combination, in a book case or similar structure, of the main frame A, provided with grooves B, the brackets D, wedges F, and shelf E, substantially as shown and described. 5th. In a support for shelves and other like structures, the combination, with the grooves or ways in the frame, of a wedging piece, and a bracket piece, said bracket piece having a projecting part or portion over-lapping the wedging piece to prevent its displacement, substantially as shown and described. 6th. The combination, with the frame of a book case or the like, provided with suitable bearing surfaces, of a shelf, and wedge pieces interposed between and directly engaging such bearing surfaces and the shelf, and supporting the latter in position.

No. 42,681. Track Sanding Device.

(*Appareil pour sabler les voies de chemin de fer.*)

Charles William Sherburne, Boston, Massachusetts, U. S. A., 19th April, 1893; 6 years.

Claim.—1st. In a track sanding apparatus, the combination, with the sand supply apparatus B, of two independent conduits for compressed air under control of the engineer, one being the pipe e, and the other being the pipe e^1, the pipe e, furnishing only a small quantity of air to propel the sand, the other pipe e^1, furnishing a much larger quantity of air to propel the sand, substantially as and for the purposes described. 2nd. In a track sanding apparatus, the combination, with the train line m, and engineer's valve N, of the reservoir E, the automatic valve F, the air pipe e, and sand distributing barrel C, substantially as and for the purpose described. 3rd. The combination of the Westinghouse air brake apparatus, having an automatic valve F, and its air reservoir E, with an air actuated sand distributing apparatus, and a sand delivery pipe D, substantially as described. 4th. In a track sanding apparatus, the combination of a sand chamber O, a wall m, surrounding said sand chamber, a sand delivery channel C, and two air pipes, one of which furnishes a much larger quantity of air than the other, substantially as and for the purposes described. 5th. The combination with a railway train and with the vehicles thereof and with the air brake apparatus of such a train of two or more sets of automatic track sanding apparatus actuated by the compressed air of the brake apparatus, one of which automatic track sanding apparatus is located on a vehicle at or near the head of the train, and the other of which track sanding apparatus is located on a vehicle behind the vehicle at or near the head of the train which carries the track sanding apparatus hereinbefore referred to, substantially as and for the purpose described. 6th. In a track sanding apparatus the combination of a sand box B and sanding pipes D, and air pipes e, leading thereto with the train line and the air reservoir E of the air brake system by means under control of the engineer to contract or disconnect the cavity of said pipe e to or from the air supply of said air reservoir simultaneously with and by the same act as that by which the engineer's valve N is moved, substantially as and for the purpose described. 7th. In a track sanding apparatus the combination of a sand box B, sand pipes D, leading from said sand box to the front of the driving wheels, a controllable drafting and propelling current for drafting and carrying the sand from the box B to the front of the driving wheels, which controllable drafting and propelling current is derived from the train brake system, a cover to the sand pipe which extends laterally beyond the channel of the sand pipe, a channel of the sand pipe, a channel from the sand box B into the sand pipe beneath said cover, a bead around the upper edge of said sand pipe and beneath said cover, and a blast nozzle adjacent thereto, substantially as described. 8th. In a track sanding apparatus the improved valve U^4 consisting of an upper and lower member separated by the horizontal chamber t, substantially as and for the purpose described. 9th. In a track sanding apparatus the improved valve U^4 consisting of a lower member provided with a bead t^2 and an upper member separated from the lower member by the chamber t, substantially as and for the purposes described. 10th. In a track sanding apparatus the improved valve having the chamber t in combination with the air pipe e^3, substantially as and for the purposes described.

No. 42,682. Fastener for Neckties. (*Agrafe de cravate.*)

Louis Greenwold, Leadville, Colorado, U.S.A., 19th April, 1893; 6 years.

Claim.—1st. A necktie fastener constructed of a single piece of sheet metal bent to form a casing and having a stationary jaw and provided with a spring portion arranged on the outside of the casing and carrying a loop forming a jaw, substantially as described. 2nd. A necktie fastener constructed of a single piece of sheet metal forming a casing provided with a jaw, an integral spring portion arranged on the outside of the casing and provided with a loop forming a jaw and receiving within it the other jaw and a guard flange extending from the front of the casing at the lower end thereof and arranged adjacent to the loop, substantially as described. 3rd. A necktie fastener constructed of a single piece of sheet metal and forming a casing to receive the neck band of a necktie, and consisting of the front 4 having its lower edge bent outward to form a guard, a back 5 having its lower portion 8 forming a spring and provided at its outer end with a rectangular extension, said extension having an L-shaped jaw 14, and the sides 6 and 7, the former having a plate formed integral with it arranged beneath the spring portion and having its lower edge extended and curved to form a jaw, substantially as described.

No. 42,683. Basket. (*Panier.*)

Bostwick D. Babcock, Yarker, Ontario, Canada, 19th April, 1893; 6 years.

Claim.—1st. A basket composed of vertical splints B, forming the body, the lower end of the splints inwardly curved and secured to an inner bottom A, and an outer bottom C, intermediately one or both of said bottoms having an annular rabbet receiving the smaller ends of the splints, and the splints and bottoms secured together by rivets or clinched nails D, as set forth. 2nd. A basket constructed of tapering flat splints B, curved inwardly at the bottom and secured to an inner bottom A, and an outer bottom C, said bottoms and splints riveted together, and having hoops E, and H, on the exterior, and provided with handles K, as shown and described.

No. 42,684. Loop for Shafts. (*Boucle de harnais.*)

Edward Lawson Fenerty, Halifax, Nova Scotia, Canada, 19th April, 1893; 6 years.

Claim.—1st. In a vehicle harness, the combination of the shaft loop or tug A, B, C, D, E, with said vehicle harness, substantially

as and for the purpose described. 2nd. The combination of the shaft loop A, B, C, D, E, the clamps N, N, and the straps K, K. 3rd. The combination of the body of the loop A, B, D, the movable jaw C, and the cross strap E. 4th. The combination of the body of the loop A, B, D, and the movable jaw C, all substantially as and for the purpose set forth and described.

No. 42,685. Crutch. (*Béquille.*)

Charles John Farr, Hamilton, Ontario, Canada, April 19th, 1893; 6 years.

Claim.—1st. The standard A, having socket B, at its upper end, and a socket at its lower end for the insertion of rubber tip H, the vertical aperture chambered out to allow the jaws 4, to operate, the apertured lug 8, and the socket L, arranged, as set forth. 2nd. The herein described standard, in combination, provided with vertical spike I, having collar and shoulders, the jaws 4, provided with circular spring 5, the outer slide D, provided with inner projecting wedge 6, the operating projection E, the spiral springs encased in standard, the vertical connecting pin K, and the upper screw J, all formed, combined and arranged, substantially as described and set forth.

No. 42,686. Motor for Boats. (*Moteur pour bateaux.*)

Frederick Giles, South Yarra, Victoria, Australia, April 19th 1893; 6 years.

Claim.—1st. In an apparatus for propelling boats by hand power, a frame as D, held in position by bolts passing through a slot in a slot in a lower standard frame as D^2, and having a circular bore for a bearing for a paddle shaft, fitted with adjustable stay rods as D^3, from a slot on the frame, and a second slot to permit the altering of a bearing as H, substantially as and for the purposes described and as illustrated. 2nd. In apparatus for propelling boats by hand power, a frame as M (for fixing to the side of a boat) said frame being provided with an extended slot, and a racked set of teeth as M^1, for adjusting the height of a paddle shaft bearing by means of a similarly racked block washer as M^2, said washer being kept in its position by a nut working on the screwed end of a flanged bush, as M^4, substantially as described and illustrated on figs. 1 and 3. 3rd. In apparatus for propelling boats by hand power, a slotted bar as J, provided with a specially constructed handle as K, and fixed by bolts at any point along the slot in same, substantially as and for the purposes hereinbefore set forth and as illustrated. 4th. In apparatus for propelling boats by hand power, a forked rod as L, formed with a handle as L^2, substantially as and for the purpose set forth. 5th. In apparatus for propelling boats by hand power, a box shaped spoke as A^5, terminating in a frame as A^3, for a paddle blade, and provided with a slot as A^6, a strap as A^7, and a bolt as A^4, which latter may be tightened up at any point along the slot, substantially as described and illustrated. 6th. In an apparatus for propelling boats by hand power, the combination of a chain as F, and wheels as G and E, with the shaft of a paddle wheel as described and illustrated. 7th. In apparatus for propelling boats by hand power, the combination of a paddle wheel as A, with adjustable framing as M, D and D^2, for the purpose of adjusting the height of the propelling mechanism, substantially as hereinbefore described and as illustrated.

No. 42,687. Car Coupler. (*Attelage de chars.*)

John Byron Graves, Cedar Rapids, Iowa, U.S.A., April 19th, 1893; 6 years.

Claim.—1st. In a car coupler the combination of a draw head made crowning in the middle, as described, and having a slot to receive a coupling dog, and a dog mounted pivotally in said slot, and having a cap attached to or forming a part thereof, to cover said slot, substantially as and for the purpose set forth. 2nd. The combination of the herein described draw head having a slot to receive the coupling dog and inclined on the upper side each way from said slot, and having a suitable extension to cover the slot when down, and a link permanently secured in the draw head by a pin back of the dog, and adapted to couple by engaging a similar dog in the abutting draw head. 3rd. The combination with a draw head, substantially as described, of a dog pivoted in a slot in the upper part thereof, said dog having a slotted upper extension to engage with tilting mechanism, and means substantially as desribed for tilting the same.

No. 42,688. Decoration Composition.

(*Composition pour ornementation.*)

James Ballantine and James Denham, both of Edinburgh, Scotland, April 19th, 1893; 6 years.

Claim.—1st. The decorative composition comprising wheaten flour, wood flour, gum gatti and glue with or without the addition of zinc white or other pigment in about the proportions specified.

No. 42,689. Thermostatic Instrument.

(*Instrument thermorhéostatique.*)

Morris Martin, Malden, Massachusetts, U.S.A., April 19th, 1893; 6 years.

Claim.—1st. In a thermostatic instrument, the combination, with an active member adapted to form part of an electric circuit, of one or more independent hollow terminals to form part of the electric circuit and a fusible connection joining said hollow terminal to the active member to complete the said electric circuit, substantially as described. 2nd. In a thermostatic instrument, the combination with an active member adapted to form part of an electric circuit, of one or more hollow terminals to form part of the said electric circuit and a band or loop of feasible material encircling the active member and enveloping the hollow terminal to complete the electric circuit, substantially as described. 3rd. In a thermostatic instrument, the combination, with an active member consisting of a metallic ring to form part of an electric circuit, of hollow terminal connections on substantially diametrically opposite sides of the said ring and fusible material joining the said terminal connections to the said ring, substantially as described. 4th. In a thermostatic instrument, the combination with an active member consisting of a metallic ring, of hollow terminal connections located on opposite faces of said ring and bands or loops of fusible material encircling the said ring and joining the terminal connections thereto, substantially as described. 5th. In a thermostatic instrument, the combination with an active member to form part of an electric circuit, of a hollow terminal to form part of the said electric circuit, a fusible connection joining said terminal to the active member to complete the electric circuit, and a line wire inserted into said hollow terminal, the said terminal and wire being bent or crimped, substantially as described. 6th. In a thermostatic instrument, the combination with an active member, of a hollow terminal closed at one end and a fusible connection joining the closed end of the said hollow terminal to the active member, substantially as described. 7th. The combination with an electric line wire, of a hollow connection enclosing the end of the said wire crimped longitudinally, to operate, substantially as described.

No. 42,690. Hand Piece for Dental Engines. (*Poignée d'engin dentaire.*)

Frank Demill Price, Toronto, Ontario, Canada, 19th April, 1893; 6 years.

Claim.—1st. A hand piece for dental engines, comprised of jaws, a U-shaped portion pivoted in and between the jaws on pins, and having the engine point or burr journalled in the outer end thereof, and means whereby the said engine point or burr is rotated from the main driving spindle, as and for the purpose specified. 2nd. A hand piece for dental engines, comprised of jaws, a U-shaped portion pivoted in and between the jaws on pins, and having the engine point or burr journalled in the outer end thereof, and deriving motion from a bevel gear pinion of the main driving spindle by intermediate gear wheels, and gear pinion secured on the inner end of the engine point or burr, as and for the purpose specified. 3rd. A hand piece for dental engines, comprised of jaws, a U-shaped portion pivoted in and between the jaws on pins, and having the engine point or burr journalled in the outer end thereof, and deriving motion from a bevel gear pinion on the end of the main driving spindle by intermediate gear wheels, and gear pinion secured on the inner end of the engine point or burr, and means whereby the outer U-shaped portion is clamped or held in any position into which it may be swung, as and for the purpose specified. 4th. The hand piece B, having jaws *b*, the outer U-shaped portion pivoted on the pins *c*, in and between the jaws *b*, the engine point or burr journalled in the outer end of the U-shaped portion, means for flexibly connecting and rotating the said engine point or burr from the main driving spindle, in combination with the spring catch I, provided with a pin *i*, which is designed to fit into one of a series of holes in one of the outer faces of the U-shaped portion C, as and for the purpose specified. 5th. The hand piece B, having jaws *b*, the outer U-shaped portion pivoted on the pin *c*, in and between the jaws *b*, the engine point or burr journalled in the outer end of the U-shaped portion, and having a pinion F, situated on the inner end thereof which is driven by the gear pinion G, on the end of the main driving spindle, and the intermediate gear wheels H, in combination with the spring catch I, provided with a pin *i*, which is designed to fit into one of a series of holes in one of the outer faces of the U-shaped portion C, as and for the purpose specified.

No. 42,691. Advertising Device. (*Appareil d'annonce.*)

Allan Gerald Macdonell, New York, State of New York, U.S.A., 19th April, 1893; 6 years.

Claim.—1st. The combination of a face plate, constructed of alternating opaque and transparent sections, a series of advertising wheels journalled behind this face plate, and provided with transparent panels containing the display matter, and an illuminating device arranged behind said wheel, substantially as described. 2nd. The combination, of a face plate having alternating opaque and transparent sections, a shaft journalled behind the said face plate and carrying a series of advertising wheels, springs for actuating said wheels independently of the shaft, and means for operating the shaft and intermittently releasing the wheels, substantially as described. 3rd. The combination of a face plate having alternating opaque and transparent sections, a shaft journalled behind the face plate and carrying a series of advertising wheels, a spring securing each wheel to the shaft and serving to actuate it when released, pawls engaging the wheels and normally holding them against the action of the springs, and means for automatically disengaging the pawls at intervals, substantially as described. 4th. The combina-

tion of a casing provided with openings for the withdrawal of the panels, and having a face plate constructed as described, a series of advertising wheels adapted to rotate behind the face plate, and carrying a series of radially removable transparent panels, and an illuminating device behind the panels, substantially as described.

No. 42,692. Trunk. (*Coffre.*)

John Thomas Dwyer, Montreal, Quebec, Canada, 19th April, 1893; 6 years.

Claim.—1st. The combination with the body and lid of a trunk, of a tray or trays pivotally connected with said body, and means for automatically elevating and swinging such tray or trays outward over the end or ends of the trunk upon the raising of the lid of same, as and for the purposes set forth. 2nd. The combination of a trunk tray pivotally connected with a vertical plunger rod located in the body of the trunk, means for elevating such rod, and a spring for turning said tray outward over the end of the trunk, as and for the purpose set forth. 3rd. The combination of a trunk tray pivotally connected with a vertical plunger rod located in the body of the trunk, a lever bar pivoted in the lid of the trunk, suitably guided, and having a free end adapted to bear beneath said tray, and elevate same upon the raising of such lid, a spring for turning said tray outward over the end of the trunk, and said lever bar being also shaped to bear upon and return said tray inward against the force of said spring, as and for the purpose set forth. 4th. The combination with the trunk body and its lid, of a locking bar shaped to correspond with and fit the angles formed by the edges of the back pieces of said trunk and lid when the same are situated at approximate right angles to each other, one end of such bar being pivoted within said lid, and the other end located and working within a confining strap in the trunk body, as and for the purpose set forth.

No. 42,693. Trunk. (*Coffre.*)

John Thomas Dwyer, Montreal, Quebec, Canada, 19th April, 1893; 6 years.

Claim.—1st. In combination with the lid of a trunk, a tray or receptacle held therein fulcrumed on pivot pins passing through the ends of the lid and tray at such a point in from the edges of the lid as to allow such tray to be held in place by such pivot pins and supported by the back of the lid when turned out, all as herein set forth. 2nd. The combination with the lid of a trunk, of two receptacles held in the same on pivot pins passing through their ends and the lid, one occupying approximately two-thirds and the other one-third of the transverse space, and both turned out on such pivots, and adapted to project for the greater part of their transverse depth out beyond the edge of such lid, as herein set forth. 3rd. The combination with the lid of a trunk, of a receptacle having compound curved and straight guides closed at both ends, projections from ends of said lid fitting such guide, whereby sliding pivotal connections with such lid are formed to allow such receptacle to be drawn upward and outward to project from same, and means for supporting said receptacle, as shown and described. 4th. The combination with the trunk lid and receptacle held therein, of countersunk compound, curved and straight metal guides B^1, closed at both ends in the ends of such receptacles, projections D, from the ends of the lid fitting therein, and bearing pins D^1, working in groove B^2, and means for securing the same, all as and for the purposes set forth. 5th. The combination with the receptacle B, the sides of lid A, and rollers D, D^1, projecting from said lid, and with the countersunk curved and straight metal guides B^1, having slots E^1, of pivoted hooks E, located at the open ends of said guides and provided with bevelled heads, as shown and for the purposes set forth.

No. 42,694. Liquid Dispensing Apparatus.

(*Appareil de distribution des liquides.*)

William Mills Fowler, Milford, Connecticut, U.S.A., 19th April, 1893; 6 years.

Claim.—1st. In combination, two or more reservoirs, means for bringing them successively over a predetermined point, a discharging device, a receiver carrier adapted to carry the receiver from without into an enclosure beneath the discharging reservoir, and means for operating the said receiver carrier, substantially as set forth. 2nd. The combination, with a supply reservoir, an enclosure surrounding its discharge, and a receiver carrier having a movement to convey the receiver from without to the discharge within the enclosure, and return, of a guard on the receiver carrier forming a part of said enclosure, substantially as set forth. 3rd. The combination, with a supply reservoir, an enclosure surrounding its discharge and a receiver carrier having a movement to convey the receiver from without to the discharge within the enclosure and return of a transparent guard on the receiver carrier forming a part of said enclosure, substantially as set forth. 4th. The combination, with a series of reservoirs, a rotary support for the reservoirs and means for locking the reservoirs in their support, of a base enclosing the discharge ends of the reservoirs, and provided with an opening through which the several reservoirs may discharge, an enclosure surrounding the said discharge opening, a movable receiver carrier, a guard on the receiver carrier forming a part of said enclosure, means for operating the carrier and means for regulating the discharge from the reservoirs, substantially as set forth. 5th. The combination, with the rotary reservoir support comprising the bottom and top plates provided with rims or flanges, the central hub connecting the plates and the cover fitted to the top plate, of the base provided with bearings upon which the reservoir support rests, the spindle engaged with the base and extending through the hub, and a lock for securing the cover to the spindle, substantially as set forth. 6th. The combination, with a supply reservoir and its support, of a receiver carrier having a reciprocating movement to carry the receiver into position to receive the discharge from the reservoir and return it, a wheel fixed to rotate with the carrier an operating wheel engaged with said first named wheel, and an operating crank, substantially as set forth. 7th. The combination, with a supply reservoir, a movable receiver carrier and means for operating the carrier, of a check printer under the control of the means for operating the receiver carrier, substantially as set forth. 8th. The combination, with a supply reservoir, a movable receiver carrier and means for operating the carrier, of a check printer and a feeding device, both under the control, of the means for operating the carrier, substantially as set forth. 9th. The combination, with a supply reservoir, a movable receiver carrier and means for operating the carrier, of a check printer, a feeding device and a cutter, all under the control, of the means for operating the receiver carrier, substantially as set forth. 10th. The combination, with a plurality of reservoirs adapted to contain liquids, having different prices, and means for moving the reservoirs to a predetermined point to discharge, of a variable check printer under the control of the moving reservoirs, to determine the price to be recorded, substantially as set forth. 11th. The combination, with a plurality of reservoirs, and means for moving them into position to discharge, of a receiver carrier, means for operating it, and a variable check printer, the check printer being under the control of the movable reservoirs to determine the price and under the control of the means for operating the receiver carrier to print the check, substantially as set forth. 12th. The combination, with the movable reservoirs, the movable receiver carrier, the variable check printer under the control of the movable reservoirs to set it, and means for operating the receiver carrier, of a stop actuated by the said operating means, to lock the check printer in its position to print the desired price, substantially as set forth. 13th. The combination with a supply reservoir, a receiver carrier mounted upon a rotary support, and means for rotating the carrier support, of a cam wheel controlled by the movements of the rotary receiver support, and a check printer controlled by the cam wheel, substantially as set forth. 14th. The combination, with the rotary support, for the receiver carrier, the receiver carrier and the means for operating it, of the cam wheel provided with teeth, the pawl connected with the rotary carrier support for operating the cam wheel, and the check printer, a movable part of the check printer being under the control of the cam wheel to print the check, substantially as set forth. 15th. The combination, with the rotary support, for the receiver carrier, the receiver carrier, and means for operating it, of a cam wheel under the control of the rotary support, a check printer under the control of the cam wheel, and a cutter under the control of the cam wheel, substantially as set forth. 16th. The combination, with the rotary support, for the receiver carrier, the receiver carrier and means for operating it, and the check printer under the control of said rotary support, of a feeding device for advancing the ribbon or material to receive the impression, a ratchet wheel under the control of a pawl carried by the rotary carrier support, and gear connecting the ratchet wheel with the feeding device, substantially as set forth. 17th. The combination, with the rotary support for the receiver carrier, the receiver carrier and means for operating it, the said rotary support being provided with a hollow hub, of a check printer under the control of the rotary support, a feed roller, a ratchet wheel located in proximity to the face of the said rotary support, a pawl carried by the rotary support in engagement with the said ratchet wheel, the said ratchet wheel being provided with a stem extending through the hollow end of the support and gear, connecting the stem of the ratchet wheel with the feed roller, substantially as set forth. 18th. The combination, with the rotary support for the receiver carrier, of the check printer and the severing device actuated by said rotary support during its movement in one direction and the feeding device actuated by said rotary support during its movement in the opposite direction, substantially as set forth. 19th. The combination, with a reservoir and a casing, partially enclosing its discharge, of a receiver carrier having a movement to carry the receiver within the casing in position to receive the discharge from the reservoir, and a transparent guard carried by the receiver carrier and provided with an indentation to receive the receiver, the said guard serving to close the casing surrounding the discharge and prevent access thereto, substantially as set forth. 20th. The combination, with the rotary receiver carrier, having a predetermined movement in opposite directions, of a stop to prevent the retrograde movement of the carrier during its travel in either direction, and means for shifting the action of the stop at the limit of movement of the carrier, substantially as set forth. 21st. The combination, with the rotary receiver support, provided with a series of teeth, of a double acting pawl seated in position to engage the said teeth, a dog adapted to hold the pawl in position and pawl operating devices located at the limits of the rotary movement of the said receiver support for shifting the pad, substantially as set forth.

No. 42,695. Carpet Sweeper. (*Balayeuse de tapis.*)

Emma Helen Raymond, Grand Rapids, Michigan, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. In a carpet sweeper, a cylindrical brush adapted to roll over the carpet and bend the bristles in contact with the same, substantially as and for the purpose described. 2nd. In a carpet sweeper, a cylindrical brush having flexible radial bristles arranged to roll over the carpet, and journalled on bearings moving parallel to the surface of said carpet, and at a distance from the same less than the semi diameter of said brush, whereby the lower bristles are bent, thrust into the carpet and released, substantially as described. 3rd. In a carpet sweeper, a cylindrical brush having radial flexible bristles, rolls of less diameter than said brush attached to the same, said rolls and brush arranged to roll in contact with the carpet, substantially as and for the purpose described. 4th. In a carpet sweeper in combination with a case having dust pans and a bale, a cylindrical brush journalled in said case, having flexible radial bristles, and rolls of less diameter than said brush, arranged to contact, and rolls upon the carpet, substantially as described. 5th. In a carpet sweeper, in combination with a case having a bale and dust pans, and also a shoe supporting one side of said case, a cylindrical brush journalled in said case, and having rolls at each end engaging and rolling upon the carpet and supporting said case, and radial flexible bristles extending outside the peripheries of said rolls and engaging the carpet, substantially as described. 6th. In a carpet sweeper, in combination with a brush rotating between the same, pans arranged in different horizontal planes, substantially as and for the purpose specified. 7th. In a carpet sweeper, in combination with a brush adapted to roll upon the floor, and operate by bending the bristles thereof, substantially as described, a dust pan at the rear of said brush arranged close to the carpet, and a dust pan in front of said brush, arranged at a considerable distance above the carpet, substantially as and for the purpose specified.

No. 42,696. Stretcher for Carpets.

(*Machine à tendre les tapis.*)

Joshua D. Trenaman, Hamilton, Ontario, Canada, 21st April, 1893; 6 years.

Claim.—In a double action automatic self locking carpet stretcher, the stretcher having hooked teeth T and angle sides B, the slide C having shank 3, the ratchet bar D, and the vertical lever E, pivoted at 2, and provided with the two loops F and H, all formed, arranged and combined, substantially as and for the purpose hereinbefore set forth.

No. 42,697. Pulverizer for Clods. (*Brise-motte.*)

George D. Helderbrant, Pigna, Kansas, U. S. A., 21st April, 1893; 6 years.

Claim.—1st. In a clod pulverizer, the combination, with the framework, of a cutting cylinder mounted therein and comprising an axial shaft, perpendicular heads secured centrally to said shaft, strips arranged in inclined or spiral positions between and secured to the heads, and continuous flat blades secured to said strips, perpendicular to their outer surfaces, and extending between the heads spirally, substantially as specified. 2nd. In a clod pulverizer, the combination, with a supporting framework, and a cutting cylinder mounted in the forward end thereof, of a hollow roller, mounted in said framework, in rear of the cutting cylinder, and provided upon its surface with spirally arranged teeth which are curved rearwardly toward their outer or free ends, substantially as specified.

No. 42,698. Potato Digger.

(*Scarificateur à patates.*)

Henry Krebs, Wadina, Iowa, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. In a potato digger, the combination, with the framework of the shovel located at the front end thereof, an elevator leading from the shovel, a spout below the elevator, a top separating device located above and between the spout and elevator, a trough leading from the separating device to the side of the machine, a clod crusher located in rear of the top separator, a screen located in rear of the clod crusher, and an endless carrier located in rear of the screen, substantially as specified. 2nd. In a potato digger, the combination, with the framework, the shovel located at the front end thereof, the standards rising from the front end of the frame, the spout extending rearwardly from the standards, of an elevator leading from the shovel to the spout, slotted standards mounted on the spout and provided with lateral flanges having perforations, boxes mounted in the slots, pins passed through the perforations and into the boxes, a shaft journalled in the boxes and provided with a roller, and delivery devices leading from the spout, substantially as specified. 3rd. In a potato digger, the combination, with the framework, of a shovel at the front end of the same, an upper and lower screen mounted in the framework in rear of the shovel, and provided at their rear ends with discharges which are out of vertical alignment, the upper screen being provided with perforations larger than those of the lower screen and both screens being inclined, an elevator leading from the discharge in each screen, and an elevator leading from the shovel to and above the front end of the upper screen, substantially as specified. 4th. In a potato digger, the combination with the frame work and the shovel, the latter being located at the front end of the frame work, of a pair of posts rising from the frame work in rear of the shovel, an elevator leading from the shovel to a point between the posts, potato delivering mechanism in rear of the elevator, an inverted U shaped rigid frame mounted on the post, a crank shaft journalled in the posts above the upper end of the elevator, means for giving motion to the shaft, a series of pickers pivotally connected with the cranks of the shaft, connecting rods between the upper ends of the pickers and the rigid U shaped frame, and inclined laterally disposed discharge chute leading from the pickers, substantially as specified. 5th. In a potato digger, the combination with the frame work, the front axle, and the bifurcated arms extending from the latter, of the shovel having rearwardly and forwardly extending arms or beams, terminating in the vertically perforated heads, the heads of the rear arms taking between the bifurcation of the arms of the axle and adjustably connected thereto by bolts, a shackle adjustably connected by a bolt to the front arms, said shackle being provided with transverse perforated draft plate and a D adjustably mounted in the perforations of the plate, substantially as specified. 6th. In a potato digger, the combination with the frame work, the front axle, the shovel having front and rearwardly extending beams, the latter being pivotally connected to the frame work, of a bearing bracket extending from the frame work, a winding shaft journalled in the bracket, a chain connected to the winding shaft and to the front arms or beams of the shovel, a longitudinal shaft journalled in the frame work, a gimbal joint connection between the front end of the same and the rear end of the winding shaft, means for locking the longitudinal shaft, and a crank for operating the same, substantially as specified. 7th. In a potato digger, the combination with the frame work, the rear standard, the potato harvesting mechanism, and an elevator terminating between the standards and leading from such mechanism, of an inclined plate, located in rear of the elevator between the standards, a pair of pivoted L shaped flanges mounted on the plate and combining to form a spout, slots formed in the plate concentric with the pivots and adjusting bolts passed through the flanges and slots, substantially as specified.

No. 42,699. Pneumatic Balanced Slide Valve.

(*Tiroir de vapeur équilibré pneumatique.*)

John McDonald, Tokio, Japan, 21st April, 1893; 6 years.

Claim.—1st. The combination, with the yoke having grooves D^1, of the pneumatic balanced valve having a vertically sliding cover, a packing groove provided with packing O, and apertures leading through the sides of the valve to said packing and registering at their outer ends with the yoke grooves D^1, to admit steam to the packing, substantially as set forth. 2nd. In a pneumatic balanced slide valve, the combination, with a steam chest provided with an air valve, of a slide valve fitted to slide in the said steam chest and provided with a sliding crown plate or cover adapted to be seated on the face plate of the said steam chest, substantially as shown and described. 3rd. In a pneumatic balanced slide valve, the combination, with an open top valve, of a crown plate or cover for the valve, fitted to slide vertically in the said valve, packing strips held in the outer surface of the crown plate or cover, pins engaging the packing strips, and springs secured to the under side of the cover and engaging said pins, substantially as herein shown and described 4th. In a pneumatic slide valve, the combination, with a steam chest provided with an air valve, of the open top slide valve C in the steam chest, and the crown plate F, fitted to slide in the valve and provided with the flange F^1, adapted to be seated on the face plate of the steam chest, substantially as described.

No. 42,700. Stove. (*Poêle.*)

Emile Riva Weston, Bangor, Maine, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. In a stove, the combination with a fire pot and a fuel support at the bottom thereof to sustain a column of fuel within said fire pot, of an outlet flue for the products of combustion located in one side of the said fire pot immediately above said fuel support, and a draft opening to admit air opposite and substantially on a level with said outlet flue whereby a cross draft of air is maintained through the lower portion of the fuel column immediately above the fuel support, to thereby produce an intense heat, substantially as described. 2nd. In a stove, the combination, with a fire pot and an imperforate, refractory hearth at the bottom thereof to sustain a column of fuel within said fire pot, of an outlet flue for the products of combustion located in one side of said fire pot immediately above said hearth, and a draft opening opposite and substantially on a level with said outlet flue to thereby admit air cross-wise through the lower part of said fuel column to produce an intense heat, substantially as described. 3rd. In a stove of the class described, the combination with a fire pot B, an imperforate refractory hearth the combination with a fire pot B, an imperforate refractory hearth at the bottom thereof, and the flue opening b^3, and air opening b^5, arranged above said hearth and substantially opposite each other, and the fuel supply opening b^2, substantially as described. 4th. In a stove, a fire pot, an imperforate refractory hearth at the bottom thereof, and air and outlet flue openings above said hearth and opposite each other, combined with a vertical flue d, ovens A^5, A^2, and cross flues d^1, d^2, d^3, and dampers to control the same, substantially as described. 5th. In a stove, the combination with a fire pot, an imperforate refractory hearth at the bottom thereof, and a

flue opening in the side of said fire pot immediately above said hearth, and an air opening opposite the same, of an ash pit below said hearth, substantially as described.

No. 42,701. Nut Lock. (*Arrête-écrou.*)

Edward W. Taylor, Salt Lake City, Utah, U.S.A., 21st April, 1893; 6 years.

Claim.—The combination, with a bolt, of a nut provided with two bevelled grooves in its threaded bore on opposite faces thereof, each having its cam face arranged reversely to the other, and pins or keys adapted to be inserted in said grooves to engage said faces and lock the nut from movement on the bolt in either direction, substantially as specified.

No. 42,702. Support for Hose. (*Support pour boyaux.*)

Philander Frank Daniels, Waltham, Massachusetts, U.S.A., April 21st, 1893; 6 years.

Claim.—In a hose supporter, the clasp A, comprising an approximately U shaped spring, having a button or head on one of its arms, and a hook or loop forming a horizontal opening on the opposite arm, in combination with a tape secured to said spring and adapted to spread said arms, substantially as described.

No. 42,703. Press for Cheese. (*Presse à fromage.*)

James Lathrop Helmer, Rome, New York, U.S.A., April 21st, 1893; 6 years.

Claim.—1st. The combination, with the press frame, of stationary supports at both ends of the press frame, on which the latter moves vertically, a head block, and means whereby it is pressed against the cheeses, a movable foot block, against which the cheeses rest, lifting mechanism connecting a stationary support at the foot end of the press frame, with the press frame and with the foot block lifting mechanism connecting a stationary support at the head end of the press frame with the press frame, and a connection whereby the lifting mechanism at the foot end of the press frame is connected with the lifting mechanism at the head end thereof, thereby lifting both ends of the press frame simultaneously by the application of pressure to the head block, substantially as set forth. 2nd. The combination, with the press frame, of stationary supports, on which the latter moves vertically, a head block and means whereby it is pressed against the cheeses, a movable foot block against which the cheeses rest, elbow levers pivoted to both sides of the press frame supporting bars extending from the forwardly projecting arms of the elbow levers downwardly to said supports and a cross head arranged in rear of the press frame and connected with the foot lock and with the downwardly projecting arms of the elbow levers, substantially as set forth. 3rd. The combination with the press frame, of stationary supports on which the press frame moves vertically, a head block and means whereby it is pressed against the cheeses, a movable foot block against which the cheeses rest, an elbow lever pivoted to the foot end of the press frame and having its downwardly projecting arm connected with the foot block, and a supporting bar pivoted at its upper end to the forwardly projecting arm of the elbow lever and with its lower end to a stationary support, substansially as set forth. 4th. The combination with the press frame, the movable head block and means whereby it is pressed against the cheeses and the movable foot block, of guide feet on which the press frame moves, vertically supporting bars connected with their lower ends to the guide feet, elbow levers journalled on the press frame and connected with their front arms to the upper ends of the supporting bars, a cross head connected with the opposite arms of the elbow levers, and bars connecting the foot block with said cross head, substantially as set forth. 5th. The combination with the vertically movable press frame, the elbow levers pivoted thereto and the movable foot block, of a cross head connected with the elbow levers and provided with sockets, guide bars attached to the foot block and resting in said sockets, and a tie rod connecting the foot block with the cross head, substantially as set forth. 6th. The combination with the press frame, the head block and means whereby it is pressed against the cheese, of station ary guide feet on which the front and rear portions of the press frame move vertically, elbow levers pivoted upon the front and rear portions of the press frame and connected by supporting bars with the front and rear guide feet, rods connecting the elbow levers, a cross head connected with the rear elbow levers, and a movable foot block connected with the cross head, substantially as set forth. 7th. The combination with the press frame, the head block, the pressure screw, and the movable foot block, of a cross head arranged in the rear of the foot block, rods connecting the foot block with the cross head, stationary guide feet on which the press frame moves vertically, elbow levers pivoted to the press frame near both ends thereof, supporting bars connecting the elbow levers with the guide feet, rods connecting the front and rear elbow levers, and rods connecting the cross head with the rear elbow levers, substantially as set forth. 8th. The combination with the vertically movable press frame, its stationary support, a movable head block, a movable foot block, and an automatic lifting device connecting the movable press frame with the foot block, of a weight lever connected with the movable press frame and exerting a downward pressure upon the same whereby the pressures exerted by the movable press frame and the weight lever are simultaneously applied to the foot block in the same direction, substantially as set forth. 9th. The combination with the vertically movable press frame, a movable head block, a movable foot block, and an automatic lifting device connecting the movable press frame with the foot block, of a stationary standard provided with an upright gear rack, a gear wheel attached to the press frame and meshing with said gear rack and and a weight lever connected with said gear wheel and tending to move the same downwardly on the gear rack, substantially as set forth. 10th. The combination with the vertically movable press frame, a movable head block, a movable foot block, and an automatic lifting device connecting the movable press frame with the foot block, of stationary standards provided with upright gear racks, a transverse shaft journalled in the press frame, gear wheels, mounted on said shaft and meshing with said gear racks, and weight levers mounted on said shaft and provided with pawls which engage with said gear wheels and whereby the latter are moved downwardly on the gear racks, substantially as set forth. 11th. The combination with the vertically movable press frame, a movable head block, a movable foot block, and an automatic lifting device connecting the movable press frame with the foot block, of stationary standards provided with upright gear racks, bearings secured to the press frames and provided each with loops which embrace the standards, a transverse shaft supported in said bearings, gear wheels mounted on said shaft and meshing with said gear racks, and weight levers mounted on said shaft and connected with said gear wheels, substantially as set forth.

No. 42,704. Pump. (*Pompe.*)

Alois Riedler, Berlin, Germany, 21st April, 1893; 6 years.

Claim.—1st. The arrangement of a steam engine or other motor directly connected with a compressor or pump fitted with controlled valves, so that the pist n rod of the motor drives direct the piston of the compressor or pump, the connection of the steam, and compressor or pump cylinders being made by means of bed plates or by bolts, substantially as described. 2nd. The arrangement of single acting compressing cylinders for single and two or several stage compressors directly connected with the steam cylinders or motor, and directly driven by the piston rods of the steam engine, substantially as described. 3rd. The combination of a steam engine with one or several steam cylinders being directly connected with compressing or pump cylinders fitted with controlled valves, the gear of which is driven by the motor. 4th. The combination of two or more compressing cylinders with a motor, so arranged that the air or gas is first taken in by one or several low pressure cylinders compressed therein to an intermediate pressure, and then delivered to one or several high pressure compressing cylinders which complete the compression of the final presure. 5th. The combination of a two or several compressing cylinders with intermediate coolers, substantially as described. 6th. The combination of a compressor, or pump with controlled valves with a gear which is driven from the engine, and which gear controls the valves either positively together with the action of a separate power as described. 7th. The combination of a compressor or pump with controlled valves with a gear which closes the valves at the end of the corresponding piston stroke, and withdraws the gear before the beginning of the next stroke, and leaves the valve free to open automatically as described. 8th. The combination of a compressor or pump with controlled valves with a gear which opens and closes the valves mechanically either by transmitting the positive motion of the gear or by means of a separate power, or by positive motion together with the action of a separate power, substantially as described. 9th. The combination of a compressor or pump with controlled valves with oscillating reciprocating or rotating shafts or spindles projecting into the valve chambers and driven by the motor, which shafts or spindles transmit the closing or opening movement, to the valves, substantially as described. 10th. The combination of a compressor or pump with controlled valves with a gear containing a loose connection between the valve and the working parts of the motor for the purpose of transmitting the closing movement of the valves when they are to be closed, and to withdraw the gear from the valve when the valve is to be left free to open automatically as described. 11th. The combination of a compressor or pump with controlled valves with a gear to control the said valves containing in the gear an adjustible device for the purpose of regulating the position of the working parts of the said gear as described. 12th. The combination, with a pump cylinder fitted with controlled valves of an air vessel beneath the suction valve and with or without an air vessel above the delivery valve, substantially as described.

No. 42,705. Method of Making Cheese.
(*Appareil pour la fabrication du fromage.*

John Boyd, Elmhurst, Illinois, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. The improvement in the art or process of manufacturing cheese from milk, wherein the cream or natural fatty globules of the milk are more or less separated from the serum, consisting in first bringing the milk to a condition of complete emulsification by simultaneously heating and agitating it, and then coagulating it while in this emulsified condition by the addition of renet, whereby the loss or escape of said fatty matter is prevented, substantially as specified. 2nd. The improvement in the art or process of manufacturing cheese from milk, wherein the natural fatty matter of the

milk and the serum thereof are more or less separated, consisting in first subjecting such milk to heat and agitation until the milk is brought into a complete emulsified condition and the fatty matter evenly distributed throughout the mass and thoroughly incorporated with the milk, and then after the temperature has been brought to the required degree adding the renet and continuing the agitation for a short period thereafter to ensure the distribution of the renet throughout the mass, and whereby the emulsified condition of the milk is maintained up to the point or time of its coagulation, whereby a curd is produced without the loss or escape of fatty matter, and wherein the natural fatty matter of the milk is evenly distributed throughout the mass, substantially as specified.

No. 42,706. Rotary Pump. (*Pompe rotative.*)

Benjamin Franklin Faber, Buffalo, New York, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. The combination with the casing and the rotary cylinder, having a pocket or recess, of a piston arranged in said pocket, and pivoted at its front or advancing end to the cylinder, and provided at its outwardly swinging rear end on its outer side with a receptacle in which foreign substances in the liquid are collected, substantially as set forth. 2nd. The combination, with the casing and the rotary cylinder having a pocket or recess, of a swinging piston arranged in said recess, and pivoted at its advancing end in the front end of said pocket, and provided at its free rear end on its outer side with a receptacle composed of a longitudinal bottom plate projecting outwardly from the piston, end plates arranged at an angle to said bottom plate, and a longitudinal front plate or rim connecting the outer ends of said end plates, substantially as set forth. 3rd. The combination with the casing, of a rotary cylinder provided with a peripheral pocket or recess having longitudinal walls extending from the periphery of the cylinder inwardly toward the axis thereof, a longitudinal socket formed in the front wall of said pocket near its outer edge, and a piston composed of a longitudinal plate adapted to bear against the front wall of said pocket, and having its outer longitudinal edge seated in said socket, and a receptacle formed on the outwardly swinging rear end of the piston plate, the bottom of said receptacle and the rear wall of the pocket being curved concentric with the socket in the front wall of the pocket, substantially as set forth.

No. 42,707. Automatic Gauging Tap.

(*Robinet-gauge automatique.*)

George Frederick Oakley, Toronto, Ontario, Canada, April 21st, 1893; 6 years.

Claim.—1st. In an automatic gauging tap, the water case adapted to have an inner case fitted within and having an outlet in the under side of the end, and an air vent in the top side, both outside the vessel supporting the tap, substantially as shown and specified. 2nd. In an automatic gauging tap, the inner case having a capacity chamber within it, the diametrical ports at one end, into said chamber, the outlet in the under side at the other end, and the air vent in the top side at a point without the vessel supporting the tap, substantially as shown and specified. 3rd. An automatic gauging tap composed of an outer case, having an outlet in the under side at one end and an intermediate air vent in the top side, the inner case fitted within said outer case, and having the diametrical ports at one end, the outlet in the under side at the outer end, and the intermediate air vent in the upper side, said outlet and air vent to correspond to those of said outer case, when in position to discharge, and the stop pin, to regulate the movement of said inner case within said outer case, substantially as shown and specified.

No. 42,708. Chair Pad. (*Coussinet de fauteuil.*)

Earl Glen Wheeler and John Johnson Totman, both of Amsterdam, New York, U.S.A., April 21st, 1893; 6 years.

Claim.—A chair pad A, consisting of a piece 1, formed with a saddle 1^a, adapted to rest on the top of a chair, having legs 1^b, adapted to straddle the back, the rearwardly inclined gripping piece 2, adapted to rest over the rear edge of the top of the back, providing parallel finger grooves 2^b, and having curved spring jaws 2^a, and the cylindrical cushion 3, of elastic material grasped and held by the jaws, substantially as described. 2nd. The combination, with a chair, of the pad A, consisting of a metal piece 1, formed with a saddle 1^a, located on the top of the back, having legs 1^b, straddling the back, the rearwardly inclined gripping piece 2, located over the rear edge of the top of the back, providing parallel finger grooves 2^b, and having curved spring jaws 2^a, and the cylindrical cushion 3, of elastic material grasped and held by the jaws, substantially as described.

No. 42,709. Method of Treating Sludge.

(*Appareil pour le traitement des résidus.*)

The Grasselle Chemical Company, assignee of Hans A. Frasch, all of Cleveland, Ohio, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. The process of recovering and concentrating the sulphuric acid of sludge, which consists in leaching the sludge with water, the temperature of which is below the melting point of heavy sludge and the volatilizing point of light sludge, and then passing the watery product from one tank through the sludge of a series of tanks in succession, the accumulating solution being carried from tank to tank until the desired concentration or density of acid is obtained, substantially as set forth. 2nd. The method herein described of treating sludge, which consists in removing the free acid from the sludge by means of cool water, and then subjecting the sludge to the action of an alkaline solution and heat, until the remaining sulphuric acid combinations are saturated and brought into solution, and the oily substance separated therefrom, substantially as set forth. 3rd. The process herein described of treating sludge, which consists in removing the free acid by means of cool water, then subjecting the sludge to the action of heat and alkali to liberate the oily substances and neutralize the acid combinations, then drawing off the oil, and at last treating the residum with a neutral or acid salt which is soluble in water, thereby separating off the resinous or pitchy constituent, substantially as set forth.

No. 42,710. Device for Elevating Electric Lamps.

(*Mécanisme pour hausser les lampes électriques.*)

Charles Rollin Eddy, Springfield, and Stanley Edwin Whitehead, St. Louis, both of Missouri, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. In a windlass, in combination, the supporting arms, the shaft journalled therein and having the drum fixedly held thereon, one end of such shaft projected beyond its bearing, locking devices carried by the shaft, to normally lock the shaft to its bearing, and a detachable crank member having unlocking means adapted to be moved into contact with the shaft locking devices, to unlock them when the crank is applied to the shaft, substantially in in the manner and for the purposes described. 2nd. The combination, with the supporting arms, having bearing apertures, one of such apertures having lock notches, of a drum carrying shaft journalled in such apertures, said shaft having one end projected to form a crank receiving end, such shaft slotted longitudinally, a spring actuated lever pivoted in such slotted shaft, and normally held with one end in locked engagement with one of the lock notches, its other end flush with the outer face of the crank end and a crank member having an eccentric or cam lever adapted to be moved into engagement with the upper end of such lever to tilt it, when the crank is applied, substantially as and for the purposes described. 3rd. The combination of the supporting arms a, a^1, the arm a^1, having radial lock notches a^3, the slotted shaft C, journalled in such arms a, a^1, and carrying the drum B, and having an extension c^x, the spring actuated lever D, having a member d, normally in engagement with one of the notches a^3, its opposite end projected to the top of the extension c^x, the detachable crank F, having its aperture formed with a radial slot f^2, and the cam lever G, journalled in such slot f^2, all substantially as and for the purpose described.

No. 42,711. Tongs for Flooring, Etc.

(*Pinces pour planchers, etc.*)

George Washington Miller, Lucas, and Orin Loren Bristol, Morrice, both of Michigan, U.S.A., April 21st, 1893; 6 years.

Claim.—1st. The combination of the reins or handles A, the pivot C, the jaws B and projections or points D, substantially as set forth and described. 2nd. The combination with the rod or bar F and the reins or handles A, substantially as and for the purpose set forth.

No. 42,712. Knitted Fabric. (*Tricot.*)

William Henry Haskell, Pawtucket, assignee of Frank Wilcomb, Providence, both of Rhode Island, U.S.A., April 21st, 1893; 6 years.

Claim.—1st. A tubular knitted fabric having a mock seam standing out from the face thereof. 2nd. A tubular fabric having a mock seam standing out from the face of the fabric, and knitted with the same thread as the body portion. 3rd. A tubular knitted fabric having a mock seam formed by two additional wales 61 between the end wales 60, the thread extending across from each end wale to the additional wale on the opposite side and between the additional wales, substantially as described. 4th. A seamless shaped tubular fabric having a mock seam extending throughout the shaped and straight portions, substantially as described. 5th. A tubular fabric having a straight portion the full width of the fabric, a shaped portion and a straight portion of reduced diameter, said reduced and shaped portions having a knitted mock seam and the full width being knitted plain, substantially as described. 6th. A tubular fabric widened by additional wales and having at one point of the widening an independent loop intermediate of the regular courses with the thread extending between the same and the opposite widening wale and thence across to the regular course, substantially as described. 7th. The tubular fabric described herein widened by introducing new wales in the front and back rows of knitting and having an independent loop formed in the regular wale of the back course and intermediate of the regular courses, the thread extending from said intermediate loop across the opening to the new front wale and thence to the regular course and the new back wale having thread crossed from the regular wale at the front then to the new stitch previously formed and recrossed to the regular course at the back of the fabric, substantially as described. 8th. The herein described method of forming a mock seam in a straight portion, of a knitted fabric consisting in knitting along one row, crossing to the opposite row, and then recrossing to the front and then

to the back and knitting along said back row, and repeating the operation in each course, substantially as described. 9th. The herein described method of forming a mock seam in a knitted fabric consisting in knitting along the front row, omitting the end needle of said row and crossing to the end needle of the back row, then recrossing to the end needle of the front row, and then to the back row omitting the end needle thereof, and knitting along said back row to complete the course. 10th. The herein described method of widening, consisting in knitting along one row, bringing in a fresh needle in this row to form a new loop after having first formed an independent loop in the regular wale of the opposite row, and then recrossing to said opposite row and continuing along the same to form the regular course, the said independent loop being intermediate of the courses, substantially as described. 11th. The herein described method of widening, consisting in knitting along one row and introducing a fresh needle in this row after having first formed an independent loop in the regular wale of the opposite row, and then recrossing to said opposite row and continuing the course to the end of the first row, then crossing to a fresh needle in the opposite or back row, and then recrossing to the needle in the front row which has been newly introduced, and then recrossing to the back row and continuing along this to form the next course.

No. 42,713. Machine for Grinding Rolls.

(*Machine à remouler les rouleaux.*)

David Joseph Davidson, Brockway; Abraham S. Martin, Port Huron, and Amos A. Huskell, Brockway, all of Michigan, U.S.A., 21st April, 1893; 6 years.

Claim.—1st. In a machine for turning rolls, the combination of the frame, the head and tail block, the boxes at each end, having vertical and lateral adjustment, and a drive pulley adapted to be secured to the shaft of the roll, substantially as described. 2nd. In a machine for truing rolls, the combination of the frame, the tail and head blocks, the cross bar having the adjustable box thereon, the complementary adjustable box on the frame, and the drive pulley adapted to be secured upon the shaft of the roll, substantially as described. 3rd. In a machine for truing rolls, the combination of the frame, the head and tail blocks the cross bar extending across the frame, and adjustable thereon, the adjustable box thereon, the complementary adjustable box on the frame, the drive pulley adapted to be secured upon the shaft of the roll, and the adjustable backing rolls H, substantially as described. 4th. In a machine for grinding rolls, the combination of the frame the roll shaft journalled in bearings therein, the drive pulley on said shaft, a grinding wheel, and a feed device for said grinding wheel driven from the roll shaft, substantially as described. 5th. In a machine for truing rolls, the combination of the frame, the roll shaft journalled in bearings therein, the grinding wheel, a driven shaft on which said wheel slidingly engages, a laterally adjustable frame in which said shaft is journalled, and a feed device for the grinding wheel comprising a screw shaft journalled in the grinding wheel frame, and mechanism for driving said screw shaft from the roll shaft, substantially as described. 6th. In a machine for truing rolls, the combination of the frame, the roll shaft journalled in bearings therein, the grinding wheel, a driven shaft on which said wheel slidingly engages, a laterally adjustable frame in which said shaft is journalled, a feed device for the grinding wheel comprising a screw shaft journalled in the grinding wheel frame, and automatically reversing feed mechanism for said screw shaft, substantially as described. 7th. In a machine for truing rolls, the combination with the bearings in the frame, the roll shaft journalled therein, the means for driving said roll shaft, the driven guiding wheel, the feed mechanism for said guiding wheel driven from the roll shaft, and comprising the shaft W^3, having bevel gear thereon, the shaft P journalled in the pivoted bearing, and having a bevel pinion meshing with the gear on the shaft W^3, the sleeve R^2 keyed on the shaft P, and sliding therein, the yoke S^1, embracing the sleeve and forming the bearing for the upper end of the shaft P, the bevel gear wheel R R^1 on the sleeve, the bevel pinion Q, the screw shaft P on which said pinion is secured, the flanged bearing Q on the yoke, the eccentric T engaging therein, the weighted arm T on said eccentric, the actuating lever U having head U^2 on opposite side of the arm T^1, the bell crank lever V, tripper rod V^1, tripper blocks V^3, and the block P^1 adapted to strike said blocks and engaging the grinding wheel, substantially as described. 8th. In a machine for truing rolls, the combination of the frame, the bearing for the roll shafts, the guiding wheel journalled in an adjustable frame, the feed shaft for said grinding wheel also journalled in said frame, and a driving mechanism for said driving shaft having means for automatically compensating for the adjustment of the shaft, substantially as described. 9th. In a machine for truing rolls, the combination of the frame, the bearing for the roll shaft, the grinding wheel journalled in the adjustable frame, the feed shaft for said grinding wheel journalled in said frame, a gear wheel on the end of said feed shaft, a sliding sleeve carrying opposing gear wheels, either of which is adapted to be thrown into engagement with the gear wheel on the feed shaft, and a pivoted driving shaft for said sleeve slidingly engaging with the drive shaft, substantially as described.

No. 42,714. Apparatus for Ageing Wines, &c.

(*Appareil pour vieillir les vins.*)

Theodore Ruggles Timby, Washington, Columbia, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The process herein described of ageing or ripening wines, spirits or other liquors, which consists in subjecting the liquor, in bulk, to rapid mechanical vibration, producing a sustained tremulous action throughout the body of the liquor, as explained. 2nd. The process herein described of ageing or ripening wines, spirits or other liquors, which consists in storing the same, in bulk, on trucks on a railway track, the surfaces of the truck wheels and rails being relatively uneven, and by sustained relative movement between the trucks and the supporting track producing tremulous agitation throughout the body of the liquor, as explained. 3rd. An apparatus for ageing or ripening wines, spirits or other liquors, consisting of an endless railway track, a springless truck or trucks supported thereon and adapted for storing and carrying the liquor to be treated, and suitable driving mechanism for producing relative movement between the trucks and the railway, substantially as set forth. 4th. An apparatus for ageing or ripening wines, spirits or other liquors, consisting of a railway track, one or more trucks mounted thereon, adapted for carrying the liquor to be treated, the surfaces of the railway rails and of the wheels being relatively uneven, and means for communicating relative movement between the trucks and the supporting track, for producing tremulous mechanical agitation throughout the body of the liquor, substantially as explained. 5th. The combination of an endless railway track, one or more trucks supported thereon, and carrying the liquor under treatment, suitable driving mechanism for imparting sustained relative movement between the trucks and railway, and heating apparatus for elevating the temperature of the liquor under treatment, substantially as explained. 6th. An apparatus for ageing or ripening wines, spirits or other liquor, consisting of a railway track, one or more trucks supported thereon for carrying the liquor under treatment, mechanism for imparting sustained relative movement between the truck and supporting track, and heating and cooling appliances for producing changes in temperature in the liquor, substantially as explained.

No. 42,715. Bicycle. (*Bicycle.*)

John Benjamin Evans, Philadelphia, Pennsylvania, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In combination, with a bicycle having a driving wheel, a crank axle, driving pedals mounted on said axle, two sprocket wheels loosely mounted on said axle, a clutch adapted to make engagement with either of said sprocket wheels at will, but so influenced by a spring as to be normally in engagement with the smaller of said wheels, substantially as set forth. 2nd. In combination, with a bicycle having a driving wheel, a crank axle, driving pedals mounted on said axle, two sprocket wheels mounted on said axle and geared with the driving wheel, a clutch mounted upon said axle and adapted to be set in engagement with either of said sprocket wheels, said axle and clutch being together mounted in a boxing, and means for shifting said clutch, substantially as set forth. 3rd. In combination, with a bicycle having a driving wheel, a crank axle, driving pedals mounted upon said axle, two sprocket wheels mounted upon said axle and geared with the driving wheel, a clutch mounted upon and keyed to the axle, and adapted for engagement with either of said sprocket wheels, an enclosing boxing in which said axle and clutch are mounted, within which they are provided with ball bearings and means for occasioning the throw of the clutch, substantially as set forth. 4th. As an article of manufacture, a composite wheel for a safety bicycle of the character described, consisting of a hub embodying a clutch face, and a removable body or rim, substantially as set forth. 5th. In a bicycle, in combination with a driving wheel, a crank axle, clutch faced sprocket wheels mounted on said axle and geared with the driving wheel, the hubs of which sprocket wheels each embody a ball race groove, a clutch mounted on an axle, means for throwing the clutch, a casing encircling the clutch and embodying ball race grooves which respectively face the ball race grooves in the hubs to form ball races, and balls mounted in said races, substantially as set forth. 6th. In a bicycle, in combination, with a driving wheel, a crank axle, clutch faced sprocket wheels mounted on said axle, the hubs of which each embody an inclined ball race groove, which sprocket wheels are geared with the driving wheel, a clutch mounted on said axle, means for throwing the clutch, a casing encircling the clutch and overhanging the inner ends of the hubs of the sprocket wheels, which casing embodies inclined ball race grooves which respectively face the respective grooves upon the hubs to form ball races, and balls mounted in said races, substantially as set forth. 7th. In a bicycle, in combination, with a driving wheel, a crank axle, a clutch faced sprocket wheel the hub of which embodies an inclined bore groove, a collar embodying an inclined curved face, said collar being so set that its curved face registers with the inclined groove of the hub to form a ball race, and balls mounted in said race, substantially as set forth. 8th. In a bicycle, in combination, with a driving wheel, a crank axle, clutch faced sprocket wheels mounted on said axle and geared with the driving wheel, the hubs of which sprocket wheels each embody

an inclined rim groove and an inclined bore groove, a clutch mounted on said axle, means for throwing the clutch, a casing or annular framing embodying inclined ball race grooves which face the rim grooves of the hubs to form ball races, balls in said races, collars or kindred projections each embodying a curved face, mounted on the crank axle and each facing one of the bore grooves to form a ball race, and balls mounted in said races, substantially as set forth. 9th. In combination, with a bicycle, a crank axle, a clutch, a pair of clutch faced sprocket wheels, and a casing, ball races formed by inclined grooves in the casing and in the hubs of the wheels, ball races formed by inclined grooves in the bores of the sprocket wheels and in collars or projections on the crank axle, and balls in the respective ball races, substantially as set forth. 10th. In combination with a bicycle, a crank axle, a clutch, a pair of clutch faced sprocket wheels and a casing, ball races formed by inclined grooves in the casing and in the hubs of the wheels, ball races formed by inclined grooves in the bores of the sprocket wheels and in collars or projections on the crank axle, balls in the respective ball races, and means for taking up wear of the balls and in the faces of the grooves, substantially as set forth. 11th. In a bicycle, in combination, an axle, a sprocket wheel mounted thereon, a pair of ball races, the balls of which furnish such lateral support to said wheel as to maintain it in position, and a clutch adapted to be thrown into and out of engagement with said wheel, substantially as set forth.

No. 42,716. Vertical Broiler. (*Gril vertical.*)

James Gibbons, Jersey City, State of New Jersey, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber and fire chambers at the sides thereof, said broiling chamber communicating indirectly with the fire chambers which consume fatty fumes from the food, substantially as described. 2nd. A broiling apparatus made with a central or intermediate food broiling air superheating chamber, fire chambers at the sides thereof and communicating indirectly therewith and consuming fatty fumes from the food, and an upper conduit receiving and carrying off fumes escaping at the front of the broiling chamber, substantially as described. 3rd. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber, fire chambers at the sides thereof and communicating indirectly therewith and consuming fatty fumes from the food, an upper conduit receiving and carrying off fumes escaping at the front of the broiling chamber and a hood projecting at the front of said conduit, substantially as described. 4th. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber, fire chambers at the sides thereof and communicating indirectly therewith and consuming fatty fumes from the food, an upper chamber receiving the hot products and having an outlet therefor, and a conduit in said upper chamber communicating with its outlet and carrying off fumes escaping at the front of the broiling chamber, substantially as described. 5th. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber, fire chambers at the sides thereof and communicating indirectly therewith and consuming fatty fumes from the food, an upper chamber receiving the hot products and having an outlet therefor, a conduit in said upper chamber communicating with its outlet and carrying off fumes escaping at the front of the broiling chamber, and a hood at the front of said conduit, substantially as described. 6th. A broiling apparatus made with a central or intermediate broiling chamber, fire chambers at the sides thereof, an upper chamber receiving the hot products and having an outlet therefor, and a conduit in said upper chamber carrying off fumes escaping at the front of the broiling chamber, and a conduit having openings through its rear portion forming a lateral passage for the hot products of the fire chambers toward the hot product outlet, thereby inducing increased rearward draft of fatty fumes through the conduit, substantially as described. 7th. The combination, in a broiling apparatus, of a casing, a food broiling and air superheating chamber A therein, fire chambers B, B, next the broiling chamber, chambers D, D, below the fire chambers, fluid fuel burners in the chambers D, and an outlet chamber G, above the chambers A, B, B, passages d^2, D^1, d^1, being provided between the chambers A, D, D, substantially as described. 8th. The combination, in a broiling apparatus, of a casing, a food broiling and air superheating chamber A therein, fire chambers B, B, next the broiling chamber, chambers D, D, below the fire chambers, fluid fuel burners in the chambers D, D, a chamber G, above the chambers A, B, B, and having an outlet g, passages d^2, D^1, d^1, being provided between the chambers A, D, D, and a conduit M, in the chamber G, substantially as described. 9th. The combination, in a broiling apparatus, of a casing, a food broiling and air superheating chamber A therein, fire chambers B, B, next the broiling chambers, chambers D, D, below the fire chambers, fluid fuel burners in the chambers D, D, a chamber C above the chambers A, B, B, and having an outlet g, passages d^2 D^1, d^1, being provided between the chambers A, D, D, a conduit M, in the chamber G, and a hood L at the front of the conduit, substantially as described. 10th. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber, fire chambers at the sides thereof, an indirect passage being provided for escape of hot air and fatty fumes for the broiling chamber to the fire chambers, and a deflecting plate in said passage distributing the air and fumes to both fire chambers, substantially as described. 11th. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber A, fire chambers B, B, at the sides thereof, chambers D, D, being provided below the fire chambers, passages d^2, D^1, d^1, being also provided between the chambers A, D, D, and a wall re-enforcing and fume distributing plate d^3, in the passage D^1, substantially as described. 12th. A broiling apparatus made with a central or intermediate broiling chamber and fire chambers at the sides thereof, the bottom plate or wall of the fire chambers being extended within the broiling chamber as a marginal sloping fat dripping ledge, substantially as described. 13th. A broiling apparatus made with a broiling chamber having a lower vertical grid sustaining pocket, substantially as described. 14th. A broiling apparatus made with a central or intermediate broiling chamber and fire chambers at the sides thereof, said broiling chamber having an open bottom comprising a sloping fat dripping ledge and a central vertical grid sustaining pocket, substantially as described. 15th. A broiling apparatus made with a broiling chamber having a lower vertical grid sustaining pocket between its opposing cooking walls, said walls having inwardly extending lateral rails or projections guiding and centrally steadying the grid when in said pocket, substantially as described. 16th. A broiling apparatus made with a central or intermediate food broiling and air superheating chamber, fire chambers at the sides thereof and communicating indirectly therewith to consume fatty fumes from the food, a fluid fuel burner heating the broiling chamber cooking walls, and provided at their mixing tubes and outside the burner or fire chambers with openings admitting atmospheric air, substantially as described, whereby the gas and air mixture in the burners is not vitiated by the hot air and fatty fume mixture consumed in the fire chambers, as set forth. 17th. The combination in a broiling apparatus, of a casing, a broiling chamber A, fire chambers B, B, at the sides thereof, and burner chambers D, D, below the fire chambers, said casing having front openings c^3, c^4, to the chambers D, B, respectively, and doors or gates, each closing the vertically ranging pair of openings c^3, c^4, of one communicating pair of chambers D, B, substantially as described. 18th. The combination with a broiling apparatus comprising a casing, a broiling chamber therein, and two fire chambers one at each side of the broiling chamber, said casing having an upper outlet chamber receiving the hot products from both fire chambers, and a conduit traversing the outlet chamber and carrying fatty fumes from the front of the broiling chamber, of a water back device sustained by or from the fume conduit within the upper outlet chamber and extending over the hot waste product outlets of the fire chambers, substantially as described.

No. 42,717. Heating Furnace. (*Calorifère*)

James Gibbons, Jersey City, State of New Jersey, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In a heating furnace of the character described, the combination with a casing having a lower opening, of a fire pot in the casing having a lower opening, a fluid fuel burner at said lower openings flaming into the fire pot, said fire pot made smaller than the casing to provide an air superheating chamber between them, which communicates with the fire pot at or near the burner or flame opening, the fire pot also having an open front and an open upper hot product outlet or passage, and the casing having atmospheric air inlets to the air superheating chamber, substantially as described. 2nd. In a heating furnace of the character described, the combination with a casing having a lower opening, of a fire pot in the casing having a lower opening, a fluid burner flaming into the fire pot at said openings, said fire pot made smaller than the casing to provide an air superheating chamber between them, and also having an open front and upper front and rear hot product outlets, and the casing having atmospheric air inlets to the air superheating chamber, substantially as described. 3rd. In a heating furnace of the character described, the fire pot made with a lower flame inlet opening and an open front and with a rear hot product outlet or passage opening to a hot product flue, and also with an upper independent outlet or passage opening to said flue, substantially as described, whereby hot products may have a rear exit from the fire pot, and surplus hot products seeking front exit will pass through the upper front outlet, as set forth. 4th. In a heating furnace of the character described, the fire pot made without lower hot product outlets, and having a lower flame inlet opening and an open front, and provided with both rear and front upper hot product outlets or passages, substantially as described, whereby flame or hot products can have exit only from the upper part of the fire pot mainly through its rear outlets, and surplus hot products seeking front exit will pass through the upper front outlet, as set forth. 5th. In a heating furnace of the character described, the combination with a casing, of a fire pot therein and made smaller to provide an air superheating chamber between them, said fire pot made without lower hot product outlets, and having a lower flame inlet opening and an open front, and provided with an upper opening to a hot product outlet at the casing, said casing having atmospheric air inlets at the air superheating chamber, and a fluid fuel burner flaming into the fire pot at its lower opening, substantially as described. 6th. In a heating furnace of the character described, the combination with a casing of a fire pot therein and made smaller to provide an air superheating chamber between them, said fire pot made without lower hot product outlets and having a lower flame inlet opening and an open front and provided with indepen-

dent front and rear upper openings to a hot product outlet at the casing, said casing having at atmospheric air inlets at the air superheating chamber, and a fluid fuel burner flaming into the fire pot at its lower opening, substantially as described. 7th. In a heating furnace of the character described, the combination with a casing, of a fire pot therein and made smaller to provide a space between them, and partitions between the fire pot and casing, forming an upper hot product outlet, and providing an air superheating chamber at each side of the fire pot, said fire pot having an open front, a flame inlet and an opening to said hot product outlet, and the casing having atmospheric air inlets to the air superheating chamber, substantially as described. 8th. In a heating furnace of the character described, the combination with a casing of a fire pot therein and made smaller to provide a space between them, and partitions between the fire pot and casing, forming an upper hot product outlet and providing an air superheating chamber at each side of the fire pot, said fire pot having an open front, a flame inlet and front and rear openings communicating with the hot product outlet at the casing, and the casing having atmospheric air inlets to the air superheating chambers, substantially as described. 9th. In a heating furnace of the character described, the combination, with inner and outer casings providing a space between them, of a fire pot in the inner casing and made smaller to provide a space between them and formed with an open front, a flame inlet and a hot product outlet, partitions between the fire pot and inner casing providing an upper hot product outlet and side air superheating chambers outside the fire pot, and partitions between the two casings forming initial air superheating chambers opening at their outer parts to the atmosphere, the inner casing having air inlets at the outer parts of the inner air superheating chambers, substantially as described. 10th. In a heating furnace of the character described, the combination, with a casing, of a fire pot therein and made smaller to provide an air superheating chamber between them, said fire pot having an open front and a flame inlet, the casing provided with atmospheric air inlets to the air superheating chamber, and a Bunsen burner flaming into the fire pot, and having an outer cup casing providing an air superheating chamber around its mixing tube, and communicating only with the air superheating chamber of the furnace casing, substantially as described. 11th. In a heating furnace of the character described, the combination, with a casing, of a fire pot therein and made smaller to provide a space between them, partitions between the fire pot and casing forming an upper hot product outlet, and providing an air superheating chamber at each side of the fire pot, said fire pot having an open front, a flame inlet and front and rear openings to said hot product outlet, the casing having atmospheric air inlets to the air superheating chambers, and a Bunsen burner flaming into the fire pot, and having an outer cup casing providing an air superheating chamber around its mixing tube, and communicating only with the air superheating chamber of the furnace casing, substantially as described. 12th. In a heating furnace of the character described, the combination, with inner and outer casings providing a space between them, of a fire pot in the inner casing and made smaller to provide a space between them and formed with an open front, a flame inlet and a hot product outlet, partitions between the fire pot and inner casing providing an upper hot product outlet and side air superheating chambers outside the fire pot, partitions between the two casings forming initial air superheating chambers opening at their outer parts to the atmosphere, the inner casing having air inlets at the outer parts of the inner air superheating chambers, and a Bunsen burner flaming into the fire pot, and having an outer cup casing providing an air superheating chamber around its mixing tube, and communicating only with the main air superheating chamber of the furnace casing, substantially as described. 13th. In a heating furnace of the character described, the combination, with a casing, of a fire clay fire pot therein, and made smaller and provided with lengthwise ribs or flanges g, g, and an upper outlet g^1, opening to a hot product outlet formed between the casing and the fire pot and its flanges, substantially as described. 14th. In a heating furnace of the character described, the combination, with a casing, of a fire clay fire pot therein, and made smaller and provided with lengthwise ribs or flanges g, g, an upper rear outlet g^1, and a front outlet g^2, both opening to a hot product outlet formed between the casing and the fire pot and its flanges, substantially as described. 15th. In a heating furnace of the character described, the combination, with a base plate and a casing D thereon, of a fire pot in the casing and made smaller and composed of two refractory parts F G, the part F having bottom and side lugs $f f^1$, upper side rabbets $f^2 f^2$, a flame aperture f^3, and a rear wall f^4, and the part G having top lengthwise ribs or flanges $g g$, and hot product outlets $g^1 g^2$, said casing D having atmospheric air inlets d, and providing between it and the fire pot two side air superheating chambers d^1, and an upper hot product outlet d, substantially as described. 16th. In a heating furnace of the character described, the combination, with a base plate and a casing D thereon, of a fire pot in the casing and made smaller and composed of two refractory parts F G, the part F having bottom and side lugs $f f^1$, upper side rabbets $f^2 f^2$, a flame aperture f^3, and a rear wall f^4, and the part G having top lengthwise ribs or flanges $g g$, and hot product outlets $g^1 g^2$, said casing D having atmospheric air inlets d, and providing between it and the fire pot two side air superheating chambers d^1, and an upper hot product outlet d^2, and an outer casing E, and partitions $e^3 e^3$ between the casings D E, and providing open bottomed initial air superheating chambers $e^1 e^1$, communicating by the inlets d with the inner air superheating chambers d^1, substantially as described. 17th. In a heating furnace of the character described, the combination, with an outer casing and a smaller fire pot therein, providing an air superheating chamber between them, of a cup casing a^3 opening to said air superheating chamber, and a burner comprising an inner mixing tube h apertured at h^1, and a cup casing h^2 surrounding the tube and opening to the casing a^3, said mixing tube being extended to flame into the fire pot, substantially as described. 18th. In a heating furnace of the character described, the combination, with the base plate, a casing thereon, and a fire pot in the casing and having a bottom flame inlet and made smaller to provide an air superheating chamber d^1 between it and the casing and above the base plate, said base plate provided with a bottom opening a^2, and a cup casing a^3 thereat opening to the chamber d^1, of a burner comprising an inner mixing tube h apertured at h^1, and surrounded by a cup casing h^2 fitted to the lower casing a^3, a coupling K held to the outer end of the burner tube h, a pipe L connected to the coupling and facing the flame opening of the fire pot, and a plug k passed through the bottom of the lower casing a^3 into the coupling K, substantially as described, for the purpose set forth.

No. 42,718. Centrifugal Machine.

(*Machine centrifuge.*)

Rudolph Folsche, of Halle on the Seale, Kingdom of Prussia, German Empire, 22nd April, 1893; 6 years.

Claim.—In a centrifugal machine, the combination, with the outer drum, of the inner drum of perforated material, the annular disc 7, secured to the top of the inner drum, the annular disc 5 provided with openings at its edge, and secured in the upper part of the outer drum, the bent pipe, communicating with the space below the disc 7, and the bent pipe communicating with the space above the disc 5, substantially as and for the purpose set forth.

No. 42,719. Boiler. (*Chaudière.*)

Charles E. Marston, Dover, New Hampshire, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In a steam boiler, the combination, with a dome having a disc-shaped bottom and a hollow base, of a series of vertical tubes arranged to form a combination chamber, with three sides of each tube presented to the combustion chamber, and tubes provided with inwardly curved branch pipes, the top end of said pipes to discharge back into the vertical tubes above the water line in said tubes, and short pipes connecting the tubes with the dome, projection into the dome and above the bottom thereof, substantially as shown and described. 2nd. In a boiler, the combination, with a dome, having a disc-shaped bottom, of a chamber below the dome, a pipe connecting the chamber and dome, said pipe projecting into the dome above the bottom thereof, a second chamber below the first named chamber and communicating with the water supply, and vertical pipes connnecting the two chambers, substantially as described. 3rd. In a boiler, the combination of a dome having a disc-shaped bottom, a ring-shaped base, vertical tubes communicating with the base and dome, and provided with inwardly curved branch pipes, a chamber below the dome and communicating therewith, a second chamber communicating with the water supply, and vertical tubes connecting the two chambers, substantially as herein shown and described. 4th. In a steam boiler, the combination of a dome having a disc-shaped bottom, vertical tubes provided with curved branch pipes and arranged to form a combustion chamber, a series of pipes leading from the tubes into the dome, with their ends projecting above the bottom thereof, a chamber below the dome and provided with an upwardly extending pipe, a short pipe secured to the centre of the bottom of the steam dome, and in communication with the pipe of the said chamber, a second chamber below the first named chamber, and pipes connecting the two chambers, the vertical tubes and the lower chamber being connected with the water supply, substantially as described. 5th. In a steam boiler, having a series of vertical tubes arranged to form a combustion chamber, and provided with inwardly curved branch pipes, the top end of said pipes entering said tubes above the true water line, and the carrying of a surplus water line, or thin sheet of water on the bottom of the disc-shaped dome, with the dry superheating surfaces of said pipes and tubes, between said water lines, substantially as described.

No. 42,720. Rotary Fan for Ventilators.

(*Eventail rotatoire pour ventilateurs.*)

Leslie J. Davidson, Bobcaygeon, Ontario, Canada, 22nd April, 1893; 6 years.

Claim.—1st. In a rotary fan, the combination of the shaft, a fan mounted on one end of said shaft, a pinion on the other end of said shaft, a chain gear arranged to rotate the said pinion and shaft, and mechanism for setting in motion said chain gear, substantially as described. 2nd. In a rotary fan, the combination of a shaft, a fan mounted on one end of said shaft, said fan comprised of a hub and four radial arms having inclined faces arranged at an angle to the vertical axis of the said hub, a pinion mounted on the other end of said shaft a gear wheel meshing with said pinion, a spindle on which said gear is mounted, a pinion mounted on said spindle, a gear wheel meshing with said spindle, a spindle on which the second gear wheel

is mounted, a pinion mounted on said second spindle, a driving gear wheel meshing with said second pinion, a spindle on which is mounted said driving gear wheel, and a coiled spring to rotate the last mentioned spindle and driving gear wheel, substantially as and for the purpose described. 3rd. In a rotary fan the combination of a shaft, a fan 18, mounted on one end of said shaft, said fan comprised of a hub 18a and four radial arms 18b having their faces inclined and arranged at an angle to the verticle axis of the hub, a pinion 16 mounted on the other end of said shaft, a gear wheel 15 meshing with the said pinion 16, a spindle 14 on which is mounted the gear wheel 15, a pinion 13 mounted on the spindle 14, a gear wheel 12 meshing with the pinion 13, a spindle 10 on which is mounted the gear wheel 12, a pinion 9 mounted on the spindle 10, a driving gear 5 meshing with the pinion 9, a spindle 3 on which is loosely mounted the driving gear 5, a ratchet wheel 6 rigidly mounted on the spindle 3, a spring operated dog 7 pivoted to the side face of the driving gear 5 and meshing with the teeth of the ratchet wheel 6, and a coiled spring 4 wound on the spindle 3 and adapted to rotate the said spindle and driving gear 5 to operate the device, substantially as and for the purpose set forth.

No. 42,721. Drawing Die. (*Etampe.*)

Edwin Norton, Maywood, and Oliver W. Norton, Chicago, both of Illinois, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The combination, with a punch, of a female drawing die, and an annular drawing die having an outer periphery or face operating as a male die in conjunction with said female die, and an inner periphery or face operating as a female die in conjunction with said punch, whereby the metal is drawn first in one direction and then in the opposite, the shape first produced being turned inside out by the second operation, substantially as specified. 2nd. The compound die for first drawing a shape and then turning it inside out, and thus producing a deeper shape of smaller diameter, consisting of a hollow die block C, an annular die D, adapted to reciprocate within the cavity of said hollow die C, and a punch E, adapted to reciprocate within said annular die D, said hollow die block C, operating in conjunction with the outer periphery or face of said annular die D, to first draw the shape, and said punch E operating in conjunction with the inner periphery or face of said annular die to turn the shape inside out and thus produce a smaller and deeper shape, substantially as specified. 3rd. The combination, with a cutting die B, of the hollow die block C, having a cutting edge or die *c*, annular die D, and a punch or male die E, substantially as specified. 4th. The combination, with a cutting die B, of a hollow die block C, having a cutting edge or die *c*, annular D, punch or male die E, and a follower or blank smoother F, substantially as specified. 5th. The combination, with a punch and an annular die for drawing a metal shape by turning it inside out, of a sleeve surrounding said annular die to aid in supporting, guiding, and smoothing the peripheral wall of the shape to be drawn and reversed or turned inside out, substantially as specified. 6th. The combination with a punch or male die, and an anular die for drawing a metal shape by turning it inside out, of a pusher ring or device surrounding said annular die and engaging the end or edge of the metal shape to be drawn to facilitate the drawing operation, substantially as specified. 7th. The combination with a punch or male die, and an annular die for drawing a metal shape by turning it inside out, of a pusher ring or device surrounding said annular die, and engaging the end or edge of the metal shape to be drawn to facilitate the drawing operation, and a sleeve or guide surrounding said annular die for supporting the peripheral wall of the shape to be drawn, substantially as specified.

No. 42,722. Saddle for Cycle Vehicles.

(*Selle pour bicycles, etc.*)

Charles W. Saladee, Freeport, Illinois, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In a saddle for cycle vehicles, the spring support comprising a rear spring, a front spring having its rear end extended downward and rearward from the front terminal of said rear spring, a reinforcement fitted directly against the rear part of the front spring and forming therewith the carrying arm of the spring support, and a post clamp in which the carrying arm is secured, substantially as and for the purpose described. 2nd. In a saddle for cycle vehicles, the spring support comprising the front spring, the reinforcement fitted against the rear end of the front spring and forming therewith a stiff carrying arm, and a rear spring having its front end confined by a clip on the front spring at a point in front of the carrying arm, substantially as and for the purpose described. 3rd. In a saddle for cycle vehicles, the combination, with a seat and a post clamp, of the front spring having its rear end stiffened by the reinforcement which is united thereto and forms with the same the stiff carrying arm that is fitted in the clamp, the rear spring connected to the cantle of the seat and bearing on the reinforcement in front of the carrying arm, and the clip which adjustably secures the front end of the rear spring to the reinforcement and front spring, substantially as described. 4th. The combination, with a rear spring, the front spring having its rear end extended downward and in rear of the front part of said rear spring, and a clip for confining said springs together, of the reinforcement fitted upon the extended rear part of the front spring and having its forward end extended through said clip, and upon the upturned end of the front spring, substantially as and for the purpose described. 5th. The combination, with a front spring having the extended rear end, and the reinforcement fitted on and united to the rear part of said front spring to form the stiff carrying arm, of a rear spring confined, at its front end, on the reinforcement and front spring by a clip and extended rearward from said clip in close juxtaposition to the reinforcement, which serves to automatically stiffen the rear spring when it is depressed, as and for the purpose described. 6th. The combination, with a seat and a post clamp, of the rear spring connected to the cantle, the front spring connected to the pommel, the reinforcement applied directly upon the rear part of the front spring, and having its front end extended to the upturned end of the front spring, and a clip which holds the front end of the rear spring and the reinforcement on the middle of the front spring and said reinforcement being arranged relatively to the front and rear springs to serve as the bearings therefor when the springs are put under tension by the load on the seat, said bearings for the springs being situated above and in advance of the post clamp, substantially as and for the purpose described.

No. 42,723. Car Coupler. (*Attelage de chars.*)

Truman H. Gilbert, Buffalo, New York, U. S. A., 22nd April, 1893; 6 years.

Claim.—In a car coupling, the combination, with the pawl 7, and its operating mechanism, substantially as above specified, of an unlocking arm 14, having the inclined side 16, and the locking pawl 7, provided with an inclined side 10, for the purposes described.

No. 42,724. Car Coupler. (*Attelage de chars.*)

Eugene D. Whipple, Creston, Iowa, U. S. A., 22nd April, 1893; 6 years.

Claim.—1st. In a car coupling of the class described, the combination, with a vertically hinged knuckle normally tending to assume an open position, of an impact arm secured to and extending rearwardly from said knuckle within a cavity in the drawhead to a point approximately at the centre line of the drawhead, a gravity locking block engaging the end of the impact arm to lock the knuckle, and a pivoted trigger manually actuated to disengage the locking block from the end of the impact arm. 2nd. In a car coupling of the class described, the combination, with a vertically hinged knuckle normally tending to assume an open position, of an impact arm secured to the said knuckle extending rearwardly within a cavity in the drawhead to a point approximately at the centre line of the said drawhead, a removable and replaceable hanger held within the drawhead, a locking block hinged to the hanger adapted to engage the end of the impact arm, and a manually actuated gravity trigger adapted to disengage the locking block from the impact arm. 3rd. In a car coupling, the combination, with a vertically mounted knuckle acted upon by yielding pressure devices to normally tend to assume an engaging position, of an impact arm secured to and extending from said knuckle within a cavity in the interior of the drawhead to a point approximately at the centre of the drawhead, a hanger extending from the exterior of the drawhead to the interior thereof, and removably secured thereto in position, a locking block hinged to said hanger and adapted to engage and hold the impact arm, and a gravity trigger adapted to be manually actuated to withdraw and withhold the locking block. 4th. In a car coupling, the combination, with a vertically hinged knuckle, of an impact arm secured to and extending from said knuckle, within a cavity of the drawhead to a point approximately at the centre of said head, a locking block hinged to the drawhead and depending vertically within said cavity, the end of said arm bearing against the side of the block to lock the knuckle, and a manually operated gravity trigger, adapted to withdraw the locking block from engagement with the end of the impact arm. 5th. In a car coupler, the combination, with a vertically hinged knuckle normally caused to tend to assume an open position, of an impact arm secured to and extending from said knuckle to a point approximately at the centre of the drawhead, a hanger removable secured in the drawhead, a locking block hinged to said hanger, the impact end of said arm bearing against the side face of said locking block, and a manually operated gravity trigger adapted to withdraw the locking block from engagement with the compact arm. 6th. In a car coupler, the combination, with a vertically hinged knuckle acted upon by yielding pressure devices to normally tend to assume an open position, and a rearwardly extended impact arm, of a hanger removably depending within a cavity in the draw head, approximately at the centre thereof, a locking block detachably secured to said hanger and adapted to describe an upward arc, the end of said arm engaging the side face of the locking block to block the knuckle, together with a gravity trigger pivoted to the draw head and manually operated by a system of levers from the sides or top of the car to impact against and withdraw the locking block from engagement with the impact arm. 7th. In a car coupling, the combination with a knuckle vertically hinged, and having a rearwardly extending impact arm, of a locking block hinged within the drawhead approximately at the centre thereof, and adapted to engage the end of the impact arm, a gravity trigger also hinged within the draw head, and a lifting finger operated by a system of levers to rotate the gravity trigger, which latter impinges against

and withdraws the locking block from engagement with the impact arm, the arc described by the lifting finger being concentric with the arc of the gravity trigger. 8th. In a car coupling, the combination with a vertically hinged knuckle from which extends rearwardly to a point approximately at the centre of the drawhead and impact arm, of a locking block vertically hinged within the drawhead approximately at the centre thereof and adapted to engage the end of the impact arm, a gravity trigger manually operated to withdraw the locking block from engagement with the end of the impact arm, a transverse bar constituting the pivot for said gravity trigger and also for a bent lever operated by a system of levers from the side or top of the car, and a lifting finger adapted to impinge against and cause the gravity trigger to describe an upward arc. 9th. In a car coupling, the combination, with a vertically hinged knuckle, having a rearwardly extending impact arm, of centrally located locking devices comprising a removable hanger extending through an aperture in the upper face of the drawhead, said hanger being removably secured by means of a key, a locking block detachably hinged to said hanger and adapted to engage the end of the impact arm when in its normal vertical position, together with a gravity trigger manually operated to impinge against and withdraw the locking block from engagement with the end of the impact arm. 10th. In a car coupling, the combination with a vertically hinged knuckle, having a rearwardly extending impact arm, a hanger extended through a centrally located aperture in the drawhead, a locking block hinged to said hanger against one side of which block the end of the impact arm bears when the knuckle is locked, the said block being so positioned as that the side thereof opposite to that against which the impact arm bears rests against the side of the draw head. 11th. In a car coupling, a system of operating levers for actuating the engaging mechanism within this drawhead, comprising a transverse bar movably held at independent points on the end of the car, adapted to be manually raised from either side or top of the car upon alternate fulcrums, together with a connecting rod between said transverse bar and the locking devices of the drawhead. 12th. In a car coupling, a system of levers for actuating the locking devices of the drawhead, consisting of a transverse bar held by a plurality of clips on the end of the car, said bar being vertically raised by the train or yardman from either side or top of the car, and a connecting rod secured at its upper end to the transverse bar between the two independent fulcrums thereof, and at its lower end to the locking devices in the drawhead.

No. 42,725. Wagon Scales.

(*Balance de pesage pour wagons.*)

Linus G. Clawson, Edward G. Wheeler and George T. Ware, all of Pleasant Hill, Missouri, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. A frame for platform scales, comprising opposite parallel pairs of side and end pieces overlapping at their ends and securely clamped and spaced from each other at such points, substantially as set forth. 2nd. A frame for platform scales, comprising opposite parallel pairs of side and end pieces overlapping at their ends, open work clamped between said side and end pieces and trussing the same, and corner pieces receiving the overlapping ends of the frame pieces, substantially as set forth. 3rd. A frame for platform scales, comprising opposite parallel pairs of side and end pieces overlapping at their ends, open work clamped between said side and end pieces and trussing the same, corner pieces or castings receiving the overlapping ends of the frame pieces, and corner braces connected to the lower side and end pieces at each corner of the frame, substantially as set forth. 4th. A frame for platfom scales, comprising opposite parallel bars of side and end pieces overlapping at their ends and spaced from each other, corner pieces having upper and lower flanged seats receiving the overlapping ends of said end and side pieces, clamping bolts clamping said overlapping ends in said seats, and corner braces connected to the lower side and end pieces at each end of the frame, substantially as set forth. 5th. In a portable wagon scale, the combination, with the frame, of the wheel carrying plates removably connected to the sides and one end of said frame, substantially as set forth. 6th. In a portable wagon scale, the combination, with the frame, composed of opposite side and end pieces arranged in pairs, of the supporting plates having parallel securing arms fitting over the upper and lower side pieces and stub axles or spindles, and securing pins or bolts passing through said arms and side frame pieces, substantially as set forth. 7th. In a portable wagon scale, the combination, with the frame of the opposite wheel carrying plates removably connected to opposite sides of the frame near one end thereof, a caster wheel plate having parallel securing arms removably engaging the front end of said frame, a vertical shaft swivelled in said plate and terminating at its lower end in a caster wheel yoke, and the hound frame connected to and embracing said yoke, substantially as set forth. 8th. In a platform scale, the combination, with the frame, composed of the opposite end and side frame pieces arranged in pairs, of the bearing hangers mounted between the end frame pieces and provided with outwardly extending inclined lugs, weighing devices supported in said hangers, and the aprons hinged to the opposite ends of the frame and having their inner edges adapted to rest upon said inclined lugs, substantially as set forth. 9th. In a platform scale, the combination with the frame, of the hangers mounted within the opposite end frame pieces near each corner and provided with the inwardly extending inclined lugs, horizontal scale levers resting at their outer ends in said hooks, and the aprons hinged to the opposite ends of the frame and having their inner edges adapted to rest upon said inclined lugs, substantially as set forth. 10th. The combination of the independent converging scale levers, lever arms connecting the opposite pairs of levers and having pointed bearing studs, a central supporting lever comprising opposite members connected centrally by the opposite bowed or curved connecting plates forming a slot or opening there between, the upper of said bowed plates having a pointed bearing lug or stud, a supporting plate resting upon said stud and having depending bolts passing from each end thereof through the upper connecting plate into the opening thereunder, parallel and spaced plates secured to said bolts within the opening or slot and each provided with bearing recesses to receive the pointed bearing studs on said lever arms, substantially as set forth. 11th. The combination with the scale levers, of the opposite parallel platform carrying side beams, depending hangers secured to the opposite ends of said side beams and supported over said scale levers, depending feet secured to and extending below said side beams, and sectional and adjustable truss rods connected to the opposite hangers and passing under said feet below the beams, substantially as set forth. 12th. The combination with the scale levers, of the opposite parallel platform carrying side beams, depending hangers secured to the opposite ends of said side beams and supported over said scale levers near each end thereof, the pending feet secured to and extending below said side beams, sectional truss rods connected to the opposite hangers and passing under said feet, and turn buckles adjustably connecting the ends of said rods below said beams, substantially as set forth. 13th. In a scale the combination with the independent scale, levers, of the central slotted cross lever supporting the inner ends of said scale levers and provided at one end with a depending pointed bearing lug or stud, the scale beam, and a connecting loop connected to said scale beams and receiving said pointed stud to form a bearing therefor, substantially as set forth. 14th. In a scale, the combination with the scale levers, of the cross lever pivoted at one end and provided at its opposite free end with a depending pointed bearing stud, the scale beam, a connecting loop connected to said scale beam, parallel plates near the lower end of said loop, the lower of said plates being provided with a bearing recess receiving the bearing stud of said lever, and a set screw passing through the upper plate and working over the free end of said lever, substantially as set forth. 15th. The combination with the frame composed of the opposite end and side pieces and weighing devices within said frame, of the off standing bracket arms having lower bifurcated ends secured to the rear side frame pieces, and the scale beem casing mounted upon said arms off from said frame, substantially as set fort. 16th. The combination with the scale beam casing, open at one side, of the lugs secured to the bottom of said casing, the door enclosing said side opening, and the straps secured to said door and pivoted to the outer ends of said lugs, said straps being provided with extended rest portions extending beyond the point of pivot to engage under the casing when the door is in a horizontal position, substantially as set forth. 17th. In a portable wagon scale, the combination of the frame, a platform and weighing devices located within said frame, a plate secured to one end of the same and having vertically perforated lugs or securing arms, the shaft journalled in said lugs and having at its lower end a frame, the caster wheel journalled in said frame, a tongue having hounds adapted to engage the laterally extending lugs of the caster wheel frame, aprons hinged at the ends of the frame, and inclined lugs or brackets upon the end sills of the frame to form a seat and rest for said aprons, substantially as set forth. 18th. The combination of the frame, the hangers mounted upon the end sills of said frame and having inwardly extending parallel hooks, separate converging scale levers having opposite knife edge pivots at their ends, said pivots resting upon the hooks of each hanger, between which the ends of said scale levers work, swinging knife edge stirrups suspended from said scale levers in rear of their supported ends, the platform side beams having depending hangers straddling said scale levers and supported upon said stirrups, the horizontally alotted lever pivoted at one side of the frame and connected with the scale beam, and the arms at the converging or meeting ends of said scale levers and supported by said slotted lever, substantially as set forth. 19th. The combination of the independent converging scale levers, the slotted supporting lever having the sharp pointed stud on its upper side, a plate resting upon said stud and having depending bolts supporting a pair of parallel plates that extend transversely through the slot of the supporting lever, and the arms at the converging ends of each opposite pair of scale levers having sharp pointed studs, each independently bearing upon one of the said transverse supporting plates, substantially as set forth. 20th. The combination, with the platform having the side beams, of the hangers depending therefrom and receiving the ends of said side beams, and the truss rods held below the beams and connected to the end hangers, substantially as set forth. 21st. The platform composed of the side beams, the end pieces connecting the same the detachable top sections having the laterally extending arms or brackets projecting toward each other to form a seat under each end piece, and the centre piece secured detachably upon the side beams, and said arms or brackets forming a seat, substantially as set forth.

No. 42,726. Weight Attachment for Bicycles.

(*Poids pour roues de bicycles.*)

Robert Kroncke and Edward Schonheyder, both of Chicago, Illinois, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The combination in a bicycle or the like, of a counterbalance rigidly secured to one or all of the wheels thereof, substantially as set forth. 2nd. In a bicycle or the like, the combination with the wheel or wheels, of a weight or counterbalance rigidly secured to the inner side of the rim, substantially as set forth. 3rd. A bicycle or the like having a weight or counterbalance rigidly secured to one or more of its wheels, and located between the rim and centre of axis, substantially as set forth. 4th. The combination in a bicycle or the like, of a counterbalance, triangular in shape and rigidly secured to the hub of the wheel or wheels, and gradually enlarging from the point of attachment outwardly, substantially as set forth.

No. 42,727. Electrically Heated Smoothing Iron.

(*Chauffage électrique pour fer à repasser.*)

The Buttterfield-Mitchell Electric Heating Company, Boston, assignees of Willis Mitchell, Malden, both of Massachusetts, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In an electrically heated smoothing device, a body of magnetic metal affording the heating and smoothing surface, and provided with magnetic studs or cores, in combination with wire coiled about said studs and forming part of an electric circuit. 2nd. In an electrically heated smoothing device, a magnetic metal body affording the smoothing surface, and having studs integral therewith, in combination with metallic conductors surrounding the said studs, substantially as and for the purpose set forth. 3rd. A hollow smoothing iron having studs G and H raised from its bottom, in combination with a handle which is fastened by screws to studs G, and electric heating devices surrounding studs H, substantially as set forth. 4th. A hollow smoothing iron, consisting of a top plate, a bottom plate or body, and side walls entirely of asbestus and provided with a handle and internal electric heating devices, substantially as set forth. 5th. An electric smoothing iron provided with a handle, the frame of which consists of two parts forming between them a guide passage for the wires to the hollow body of the iron, substantially as set forth. 6th. In an electrically heated smoothing device, a plate or body provided with studs or posts, in combination with electric conducting material surrounding the said posts or cores, and bridges fastened to the said posts for holding the said conducting material in its place, substantially as set forth. 7th. In an electrically heated smoothing device, a magnetic plate having studs formed thereon to serve as cores for wire wound in coils or helices, substantially as set forth.

No. 42,728. Rotary Hook for Sewing Machines.

(*Crochet rotatif pour machines à coudre.*)

Harry Moore, Wellingborough, Northampton, England, 22nd April, 1893; 6 years.

Claim.—1st. In a sewing machine the slotted bearing pieces C D, held by clamping screws F, and controlled by set screws G, substantially as and for the purposes described. 2nd. In a sewing machine, a rotary hook carried in a race having loosely suspended within the rotary hook a spherical spool to contain the underthread wound in the form of a ball or upon a reel to be loosely enclosed in the spherical spool, substantially as described.

No. 42,729. Pipe. (*Tuyau.*)

Thomas Anderson, Watertown, Massachusetts, U.S.A., 22nd April, 1893; 6 years.

Claim.—In a sanitary pipe of the character described, a hollow pipe bowl formed to afford an absorbent receptacle, in combination with a cylindrical lining fitting snugly against the inner walls of the pipe bowl and resting on the outer upper edge of the shoulder in the bowl and having a bottom concave on its under side secured to the lining and provided with perforations about its centre only, constituting a lining which has an acute angled imperforate recess at its lower outer edges, the apex of the acute angle at the bottom of the lining's edge excluding all moisture from the edges of the pipe, the said bottom having a raised central portion above and away from the absorbent in the bottom, and the ledge in the pipe bowl projecting between the concave bottom of the lining and the acute angled edge of the lining whereby it separates them and the absorbent in the bowl, as and for the purposes described.

No. 42,730. Sulky Plow. (*Charrue à siège.*)

The J. T. Case Plow Works, assignees of William Sobey, both of Racine, Wisconsin, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In a sulky plow, the combination, with a main frame, the front and rear furrow wheels and the land wheel for supporting said frame, of a plow beam, crank or link mechanism for connecting the front and rear portions of said plow beam with the sustaining frame, a single operating lever for shifting said crank or link mechanism, a crank axle for the land wheel suitably connected with the operating lever, whereby the said lever will serve to effect the movement of both the crank or link mechanism, and of the land wheel with respect to the main frame, substantially as described. 2nd. In a sulky plow, the combination, with the main frame and with the front and rear furrow wheels and the land wheel, for supporting said frame, of a plow beam, the front and rear cranks or links connecting said plow beam with the sustaining frame, a single operating lever for shifting said cranks or links, a connecting rod for securing the movement in unison of said cranks or links, and a crank axle for the land wheel suitably connected with the operating lever, whereby the said lever will serve to effect the movement both of the cranks or links, and of the land wheel with respect to the main frame, substantially as described. 3rd. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said sustaining frame, of differential mechanism for connecting the plow beam with the sustaining frame, and for raising and lowering the front and rear portions of the plow beam to different extents to impart differential movements to the point and heel of the plow, substantially as described. 4th. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said sustaining frame, of differential mechanism connecting the plow beam with the sustaining frame, said differential mechanism comprising cranks extending between the plow beam and the sustaining frame, and arranged to impart differential movement to the front and rear supports of the plow beam, whereby the point of the plow may be caused to travel faster than its heel, substantially as described. 5th. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said carrying frame, of differential crank mechanism connecting the plow beam with sustaining frame, and a single lever for operating said crank mechanism whereby the front and rear supports of the plow beam may be raised and lowered to different extents to cause the plow point to travel faster than its heel, substantially as described. 6th. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said sustaining frame, of differential mechanism, for raising and lowering the plow beam, said differential mechanism comprising two cranks or links of different lengths serving to connect different points of the plow beam with different points of the supporting frame, and whereby the front and rear portions of the plow beam may be raised and lowered to different extents, substantially as described. 7th. In a sulky plow, the combination of a sustaining frame, and three carrying wheels for said frame and a plow beam supported by said sustaining frame, of differential mechanism for raising and lowering the plow beam, said differential mechanism comprising two cranks or links connecting the plow beam, and sustaining frame, said cranks or links being set at different angles, whereby a differential movement is imparted to the front and rear portions of the plow beam, substantially as described. 8th. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said sustaining frame, of differential mechanism for raising and lowering the plow beam, said mechanism for raising and lowering the plow beam, said mechanism comprising two differentially operating cranks, one of said cranks affording a loose connection (as, for example, by a stud and slot) between the plow beam and the supporting frame, substantially as described. 9th. In a sulky plow, the combination of a sustaining frame, and three carrying wheels, and a plow beam supported by said sustaining frame, of cranks or links for sustaining said plow beam, said cranks or links being set at different angles and being of different lengths, whereby a differential movement will be imparted to the front and rear portions of the plow beams, substantially as described. 10th. A sulky plow comprising a sustaining frame and wheels, a plow beam supported thereby, a long crank F connected with the front portion of the plow beam, a shorter crank M connected with the rear portion of the plow beam, said shorter crank having its end provided with a slot m^1 and an operating lever suitably connected with the front and rear cranks, substantially as described. 11th. In a sulky plow, the combination of a sustaining frame, and three carrying wheels, and a plow beam supported by said sustaining frame, of a differential mechanism for raising and lowering said plow beam, said mechanism comprising a long crank F, connected with the front portion of the plow beam, a shorter crank M, connected with the rear portion of the plow beam, and a single operating lever suitably connected with the front and rear cranks, substantially as described. 12th. In a sulky plow, the combination of a sustaining frame and three carrying wheels for said frame, and a plow beam supported by said carrying frame, of differential mechanism connecting the plow beam with the sustaining frame, said mechanism comprising two differentially operating cranks or links, a connection between said cranks or links, and a single lever for operating said cranks or links to raise and lower the plow, substantially as described. 13th. In a sulky plow, the combination of a sustaining frame and three carrying wheels, for said frame, and a plow beam supported by said carrying wheels, of differentially operating crank mechanism for connecting said plow beam with the sustaining frame, a single operating lever and a connecting rod for conjointly operating said cranks, substantially as described. 14th. In a sulky plow, the combination of a sustaining frame, and carrying wheels for said frame, and a plow beam supported by said sustaining frame, of a differential mechanism for raising and lowering said plow beam comprising the cranks F and

M, a single operating lever O, and a connecting rod N uniting said crank M with said lever O, substantially as described.

No. 42,731. Electric Regulator.

(*Régulateur électrique.*)

The Electric Secret Service Company, New York, assignees of Henry E. Vineing, Roseville, New Jersey, both in the U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The described method of regulating the current supply within specified limits, at will, which consists in maintaining the magnetic effect of the regulator, constant for amounts of current within the limits named. 2nd. The described method of maintaining a current supply to translating devices constant within limits for which the devices are adapted to work effectually, consisting in maintaining the magnetic effect of the regulator constant for various quantities of current within the limits named. 3rd. An electric generator, one or more electric translating devices in circuit therewith, adapted to operate effectually within specified current limits, and means for securing the current supply constant at varying points within the limits named, substantially as described. 4th. An electric generator, one or more electric translating devices in circuit therewith, adapted to work effectually within specified current limits and electro-magnetic means for securing the current supply constant at intermediate points within the limits named. 5th. A series of arc lights adapted to operate effectually for different current supply, a dynamo electric machine in circuit therewith, and an electro-magnetic regulator therefor provided with electro-magnetic means for maintaining the current supply constant at various points within the current limits, for which the lamps will operate effectually. 6th. One or more electric translating devices adapted to operate effectually between specified current limits, a dynamo electric machine in circuit therewith, and an electro-magnetic regulator, provided with sectional coils and means for throwing more or less of the coils into and out of circuit, whereby the current supply may be maintained at a fixed quantity within the limits specified, substantially as described. 7th. Two or more electric lamps located in series with a dynamo electric machine, and adapted to work effectually between specified current limits, a current regulator for regulating the supply of current to the lamps, and a wall controller or supplemental regulator, provided with sectional coils and means for varying the number of such coils in circuit, substantially as described.

No. 42,732. Root Cutter and Cider Mill.

(*Coupe-racine et moulin à cidre.*)

John Hutchcroft, of the Township of Edwardsburg, and John D. Mills, Prescott, both in Ontario, Canada, 22nd April, 1893; 6 years.

Claim.—In a mill, for the purposes set forth, grinders L, having on their outer sides studs or spikes for grating purposes, and knives connecting said grinders, for cutting vegetables, substantially as and for the purpose hereinbefore set forth. 2nd. In a combination mill, for the purposes set forth, a frame carrying a main shaft F, having a balance wheel K, at one end, a small gear or pinion wheel H, at the other end, into which mashes a drive wheel I, driven by an ordinary hand crank, in combination with grinders L, made fast on said main shaft F, and hopper P, substantially as described. 3rd. In a combination cider and root cutter mill, a slanting board U, bucket in which to hold the apple pulp, a cover for said bucket, screw J, and nut V, placed in one of the top cross girts, substantially as and for the purposes hereinbefore set forth.

No. 42,733. Overshoe. (*Souliers pardessus.*)

John Guinane, Toronto, Ontario, Canada, 22nd April, 1893; 6 years.

Claim.—1st. An overshoe comprised of a rubber and upper made in the form of a gaiter forming part of the vamp, and provided with loose vertical flaps and fastenings for same, as and for the purpose specified. 2nd. The combination with the vamp and upper forming part of the same, and the upwardly extending heel portion, of the minor loose vertical flap and the major loose vertical flap extending from the opposite side of the rubber, and designed to be brought around the heel portion below the level of the top of the same and fastened to the minor flap, as and for the purpose specified. 3rd. The combination, with the vamp A, and gaiter upper C, attached to or forming part of the same, and the upwardly extending heel portion B, internally corrugated, of the vertical flap D, having the rivet E, at the point of juncture between it and the vamp, and the vertical flap F, having the rivet G at the point of juncture of the vertical flap with the heel portion, as and for the purpose specified. 4th. The combination, with the vamp A, upper C, formed of cloth or other suitable material, heel portion B, and continuous water proof lining *a*, extending throughout the vamp and upper, of the vertical flaps D and F, connected together by suitable fastenings, as and for the purpose specified.

No. 42,734. Couch. (*Canapé, etc.*)

Robert S. Wright, Somerville, Massachusetts, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. In a couch, lounge or sofa, the body having side rails A the adjustable head section having its side bars B hinged at C, C, to the side rails A, and the drooping extensions D, D, projecting from the rails A, beneath the head section, in combination with the toothed bars F, F, secured in an inclined position on said extensions and with the bail shaped brace hinged terminally to the head section, and formed with the oblique parts G, G, and the horizontal connecting foot portion *g*, adapted to rest in the successive notches of the toothed bars, and upon the carpet to support the head section, substantially as set forth.

No. 42,735. Bevel Square. (*Fausse-équerre.*)

George R. Richardson, Latrobe, California, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. A bevel square, having a two part arm or blade, substantially as set forth. 2nd. A bevel square, having a two part arm or blade, one of which parts is pivoted and the other free to slide thereon, substantially as set forth. 3rd. A bevel square, having a two part arm or blade, one of which parts is V-shape in cross section, and the other is provided with a corresponding groove or recess, substantially as set forth. 4th. The herein described improved bevel square, comprising the semi-circular frame having corresponding sides with an intervening space, a scale of graduation being on one of said sides, and the arm of blade pivotally mounted between said sides and having a headed stud projecting therefrom and extending over said scale, substantially as set forth. 5th. The herein described improved bevel square, comprising the semi-circular frame having corresponding sides with an intervening space, one of said sides being provided with a slot and a scale of graduation, the arm or blade between said sides, the pivot rod therefor, the thumb screw on said rod, and the headed stud projecting from said arm or blade through said slot, substantially as set forth. 6th. In the herein described improved bevel square, consisting of the frame having corresponding sides with an intervening space, one of said sides being provided with a slot and a scale, the two part arm or blade, one of said parts being extensible, the pivot rod therefor, and the headed stud projecting from one of said parts of the arm or blade through said slot, substantially as set forth.

No. 42,736. Wagon Wheel. (*Roue de wagon.*)

Carl T. Wollmann, Berlin, Prussia, 22nd April, 1893; 6 years.

Claim.—1st. A central system of spokes, arranged at the centre of nave, extending round the same in a logarithuric curve and ending at the felly, in combination, with the two side systems of spokes extending from the two outward central compartments of the nave to the felly, and back to the outside nave compartments, as described and shown. 2nd. The combination of the tubular nave, having the compartments K, L, M, formed by the metallic flanges E, E^1, with intermediate cushioning discs *e*, e^1, F, G, H, J, and interior stiffening discs, as specified, said compartments having retaining bolts R, for the three sets of spokes, and the end compartments B, C, and B^1, C^1, having cushioning discs and retaining bolts for the outward systems of spokes N, N^1, substantially as described and shown.

No. 42,737. Ink Stand. (*Encrier.*)

Liston Bliss Manley, Duluth, Minnesota, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The combination, with an attaching bracket, and a vertically and horizontally swinging arm connected at its inner end therewith, of an ink well socket pivoted to rock vertically at the outer end of the said arm, whereby the socket will retain a horizontal position when the arm is swung up or down, substantially as set forth. 2nd. The combination, with an attaching bracket, a horizontally swinging vertical segmental rack plate mounted thereon and provided with a transverse slot, and a pawl adjacent thereto, of a horizontal segmental rack entering said slot and engaged by the said pawl, and an arm pivoted to swing vertically on the vertical rack plate and having a bolt or pawl engaging the same, substantially as set forth. 3rd. In an ink stand, the combination, with a bracket and a socket adapted to receive and carry ink wells, of a ratchet having a hinge connection with the bracket, an arm pivoted to the bracket, upon which arm the well sockets are adjustably located, and a bolt mechanism carried by the arm and engaging with the ratchet, as and for the purpose specified. 4th. In an ink stand, the combination, with a bracket, of a horizontally located rack, a ratchet hinged to the bracket and having movement over the rack and a spring pawl carried by the ratchet and engaging with the rack, of an arm pivoted to the ratchet, a bolt carried by the arm and engaging with the ratchet, and a socket adapted to receive and carry ink wells, having an adjustable support upon the said arm, as and for the purpose specified. 5th. In an ink stand, the combination, with a bracket provided with receptacles having racks attached thereto, a rack horizontally secured to the bracket, and a ratchet hinged to the bracket and provided with a spring pawl engaging with the rack, of an arm pivoted to the ratchet, a spring controlled bolt carried by the arm and engaging with the teeth of the ratchet, sockets adapted to receive ink wells, having an adjustable connection with and supported upon the said arm, a rack carried by the sockets, and auxiliary sockets adapted to clamp the ink wells located within the main sockets, as and for the purpose set forth. 6th. The combination, with an attaching bracket and the swinging arm carried thereby, of

the sockets having a universal connection with the outer end of the arm, substantially as set forth. 7th. The combination, with the attaching bracket and the swinging arm carried thereby, of the universally swinging ink well sockets mounted on the outer end of the arm, and a pen rack connecting said sockets, substantially as set forth. 8th. The combination, with the bracket and the horizontally swinging segmental plate mounted thereon, of the vertically swinging arm pivoted at its inner end to the plate, a locking device mounted on the arm to engage the plate and hold the arm at any desired angle, and a swinging ink well socket carried by the outer end of the arm, substantially as set forth.

No. 42,738. Insole. (*Fausse semelle.*)

The St. Louis Wooden Insole Company, assignees of Julius Steinmeyer, all of St. Louis, Missouri, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. An insole composed of crossing layers of veneer, substantially as shown and described. 2nd. An insole composed of crossing layers of veneer, and an intermediate layer of an impervious material, substantially as set forth.

No. 42,739. Method of Setting and Holding Plate Glass for Bevelling. (*Méthode de placer et tenir le verre pour le chanfreiner.*)

Edwin Hill, Toronto, Ontario, Canada, 22nd April, 1893; 6 years.

Claim.—1st. The herein described method of producing a uniform bevel on plates of glass of unequal thicknesses consisting in supporting a plurality of plates of glass of unequal thicknesses at any desired inclination, so that the upper projecting corners of the plates are in alignment by filling the spaces between the bottom edges of the plate and the supporting bed or plate with plaster of paris allowed to set and simultaneously grinding or polishing the projecting corners of the upper edges of the several plates until the desired bevel is produced, as and for the purpose specified. 2nd. The herein described method of producing a uniform bevel on plates of glass of unequal thicknesses consisting in supporting a plurality of plates of glass of unequal thicknesses at any desired inclination, so that the upper projecting corners of the plates are in alignment by placing between the plates of glass or beneath each plate doe skins and simultaneously grinding or polishing the projecting corners of the upper edges of the several plates until the desired bevel is produced, as and for the purpose specified. 3rd. The herein described method of producing a uniform bevel on plates of glass of unequal thicknesses consisting in supporting a plurality of plates of unequal thicknesses at any desired inclination, so that the upper projecting corners of the plates are in alignment by placing between the plates of glass or beneath each plate doe skins and filling the spaces between the bottom edges of the plates and the supporting bed or plate with plaster of paris allowed to set and simultaneously grinding or polishing the projecting corners of the upper edges of the several plates until the desired bevel is produced, as and for the purpose specified. 4th. The herein described method of producing a bevel on plates of glass of unequal thicknesses consisting in placing a plurality of plates of glass horizontally so that the projecting corners of the edges of the several plates are in alignment and filling up the unequal spaces between the opposite edges of the plates and the bottom plate or bed with plaster of paris allowing the plaster to set and elevating the plates to any desired inclination and simultaneously grinding or polishing the projecting corners of the upper edges of the several plates until the desired bevel is produced, as and for the purpose specified. 5th. The herein described method of producing a bevel on plates of glass of unequal thicknesses consisting in placing a plurality of plates of glass horizontally so that the projecting corners of the edges of the several plates are in alignment and placing between the plates of glass or beneath each plate doe skins and elevating the plates to any desired inclination, then simultaneously grinding or polishing the projecting corners of the upper edges of the several plates until the desired bevel is produced, as and for the purpose specified.

No. 42,740. Auger Bit. (*Mèche de tarière.*)

Abe L. Adams, Bridgeport, Connecticut, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The combination with the recessed head and the scoring ring around the same, of the cutter knife detachably secured to said head within said recessed part, substantially as set forth. 2nd. The combination, of the head, having a recess for the leading away of the chips, the scoring ring secured around said head, the removable cutter knife within said recess, the pin adapted to slide and to be guided within the head, and the screw driven into said head against the pin, whereby the latter is forced firmly against the knife, substantially as shown and described. 3rd. In an auger bit comprising a head and a scoring ring therearound, which head is recessed for the purpose of leading away the chips, a cutter knife detachably secured within such recessed part of the head, and capable of adjustment therein, substantially as shown and set forth. 4th. In an auger bit of the character described, the combination of the head having a threaded socket at its rear, in combination with the bit shank having its inner end adapted to said socket and correspondingly threaded, substantially as set forth. 5th. The combination of the head, the scoring ring secured around said head, the cutter knife within the head, and the auxiliary cutter knife secured to the outside of said ring in close proximity to the edge thereof, substantially as set forth. 6th. In an auger bit, the combination with the head of the bit, of the circular scoring ring detachably secured around said head, substantially as set forth.

No. 42,741. Method of Making Knots for Nets.

(*Méthode de faire les nœuds de filets.*)

Robert Semmler, Siegmar, Saxony, Germany, 22nd April, 1893; 6 years.

Claim.—1st. The method of connecting the threads in net fabrics, etc., consisting in arranging and interlacing the said threads, to provide each with a loop capable of forming a separate knot, and drawing said loops taut, to establish an immovable connection comprising a knot for each thread, substantially as set forth. 2nd. A net fabric having its threads joined by two independent and interlaced knots, affording an immovable connection for each thread with the other, substantially as set forth.

No. 42,742. Cigar Attachment. (*Appareil pour cigares.*)

Thomas Guilfoyle, Collingwood, Ontario, Canada, 22nd April, 1893; 6 years.

Claim.—1st. A smoke deflector for cigars, consisting of a removable dished body detachably held on the cigar, as and for the purpose described. 2nd. A smoke deflector formed of a body portion, having an opening whereby it is adapted to be slid on to the cigar, as and for the purpose described. 3rd. A smoke deflector formed of a curved body having out-turned edges and an opening near its base, having elastic or springy walls, as and for the purpose described. 4th. A new article of manufacture, a deflector for cigars formed of a dished like body, having an opening formed with elastic side walls, as and for the purpose described.

No. 42,743. Fence Post. (*Pieu de clôture.*)

Horace A. Wartmann, Sydenham, Ontario, Canada, 24th April, 1893; 6 years.

Claim.—1st. A fence post composed of four stakes, the two stakes *b* set in line with the fence to which the longitudinal rails or their equivalent are secured, said stakes *b* standing at an angle to said rails to brace the fence longitudinally, and the two stakes *a* set at right angles to the line of the fence, and standing at an angle thereto to support said fence laterally, all crossed near the top and firmly secured together by wire, as shown and described. 2nd. A fence post comprising four stakes standing at a suitable distance apart at the bottom to form longitudinal and lateral braces and to carry the rails, the top of said stakes crossed and secured together by wire, and the bottom of said stakes connected by wire or cleats to prevent spreading, substantially as and for the purpose hereinbefore set forth. 3rd. A fence post composed of four stakes *a* and *b* wired together at the top and with or without cleats at their lower or ground ends in combination with rails or their equivalent, as and for the purpose hereinbefore set forth.

No. 42,744. Wire Coiling and Cutting Machine.

(*Machine pour lover et couper le fil de fer.*)

Elisha J. Fulghum and Lorin Roberts, both of Traverse City, Michigan, U.S.A., 24th April, 1893; 6 years.

Claim.—1st. In a machine of the class described, the combination of the frame having a die socket or recess at one end, parallel feeding shafts laterally adjustable upon said frame, feeding discs keyed to one end of said shafts, a cylindrical coil die removably fitting the die socket or recess and provided with a central bore and spiral coil groove formed in the face of the bore near one end thereof, a solid plug registering with the bores of said die and projecting beyond one end thereof, a single fastening screw passing through the frame and the die mounted in the same and impinging against the plug within said die to secure the various parts together, and knife members arranged directly opposite the projecting ends of said plug, one of said members being adapted to receive the coil, which spins and winds over the cutting edge thereof, substantially as set forth. 2nd. In a machine of the class described, the combination of the frame having a die socket or recess at one end, parallel feeding shaft journalled in said frame, feeding discs keyed to said shafts, a removable cylindrical coil die detachably secured within said socket or recess beneath said feeding wheels and provided with a central bore, a spiral coil groove formed in the face of the bore and extending from one end to an intermediate point, and a wire receiving opening passing through the body thereof and forming a continuation of said spiral groove from its intermediate or central terminus, a solid plug snugly fitting said bore and projecting beyond the die to direct the wire around said spiral groove and beyond the die, said plug being removably secured in place within said die, and means for rotating said shafts, substantially as set forth. 3rd. In a machine of the class described, the combination with the bed or frame, of the feeding wheels and means for rotating the same toward each other, a coil die, a stationary adjustable knife plate adjustably secured to said bed and provided with a knife edge or blade adapted to receive the coil which spins and winds thereover, a laterally adjustable spring pressed knife lever pivoted to said knife plate and provided with a

knife edge working over said stationary knife plate, and means for automatically operating said knife lever at regular intervals, substantially as set forth. 4th. In a machine of the class described, the combination with the frame bed, of the feeding shafts having feeding wheels and intermeshing gear wheels, a coil die, a stationary knife member located directly opposite said coil die and receiving the coiled wire, a movable spring pressed knife member pivoted to said stationary knife member and working over the same, said movable knife member having an upwardly extending stop, laterally adjustable bearing arms, a cutting shaft journalled in said arms and having a gear wheel meshing with one of said feeding shaft gear wheels and a strike arm or lug keyed to one end of said cutting shaft and adapted to engage said movable knife member stop at every revolution of the shaft, substantially as set forth.

No. 42,745. Bottle Sealing Device.

(*Appareil pour sceller les bouteilles.*)

William Painter, Baltimore, Maryland, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. The combination, substantially as hereinbefore described, of a bottle having on its head an annular engaging shoulder, a sealing disc and a metallic sealing cap which encircles the periphery of the disc, and has a flange which is bent into locking contact with said shoulder, and which also has a projected edge to afford a surface with which a bottle opener may reliably engage for detaching the cap from the bottle. 2nd. The combination with a bottle having on its head an annular locking shoulder, and below said shoulder a projecting surface, of a sealing disc, and a hard metal sealing cap having a flange which is bent into locking contact with said annular shoulder, and has a projecting lever edge for engagement by a bottle opener lever fulcrumed on the projecting surface of the bottle below said edge. 3rd. The combination, substantially as hereinbefore described, of a bottle having a head provided with an annular engaging shoulder, a sealing disc, and a hard metal sealing cap having a flange which encircles the disc and is bent into locking contact with said shoulder, and is corrugated in the bent portion in the line of said locking contact. 4th. The combination with a bottle having a head provided with an exterior annular shoulder, of a sealing disc, and a metallic sealing cap which encircles the disc and has its pendent flange corrugated substantially throughout its depth, and also having its inner corrugations bent to conform with or to the annular shoulder on the head of the bottle, substantially as described. 5th. The combination with a bottle having a head provided with an exterior annular shoulder, of a sealing disc at the mouth of the bottle, and a metallic sealing cap having a continuous or unbroken pendent flange corrugated substantially throughout its depth in lines parallel with the axis of the cap, and having a portion of the metal at each interior corrugation bent or indented to conform with the coincident surface of the annular shoulder. 6th. A bottle sealing cap composed of sheet metal, and having a continuous or unbroken integral pendent flange which is corrugated substantially throughout its depth in lines parallel with the axis of the cap, whereby said flange is caused to be resilient, diametrically and circumferentially, for enabling the cap to be applied to any one of a set of bottles having heads slightly varied in their external diameter. 7th. A bottle sealing cap composed of sheet metal, and having an integral pendent flange corrugated substantially throughout its depth in lines parallel with the axis of the cap, and at each interior corrugation bent to conform to an annular engaging shoulder upon the head of a bottle with which the cap is adapted for use. 8th. The combination with a metallic sealing cap, having a flange adapted to be bent into locking contact with a bottle head provided with annular engaging shoulder, of a linoleum disc having on its inner surface a coating or layer of gutta percha for strengthening the disc and preventing its adhesion to the lip or mouth of a bottle. 9th. The combination with a bottle having a head provided with an exterior annular shoulder, of a sealing disc at the mouth of the bottle, and a metallic sealing cap having a continuous or unbroken flange bent or indented circumferentially to conform with the coincident surface of the annular shoulder and having a projecting lower edge, as set forth.

No. 42,746. Bottle Sealing Device.

(*Appareil pour sceller les bouteilles.*)

William Painter, Baltimore, Maryland, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. A bottle sealing cap, substantially as hereinbefore described, containing a sealing disc and composed of sheet metal, having an integral pendant flange adapted to be secured upon the head of a bottle by bending portions of the flange into locking contact with an engaging shoulder on said head and provided with an integral loop at its top for facilitating the removal of the cap from a bottle, said disc protecting the lip of the bottle from fracture while prying off the cap. 2nd. A bottle sealing cap, composed of sheet metal, having a continuous integral pendent flange corrugated substantially throughout its depth in lines parallel with the axis of the cap and provided with a loop for enabling the cap to be readily wrenched from a bottle to which it has been applied. 3rd. A sealing disc composed of granulated cork and the practically tasteless and odorless gum derived from linseed oil, said disc being adapted for use with sealing caps, substantially as described. 4th. A bottle sealing cap, composed of metal and having an integral pendent flange by which the cap may be locked to a bottle and provided at its top with an integral loop, substantially as described. 5th. A bottle sealing cap, having a flange corrugated in line with the axis of the cap and slitted at intervals, the corrugated portion of the flange being adapted to be bent into locking contact with an annular shoulder on a bottle head, substantially as described. 6th. A metallic bottle sealing cap, having an integral pendent flange and an integral pendent flange and an integral loop at its top reinforced by a separate underlying loop, substantially as described.

No. 42,747. Molding Machine. (*Machine de moulage.*)

David B. M. Shelley, Montgomery Station, Pennsylvania, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. In molding machines, the bonnet pivotally connected to the frame and extending over the cutter head, the presser bar connected to the front edge of said bonnet, a vertical standard connected to the frame, a swinging bracket arm on the standard, bearing on the presser bar, and a spring acting on said bracket to hold down the presser, all combined substantially as described. 2nd. In a wood molding machine, the combination, with the presser bar pivotally connected to the frame, of a vertical standard and a spring pressed bracket thereon, said bracket in position to swing against a bearing piece connected to the presser, and so hold the presser to the work, substantially as described. 3rd. In combination, with the table of a wood molding machine, a socket thereon, a vertical bar supported in said socket and held therein by a set screw, as described, a bracket on said bar, and the hood passing over the cutter head, pivoted to the table at one side of said head and engaged by the bracket at the other side, substantially as described. 4th. In combination, with the bed and hood of a molding machine, the vertical bar connected to said bed and having a swinging bracket extending into contact with said hood, the coiled spring surrounding said standard and having its ends inclosed in cups or washers on the bar, and a set nut in position to regulate the tension of said spring, all substantially as described.

No. 42,748. Disc Harrow. (*Herse à disque*)

John Henry Grout, Grimsby, Ontario, Canada, 25th April, 1893; 6 years.

Claim.—1st. In combination, with a disc harrow, a recessed collar having an annular groove to contain balls, and openings for the dust to escape from the collar, a metallic ring placed on the balls to receive the thrust of the boxing, substantially as and for the purpose specified. 2nd. In combination, with a disc harrow, a recessed collar having an annular groove to contain balls, and openings for dust to escape from the collar, an annular flange to prevent dust from entering the openings from above into the collar, a metallic ring having a groove on the under side to ride on the balls, and the boxing to press on the ring, all constructed to operate, substantially as and for the purpose specified. 3rd. In a disc harrow, the combination of the discs A, recessed collar A^1, balls B, ring C, boxing D, axle G, all constructed, substantially as and for the purpose specified. 4th. In a disc harrow, the combination of the discs A, recessed collar A^1, balls B, ring C, openings E E, flange F, boxing D, substantially as and for the purpose specified. 5th. In a disc harrow, the combination of the discs A, recessed collar A^1, balls B, ring C, openings E E, annular flange F, boxing D, and axle G, all constructed, substantially as and for the purpose specified.

No. 42,749. Check Hook. (*Crochet de sellette.*)

Thomas Hugh Gordon, Syracuse, New York, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. In a check hook, the combination of a supporting standard A, a lever D, pivoted to said standard A, and extending outwardly and downwardly from its hinge point, and then extending upwardly and backwardly toward said hinge point, and guards a^1, formed upon said standard A, and extending upwardly above and outwardly from the said hinge point of the lever D, whereby a loop is formed by the guards a^1 and the lever D, substantially as and for the purpose set forth. 2nd. In a check hook, the combination of a supporting standard A, a lever D hinged to said standard A, and extending outwardly and downwardly from its hinge point, and then extending upwardly and backwardly toward said hinge point, guards a^1 formed upon said standard A, and extending upwardly above and outwardly from the said hinge point of the lever D, whereby a loop is formed by the guards a^1 and the lever D, and a spring for retaining said lever D in its opened or closed position, substantially as and for the purpose specified. 3rd. In a check hook, the combination of a supporting standard A, a lever D pivoted to said standard A, and extending outwardly and downwardly from said hinge point, and then extending upwardly and backwardly toward said hinge point, guards a^1 formed upon said standard A, and extending upwardly above and outwardly from the said hinge point of the lever D, whereby a loop is formed by the guards a^1, and the lever D, and lateral arms or ears f on the standard A, extending downwardly beneath the hinge point of the lever D, substantially as and for the purpose set forth.

No. 42,750. Fifth Wheel for Vehicles.

(*Rond d'avant-train de voiture.*

Timothy Lewis Bosart, Centre Indiana, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. In a fifth wheel, the combination, of the axle plate A^1, having the lip a^1, and the reach iron C^1, having a widened portion containing a semi circular slot into which said lip extends, substantially as shown and described. 2nd. The combination, of the axle, the bolster, the fifth wheel part E, thickened and having an opening therethrough tapered from the top toward the centre, a projection on the fifth wheel part D, passing below and entering the same, and the projection on the reach iron c^2, passing above and entering the same, the projections thus approaching each other, and the king bolt passing through the several parts, substantially as shown and described. 3rd. The combination in a fifth wheel of the axle A, the fifth wheel part D, and the axle plate A^1 attached thereto, the bolster B, the fifth wheel part E attached thereto, said fifth wheel parts D and E, being connected together by a dove tailed formation, the reach irons C^1 and C^2, provided respectively with the projections c^1 and c^2, which are seated in bearings in the axle plate A^1, the fifth wheel part E, and the king bolt F, passing through the several parts C^2, D, A^1 and C^1, the whole being arranged and operating, substantially as shown and described.

No. 42,751. Claw Hammer. (*Marteau à dents.*)

William Kendall, Norfolk Island, Pacific Ocean, 25th April, 1893; 6 years.

Claim.—1st. A claw hammer, provided with a projection at or near the base of the claw and in front of the V-shaped slot of the claw, substantially as specified.

No. 42,752. Compound for Treating Fuel.

(*Composé pour le traitement du combustible*)

Richard Charles Flower, Boston, Massachusetts, U.S. A., 25th April, 1893; 6 years.

Claim.—1st. A composition of matter for enhancing the combustion of fuel, composed of the following ingredients in substantially the proportions mentioned, saltpetre 25 p.c., washing soda 5 p.c., glauber's salt 15 p.c., sal ammoniac 5 p.c., common salt, 50 p.c.

No. 42,753. Valve for Locomotives.

(*Soupape de locomotive.*)

William Curtis Witacre, St. Louis, Missouri, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. In an engineer's valve, the combination, with the valve casing and ports leading therefrom to the main reservoir and train pipe, a valve between said ports for automatically establishing communication between the main reservoir and the train pipe at a given pressure in the former valves for controlling direct communication between the several ports, and a handle for operating said valves, substantially as described. 2nd. In an engineer's valve, the combination, with the valve casing provided with ports leading therefrom to the main reservoir and to the train pipe and outlet openings to the external atmosphere of a valve for controlling communication between the said ports, a valve controlling communication between the port to the train pipe and the outlet openings the said valves being connected together and being provided with an extension adapted to be engaged with a cam of an eccentric cam adapted to move the valves longitudinally, a shaft for the cam and a handle to operate the shaft, substantially as and for the purpose described. 3rd. In an engineer's, valve the combination, with the valve casing provided with ports leading therefrom to the main reservoir and to the train pipe and outlet openings to the exterior atmosphere valves, for controlling communication between the said ports and between the train pipe port and the outlet openings secured to a common valve stem, a cam shaft and a handle for operating said valves, and an automatic reduction valve between said ports, of a short port between the aforementioned ports and a valve for controlling said ports, substantially as and for the purposes described. 4th. In an engineer's valve, the combination, with the valve casing provided with ports leading therefrom to the main reservoir and to the train pipe, and outlet openings to the exterior atmosphere, valves for controlling communication between the said ports and between the train pipe port and outlet openings, said valves being centered to a common valve stem, an automatic reduction valve between the said ports, of a short port between the aforementioned ports, a valve for closing the short port, a double eccentric cam for operating the said controlling valves, and the short port valve, and a cam shaft and handle for operating the cam, substantially as and for the purposes described. 5th. In an engineer's valve, the combination, with the valve casing internally formed to two different diameters with a relatively enlarged portion at each end, the train pipe port leading from the relatively reduced middle portion, and the main reservoir port and outlet openings from either of the relatively enlarged end portions respectively, of valves for controlling communication between the said ports and between the train pipe port and the outlet openings, said valves being secured to a common valve stem and being seated respectively in the shoulders formed by the relatively enlarged portions, substantially as and for the purposes described. 6th. In an engineer's valve, the combination, with the controlling valves 9 and 10 secured to a common hollow valve 11, formed with extensions 38, the short port valve 14, the valve stem 32, of which projects up through the hollow valve stem 11, double eccentric cam 31, cam rod 27, and handle 29, substantially as and for the purposes described.

No. 42,754. Air Brake for Railway Cars.

(*Frein atmosphérique pour chars de chemin de fer.*)

William Curtis Whitacre, St. Louis, Missouri, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. A brake cylinder for pneumatic brake systems, consisting of a casing formed with means for securing it to the under side of the car, and diametrically opposite lugs in which are revolubly secured sheaves for the guidance of the brake chains, substantially as and for the purposes specified. 2nd. In a pneumatic car brake system, the combination with a brake cylinder formed with diametrically opposite lugs, of sheaves revolubly secured in said lugs, a piston rod, an equalizing lever, pivotally secured in the extending end of the piston rod, chains secured to the ends of said equalizing lever, brake beams, and intermediate connections between the said chains and the brake beams, substantially as described and for the purposes specified. 3rd. In a brake cylinder for pneumatic brake systems, the combination with a cylinder casing formed with diametrically opposite lugs, of sheaves revolubly secured in said lugs, and guide lugs formed in the said casing in line with said sheave lugs, combined substantially in the manner and for the purposes specified. 4th. In a pneumatic brake system, the combination with a brake cylinder, of a piston therein provided with an expansion head, a pipe leading to the front end of said casing, a spring surrounding the piston at the back of the head, an equalizing bar carried by said piston, brake beams and connections between said equalizing bar and beams, whereby the thrust of the piston will operate the beams, substantially as described.

No. 42,755. Flexible Coupling for Pipes.

(*Joint flexible pour tuyaux.*)

John Suydam, Albany, New York, U.S.A., 25th April 1893; 6 years.

Claim.—1st. A flexible metal coupling for pipes, comprising two sections having lateral necks, a connecting section formed with a bridge, and a yoke and bolt, all combined to operate, substantially as described. 2nd. The sections *a*, *b*, formed with lateral necks, and with bearings e^1, in combination with the connecting section *c*, yoke D, bridge c^1, and bolts C, the sections being packed, substantially as described. 3rd. The sections *a*, *b*, and connecting sections *c*, and the yoke and bolt in combination with a swiveled union connected to the end of the section *a*, substantially as described. 4th. The section *a*, connected to the curved connecting pipe C, by the yoke D, in combination with the flanged union piece J, sleeve E, and anti-friction balls *g*, substantially as described. 5th. The section *b*, formed with two lateral necks turned at an angle to each other, and formed with projections c^1, substantially as described.

No. 42,756. Machine for Bolting Flour. (*Blutoir*)

John M. Finch, Crokett, California, U.S.A., 25th April, 1893; 6 years.

Claim.—1st. In combination with a casing provided with a feed opening at one end and a tailings discharge opening at the other, a series of cylinders having rotation in the same direction, and a single screen placed in front of the cylinders, substantially as set forth. 2nd. In combination with a casing provided with a feed opening at one end and a tailings discharge opening at the other, a series of bladed cylinders having rotation in the same direction, and a single screen placed in front of the cylinders, substantially as set forth. 3rd. In combination with a casing provided with a feed opening, a tailings discharge opening, and a flour discharge opening, a series of cylinders having rotation in the same direction, a single screen placed in front of the cylinders and forming a partition between the chamber in which the cylinders operate, and another chamber into which the flour passes and from which it is discharged, substantially as set forth. 4th. In combination with a casing and feed and tailings discharge openings at opposite ends, a series of cylinders having rotation in the same direction, a single screen placed in front of the cylinders, and baffle strips along the screen, substantially as set forth. 5th. In combination, with a casing provided with a feed opening at the bottom and a tailings discharge opening at the top, a series of cylinders placed one above the other, and having rotation in the same direction, and a screen placed in front of said cylinders, substantially as set forth. 6th. In combination with a casing provided with a feed opening at the bottom and a tailings discharge opening at the top, a series of cylinders rotating in the same direction, the lower one of said cylinders being constructed with radial blades, and a screen placed in front of said cylinders, substantially as set forth. 7th. In combination with a casing provided with a feed opening at the bottom and a tailings discharge opening at the top, a series of cylinders rotating in the same direction, the lower one being constructed with radial blades, a screen H, placed under the lower cylinder, and a screen D placed in front of the series of cylinders, substantially as set forth.

No. 42,757. Method of and apparatus for Condensing Fibrous Materials Preparatory to Spinning. (*Méthode et appareil de condensation des matières fibreuses préparatoire au filage.*)

Felix Victor Max Raabe, London, England, April 25th, 1893; 6 years.

Claim.—1st. The hereinabove described improvement in the method of condensing fibrous material preparatory to spinning, according to which the web of fibrous material, as it passes from the doffer of a carding engine is divided into a number of ribbons by means of two series of endless tapes, and then whilst the advancing ribbons are tightly held between the tapes and the corresponding tape cylinder, the spaces between the several ribbons are cleared by means of dividers working between the said ribbons in the manner set forth. 2nd. For the purpose of condensing fibrous material in the manner referred to in the preceding claim, the combination with two oppositely rotating grooved cylinders and two series of endless tapes placed crosswise on said cylinders, of dividing apparatus comprising two rollers, each having a number of smooth annular projections arranged to work in the grooves of the corresponding tape cylinders, substantially as herein described for the purpose specified. 3rd. In an apparatus for condensing fibrous material, the combination with two oppositely rotating tape cylinders, each formed with a number of alternate raised annular parts 5, and grooves 6, and two series of endless tapes 3, placed crosswise on said cylinders, of dividing apparatus comprising two adjustable rollers, each made in tubular sections 7, formed with annular projections 10, arranged to enter the grooves in the corresponding tape cylinders, and means for rotating said dividing rollers, substantially as herein described, for the purpose specified.

No. 42,758. Manufacture of Yarns from Certain Vegetable Waste Fibres. (*Fabrication du fil des rebuts des fibres végétales.*)

Felix Victor Max Raabe, London, England, April 25th, 1893; 6 years.

Claim.—1st. The described method of manufacturing yarn from vegetable waste fibres such as herein referred to, which consists in subjecting such fibres to the following successive operations: (A) A preparatory cleaning, opening and carding treatment, the carding being effected by a carding engine, which may advantageously be provided with an opening apparatus of the Garnett type, and being covered in, except below those parts where the feeders and doffers approach the swifts, and (B) subjecting the greased fibres to a combined woollen and cotton spinning treatment consisting in (*a*) subjecting them to a carding treatment on a carding engine or engines provided with a licker-in arrangement, (*b*) dividing the web as it leaves the carding engine or engines, by a condensing apparatus, in which the division is effected by a number of endless tapes passing round cylinders and by a dividing apparatus comprising rollers having annular projections arranged to work between the tapes and to clear the spaces between them, (*c*) subjecting the rovings as they leave the last mentioned apparatus to the action of rubbers, working with a short and quick stroke, and (*d*) spinning the rovings into yarn either on a ring spinning frame with suitable draft arrangement or on a special mule having not only a draft roller arrangment similar to that of a cotton mule, but also, a draft arrangement in the carriage, these various operations being effected substantially in the manner and by the means herein set forth, for the purposes specified. 2nd. The hereinabove described method of manufacturing yarn from vegetable waste fibres such as herein referred to, which consists in subjecting such fibres to the following successive operations, (A) a preparatory cleaning, opening, and carding treatment, the carding being effected by a carding engine which may advantageously be provided with an opening apparatus of the Garnett type, and is covered in except below those parts where the feeders and doffers approach the swifts, (B) greasing the fibres thus treated, and (C) subjecting the greased fibres to a combined woolen and cotton spinning treatment consisting in (*a*) treating them on a set of carding engines composed of two single swifted covered in carding engines, each provided with a licker in arrangement, means such as a Scotch feed, being provided to feed the one engine from the other, (*b*) dividing the web as it leaves the second of these carding engines, by a condensing apparatus in which the division is effected by a number of endless tapes passing round cylinders and by a dividing apparatus comprising rollers having annular projections arranged to work between the tapes, and to clear the spaces between them, (*c*) subjecting the rovings as they leave the last mentioned apparatus to the action of rubbers working with a short and quick stroke, and (*d*) spinning the rovings into yarn, either on a ring spinning frame with suitable draft arrangement, or on a special mule having not only a draft roller arrangement similar to that of a cotton mule, but also, a draft arrangement in the carriage, these various operations being effected, substantially in the manner and by the means herein set forth, for the purposes specified.

No. 42,759. Manufacture of Polished Leather.

(*Fabrication du cuir verni.*)

Ulderic Canten, Quebec, Canada, 25th April, 1893; 6 years.

Resumé—1° Le procédé préparatoire qui consiste à enduire le cuir d'une couche d'huile de lin bouillié et mélangée de benzine et de térébenthine, préparé dans les proportions et appliqué tel que décrit. 2° Le procédé définitif qui consiste à enduire le cuir d'un vernis préparé dans les proportions et séché de la manière décrite.

No. 42,760. Kettle for Calcining Gypsum.

(*Four à plâtre.*)

Louis C. Davidson, Grand Rapids, Michigan, U.S.A., 22nd April, 1893; 6 years.

Claim.—1st. The combination with a kettle, of a shaft as C, adapted to rotate within the kettle, arms as F attached rigid to the shaft, flexible connections as H, carried by said arms, and a hopper within the kettle, substantially as described. 2nd. The combination of a kettle, a shaft as C, adapted to rotate within the kettle, a hopper as D, supported upon said shaft and rotating therewith, arms as F connected to said shaft rigidly and rotating therewith, flexible connections as H carried by arms, an inlet as I, and an outlet as J, all constructed and operated as and for the purpose described. 3rd. The combination, of a kettle having an upwardly inclined bottom as B, a vertical shaft as C, arms as F, flexible connections as H, a hopper as D supported upon said shaft C, an inlet as I, for supplying the gypsum to the hopper, an outlet as J, for drawing off the calcined gypsum, substantially as described. 4th. The combination of a kettle, a shaft as C, revolving within said kettle, a hopper as D, supported upon said revolving shaft, and provided with internal projections as E, substantially as described. 5th. The combination within a calcining kettle of a revolving shaft, a hopper supported upon said shaft and revolving therewith, an inlet pipe for receiving the gypsum into the hopper before it has been calcined, and an outlet pipe for conveying away the calcined plaster, substantially as described.

No. 42,761. Abdominal Support.

(*Suspensoire abdominal.*)

Francis Lavinia Pickering, Brantford, Ontario, Canada, April 27th, 1893; 6 years.

Claim.—1st. An abdominal supporter comprised of a frontispiece curved to adapt itself to the under side of the stomach, a band secured to each side of the frontispiece, means for securing together the ends of the said band, and straps connected to the said bands at or near the top, and extending diagonally across the said band and secured to the lower extremity of the frontispiece, substantially as and for the purpose set forth. 2nd. An abdominal supporter comprised of a frontispiece, a hip pocket, gore arched to correspond to the curve of the hip, bone gusset pieces connecting together the hip pocket gores and frontispiece, elastic side pieces connected to the hip pocket, gores to complete the sides of the supporter, and means for securing together the ends of the said supporter, substantially as and for the purpose set forth. 3rd. An abdominal supporter comprised of a frontispiece, a hip pocket gore arched to correspond to the curve of the hip bone, gusset pieces connecting together the hip pocket gores and frontispiece, elastic side pieces connected to the hip pocket, gores to complete the sides of the supporter, and means for securing together the ends of the said supporter, straps secured to the lower edge of the sides of the supporter and to the lower extremity of the frontispiece to retain the supporter in position, substantially as described. 4th. An abdominal supporter comprised of a frontispiece, a hip pocket gore arched to correspond to the curve of the hip bone, gusset pieces connecting together the hip pocket gores and frontispiece, elastic side pieces connected to the hip pocket, gores to complete the sides of the supporter, and means for securing together the ends of the said supporter, straps secured to the lower edge of the sides of the supporter and to the lower extremity of the frontispiece to retain the supporter in position, and bands secured to the top of the said supporter and passing diagonally there across to the lower extremity of the frontispiece, substantially as and for the purpose described.

No. 42,762. Grain Shocking Machine.

(*Machine à engerber.*)

Robert Connell, Osprey, Manitoba, Canada, 27th April, 1893; 6 years.

Claim.—1st. In a shocking attachment to self binding harvesters, the combination with the harvester, of a frame consisting of a cross bar attached to the tongue sills having one end secured to said bar, a braced arm attached to the harvester supporting one of said sills, posts and cross pieces supported on and connecting said sills, a wheel carrying the extremity of said frame, a two leafed table opening laterally downwards from the centre and each operated by a crank on a shaft journalled to the sills and connected by a coupling rod and pitman to a rocking lever, side wings with curved front ends within the frame held inclined by a parallel motion, and operated by cranks to move inwardly towards each other, and downwardly by cranks on shafts journalled to the outside of the frame, and connected at the front to the rocking lever above recited by means of a coupling rod and pitman, said lever connected by a cord or chain to a winding drum or shaft, with friction pulley operated by a foot lever, ratchet wheel, pawl and friction driving wheel, a front fork having the end of its shank pivoted to a standard on the front bar and pivotally connected to the table leaves by two rods, a sheaf carrier

consisting of a fork secured to a bail, the cranked ends of which are journalled transversely to the sills and adapted to be raised by means of a cord or chain led by a pulley or pulleys, a winding drum or shaft near the driver's seat to which the end of said cord is secured, provided with a friction pulley, a foot lever putting said friction pulley into gear with the same friction wheel above recited, an elevator receiving the sheaves from the binder and delivering them upon the table, and sheaf carrier above recited, and consisting of two shafts with sprocket wheels carrying an endless chain with spiked slats and journalled at the ends of an inclined frame secured to the sills, and one of said shafts receiving motion from the packer shaft of the binder by means of a chain and sprocket wheel connected thereto, with a clutch controlled by a lever connected to the sheaf carrier and framing, forming guides at the upper part of the main frame, substantially as set forth. 2nd. In an attachment to self binders, the combination with the framing and tongue of the main machine, of a cross bar attached to the tongue, two sills each having one end attached to said cross bar, a braced arm supporting the inner sill, a wheel supporting the outer sill and two sets of posts, and over head cross bars connecting the two sills, substantially as set forth. 3rd. In an attachment to self binders, the combination of a cross bar, two sills attached thereto, a wheel supporting the outer sill, posts and cross pieces connecting said sills, two shafts journalled to said sills, each having a crank arm at each end, a coupling rod connecting the crank arms of said shafts at the forward end and two table leaves hinged parallel to said shafts and operated by the crank arms at the other end of said shafts, substantially as set forth. 4th. In an attachment to self binders the combination of a cross bar two sills each having its forward end secured to said cross bar, a wheel supporting the outer sills posts and cross pieces connecting said sills two shafts each having a crank arm at each end journalled to said sills, a coupling rod connecting the crank arms at the forward ends extending to the cross bar first above recited, a rocking lever pivoted to said cross bar, and a pitman connecting said rocking lever and coupling rod, substantially as set forth. 5th. In an attachment to self binders, the combination, with the main machine of a cross bar, a rocking lever pivoted thereto, a cord or chain secured to said rocking lever, a winding drum or shaft provided with friction pulley at one end and having the other end of said cord or chain secured to it, the foot lever with crank adapted to lift the pulley end of said shaft, a friction wheel receiving motion from the main gear, and apapted to gear with said friction pulley, a ratchet wheel on said shaft and a foot lever pawl gearing in said ratchet wheel, substantially as set forth. 6th. In an attachment to self binders, the combination of a cross bar two sills having their forward ends secured to said cross bar posts secured to said sills cross pieces connecting said posts two shafts journalled to said posts and having crank arms at each end, a coupling rod connecting the forward crank arms, a pitman connecting said rod with a rocking lever, and two wings parallel to said shafts and having the rear crank arm journalled therein and provided with a link to form a parallel motion, substantially as set forth. 7th. In an attachment to self binders, the combination of a cross bar, two sills each having its forward end secured to said cross bar, posts supported on said sills, cross pieces connecting said posts, two table leaves hinged to said posts, a post on said cross bar, a fork pivoted to said post, and rods connecting said fork and table leaves, substantially as set forth. 8th. In an attachment to self binders, the combination of two sills placed a distance apart and suitably connected, a bail having cranked ends journalled transversely on said sills, and the shanks resting horizontally thereon, a fork or head rest on said bail, substantially as set forth. 9th. In an attachment to self binders, the combination, with the framing and mechanism of the binder of a friction wheel on a shaft receiving motion from the binder mechanism, a winding drum or shaft having a friction pulley adapted to gear with said friction wheel, a foot lever adapted to press said drum or shaft and the pulley thereon into gear with said friction wheel, a cord or chain having one end secured to said drum or shaft, a bail journalled transversely to two sills and having the other end of said cord or chain attached, and two wheels suitably connected and supporting said bail, substantially as set forth. 10th. In an attachment to self binders, the combination with the framing and mechanism of the binder, of a sill connected to the framing to frame sides supported on said sill two elevator shafts journalled in said sides, a sprocket wheel connected to the lower one by means of a clutch and connected by an endless chain to the packer shaft sprocket wheels on said elevator shafts, endless chains on said sprocket wheels and spiked slats on said chains, substantially as set forth. 11th. In an attachment to self binders, the combination of a framing consisting of parallel sills, carrying posts connected overhead at one end, the sheaf carrier consisting of a bail having cranks journalled transversely to said sills, and a fork or head rest, the elevator consisting of spiked slats on endless chains running over sprocket wheels on shafts journalled in a frame supported on the inner sill, the sprocket wheel on the lower elevator shaft, a clutch connecting said wheel with the shaft, a lever controlling said clutch, and a rod connecting said lever with an arm on the inner crank of the sheaf carrier bail, substantially as set forth. 12th. In an attachment to self binders, the combination of two sills set a distance apart, and supporting posts connected overhead at the forward end of said sills and framing or blades around the upper rear part of said posts, and the forward end forming guides in the delivery of the sheaves from the elevator, substantially as set forth.

No. 42,763. Piston Valve for Steam Engines.

(*Tiroir cylindrique pour machines à vapeur.*)

Martin Eshleman Hershey, Harrisburg, Pennsylvania, U.S.A., April 27th, 1893; 6 years.

Claim.—1st. In a piston valve, the combination, with the body formed by the disc having the annular peripheral channel on one side and the central hub projecting on the same side as the peripheral channel, of the packing rings in the channel, the sectional spider underlying the rings, the expander surrounding the hub within the valve and co-operating with the sectional spider, and the set nuts working on the end of the hub to adjust the expander, substantially as described. 2nd. In a piston valve, the combination, with the body having the annular peripheral channel and central hub, and the packing rings in said channel, of the sectional spider, having the segmental plates underlying said rings, the central inclined plates, and the radial arms uniting said plates, the conical expander working in the hub and co-operating with the inclined plates, and the set nuts on the hub for holding the expander in adjusted position, substantially as described. 3rd. In a piston valve, the combination with the body formed by the disc, having the central hub and slotted flange near its periphery, the face plate or ring secured to the flange, and the packing surrounding the flange between the disc and face plate or ring, of the segmental plates underlying the packing rings, the radial arms carrying said plates passing through the slots in the flange, and the conical expander working on the hub for moving the segmental plates outward to tighten the packing, substantially as described. 4th. In a piston valve, the combination, with the disc, having the central hub and flange near the periphery, having slots or openings therein, the face plate or ring secured to said flange, and the packing rings between said plate and disc, of the sectional spider consisting of the segmental plates underlying the packing rings, the central inclined plates and the radial arms passing through the flange and uniting the said plates, the expander working on the hub and having the inclined ribs or projections engaging the inclined plates and the set nuts for holding the expander in adjusted position, substantially as described. 5th. In a piston valve, for steam engines, the combination, with the piston rod, of the two independent heads mounted on said rod and adjustable toward and from each other, substantially as described. 6th. In a piston valve, the combination, with the valve rod and the head secured permanently thereon, of the opposite head mounted on said rod and having set nuts on both sides of the same, whereby it may be adjusted longitudinally of the shaft, substantially as described. 7th. In a piston valve, the combination, with the rod, of the oppositely arranged heads secured thereon and having the outwardly projecting hubs and peripheral chambers, the packing rings, the sectional spiders, the expanders, the set nuts for adjusting said expanders screwing on the outer ends of the hubs, whereby the heads may be adjusted while in the valve chest and without dismembering the valve, and the nuts on the rod engaging the hub to hold the valve in place irrespective of the adjustment of the expanders, substantially as described. 8th. A piston valve for steam engines, having the support for the packing rings formed of metal having a greater range of expansibility than the valve chest under the influence of variations in temperature, substantially as described. 9th. In a piston valve for steam engines, the combination, with the packing rings, of the relatively thin radial arms for supporting the same, formed of metal having a greater range of expansibility than the cylinder under the influence of variations in temperature, substantially as described. 10th. In a piston valve for steam engines, the combination, with the body portion, of the packing rings, and the spider supporting said rings, formed of metal having a greater range of expansibility than the body portion under the influence of variations in temperature, substantially as described. 11th. In a piston valve for steam engines, the combination, with the iron or steel body portion and the packing rings of the supporting spider for said rings, formed of brass, substantially as described. 12th. In a piston valve for steam engines, the combination, with the body portion formed of metal having a small range of expansibility and the packing rings, of the sectional spider supporting said rings, having its radial arms formed of metal having a greater range of expansibility than said body portion, substantially as described. 13th. In a piston valve for steam engines, the combination, with the body portion formed of metal having a small range of expansibility and the packing rings, of the sectional spider supporting said rings, having relatively thin radial arms formed of metal having a greater range of expansibility than said body portion, and an expander co-operating with the sectional spider to adjust the same for wear, substantially as described.

No. 42,764. Bicycle Handle Bar.

(*Barre de poignée de bicycle.*)

Stephen Olin Johnson, Detroit, Michigan, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. In a bicycle, a bent handle bar adjustably pivoted to the steering head, and a quick acting clamp for locking the same in its adjusted position, substantially as described. 2nd. In a bicycle, the combination of the steering head, a transverse split socket at the upper end, a bent handle bar journalled therein, and a cam lower on the rear of the head for clamping the bar in its ad-

justed position, substantially as described. 3rd. In a bicycle, the combination of the steering head, a transverse split socket at the upper end, a bent handle bar, a hub centrally thereon engaging in the socket, a set screw on the socket, engaging a groove in the hub, and a cam lever for clamping the socket upon the hub, substantially as described. 4th. In a bicycle, the combination with the steering head of a handle bar journalled therein having its ends rearwardly bent, transverse sockets in the ends of the handle bar, handles having pins engaging in said sockets, and a quick adjusting device for the handle bar, substantially as described.

No. 42,765. Attachment for Beds. (*Attache pour lits.*)

Arie C. Wierenga, Zeeland, Michigan, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. The combination with bedstead, of angular hangers having pivoted and sliding connection with the slats of the bedstead, and a frame secured to the hangers, whereby provision is made for swinging the frame under the bedstead when not in use, substantially as specified. 2nd. The combination with a bedstead, of angular hangers, one member of which has a pivoted and sliding connection with the slats of the bedsteads, a frame secured to the other members of the hangers, and means for securing the frame in an upright position at the side of the bedstead or in a nearly horizontal position under the bedstead, substantially as described. 3rd. The combination with bedstead having slotted slats, of hangers having a sliding and rocking engagement with the slotted slats, a frame secured to the hangers, and braces secured to the head and foot board, and adapted to engage the frame to hold it in an upright position, substantially as described. 4th. In a side guard for open bedsteads, the combination with the bedstead frame, and slotted bottom slats thereon, of an elongated frame, hangers attached at one side edge of the frame and in sliding and rocking engagement with the slotted slats, folding braces pivoted on the head board and foot board of the bedstead, and adapted to detachably interlock with studs on the ends of the movable frame, and a turn button on the bed rail adapted to support one edge of said movable frame, substantially as described. 5th. A guard for bedsteads comprising an elongated frame, L-shaped hangers secured to the frame and provided with a cross pin in one member for their connection with slotted slats of a bedstead, and hinged braces adapted to be secured to the head and foot board of a bedstead, and to engage the frame to hold it in an upright position, substantially as described.

No. 42,766. Reducing Pressure Valve.

(*Soupape à pression.*)

Edgar James Wood, New York, State of New York, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. In combination, a high pressure chamber, a low pressure chamber, a main valve under the control of the fluid in the high pressure chamber to open communication for the passage of the fluid, a piston valve independent of the aforesaid main valve and permanently exposed directly to the pressure of the fluid in the low pressure chamber, pressure regulating means in connection with the piston valve for determining the pressure under which it shall operate, a chamber at the back of said main valve in permanent communication with the high pressure chamber and a passage way from the said chamber at the back of the main vale through the wall of the piston valve casing and past the piston valve itself to the low pressure chamber, substantially as set forth. 2nd. The reducing pressure valve and regulator, comprising three valves, one under the control of the high pressure motive fluid to operate it, a second under the control of the low pressure motive fluid to operate it and a third under the control of the pressure at the outletting side of the pump to operate it, the second and third named valves being connected to operate as one and located in chambers independent of each other, and a conduit leading from the outer side of the first named valve into communication with the low pressure motive fluid, said conduit being under control of both second and third named valves to close and open it, substantially as set forth. 3rd. The reducing pressure valve comprising a barrel or coupling section separated into high pressure and low pressure chambers, a valve for controlling the passage of fluid from one chamber to the other, a closed casing for said valve, the interior of said casing being in communication with the high pressure chamber through an opening in the valve, and a piston valve in communication with the low pressure chamber and provided with a port through it in communication with the interior of the casing of the first named valve, in combination with a piston within an inclosed casing and connected to move with said piston valve, and means for connecting the casing containing said piston with the delivery side of a pump and for connecting the barrel or coupling section with a pipe for the transmission of a motive fluid, substantially as set forth. 4th. The reducing pressure and regulator comprising three valves, one under the control of the high pressure motive fluid, another under the control of the low pressure motive fluid, and a third under the control of either the low pressure fluid or the fluid at the discharge side of a pump and from either a closed or open tank, the low pressure chamber being in communication with a chamber at the back of the high pressure valve and said communication being under the control of the third named valve to open and close it, substantially as set forth.

No. 42,767. Apparatus for Controlling the Draft in Chimneys. (*Appareil pour contrôler le tirage dans les cheminées.*)

George Lander Thielle, Baltimore, Maryland, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. As a means for operating a damper in a chimney, a movable body subjected at one side to the pressure of the gases in the furnace or combustion chamber, and at the other side to the atmosphere, substantially as specified. 2nd. In combination, with the combustion chamber of a furnace and a chimney in communication therewith, a movable tight body having one side thereof subjected to the products of combustion from or in communication with the said furnace, and the other side open to the exterior air, a damper situated in the chimney and means to connect the said movable body to the said damper, substantially as and for the purpose specified. 3rd. In combination, with a furnace and chimney, a box containing a diaphragm, one side of which is in communication with the outer air and the other with the interior of the furnace, and means, substantially as described, whereby the movement of the diaphragm is communicated to the said damper, substantially as specified.

No. 42,768. Wardrobe Fixtures.

(*Appareil pour garde-robe.*)

Joseph Jackson Bisel, Philadelphia, Pennsylvania, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. The combination, with the bar and a socket in which one end of the bar is secured, said socket having integral pivots, of a bar support made in two pieces, the lower piece having a pivot lug, a lip projecting upward from the lug, and a shoulder in rear of the lip, the upper piece having an attaching base, a pivot lug and a lip extending downward from said lug, this lip, abutting against the shoulder on the lower piece, and the lip on that piece abutting against the lug on the upper piece, and a rivet uniting the lips. 2nd. The combination, with the bar carrying hooks and a socket in which one end of the bar is secured, said socket having at its rear end a central bifurcated vertical extension provided with integral pivots, of a bar support made in two pieces, the lower having a pivot lug, a lip projecting upward from the lug, and a shoulder in rear of the lip, the upper piece having an attachment base, a pivot lug, and a lip extending downward from said lug, this lip abutting against the shoulder on the lower piece, and the lip on that piece abutting against the lug on the upper piece, and a rivet uniting the lips. 3rd. The combination, with the bar carrying hooks and a socket in which one end of the bar is secured, said socket having at its rear end a central bifurcated vertical extension provided with integral pivots, the lower pivot being slightly in rear of a vertical line drawn through the upper pivot, of a bar support made in two pieces, the lower piece having a pivot lug whose upper surface is inclined downward in the forward direction, a lip projecting upward from said lug, and a shoulder in rear of the lip, the upper piece having an attaching base, a pivot lug and a lip extending downward from said lug, this lip abutting against the shoulder on the lower piece, and the lip on that piece abutting against the lug on the upper piece, and a rivet uniting the lips.

No. 42,769. Ladder. (*Echelle.*)

Franz Dallinger and Joham Popp, both of Gross-sachsen Baden, Germany, April 27th, 1893; 6 years.

Claim.—1st. An arrangement of the main supports or props *b*, movable in hinges *a*, and kept away in any position by means of a toothed rod *d*, laying on the three cornered frame, and provided with a self acting toothed gear. 2nd. An arrangement for raising and lowering the ladder frame in which the rope or chain starting from the roller or support axis *n*, passes over a roller *h*, on the cross piece of the ladder frame, then over a guide roller *i*, on the end point *m*, of the three cornered frame, to the winding apparatus *f*. 3rd. A ground regulating apparatus (fig. 5), of which the forced rotation between the ladder frame and the cross piece of the front support, which are bolted hingewise at a point *q*, is effected by means of a strong iron loop *r*, fastened to the main cross piece of the ladder and connected to a lever *s*, provided with a slot, in which slot a screw nut *t*, provided with studs, is placed so that it can rotate, and which can be turned by means of a spindle *u*, connected to the ladder frame, and which is itself turned by a hand wheel *v*, whereby a side displacement of the main portion is effected. 4th. The arrangement of an equal turning or rotating of the small runner or support rollers *y*, for the purpose of sharp turns or side movement of the ladder, by means of a rod or lever connection in the form of a parallelogram, in which two similarly formed levers are firmly attached to the axis of the roller forks, and one of these levers extended backward, forms the turning rod which finishes in the handle *z*. 5th. The arrangement for quickly throwing off the fall hook I, by means of a short upward blow on the toothed rod *d*, communicated through a strong eccentrically bent iron curve I, which is firmly connected to the fall hook or rack catch, and which usually slides over the toothed rod like a smooth spur.

No. 42,770. Art or Process of Tanning.
(*Art ou procédé de tannage.*)

Secondo Durio and Giacomo Durio, both of Turin, Italy, April 27th, 1893; 6 years.

Claim.—1st. The herein described process of tanning, which consists in subjecting the hides to the action of a tannin (tannic acid) solution of a strength from 6½° (six and a-half degrees) to 20° (twenty degrees) but preferably 8° (eight degrees) Beaumé, and simultaneously to a tumbling or fulling operation. 2nd. The herein described process of tanning, which consists in subjecting the hides to the action of a tannin (tannic acid) solution of a strength from 6½° (six and a half degrees) to 20° (twenty degrees), but preferably 8° (eight degrees) Beaumé, and simultaneously to a tumbling or fulling operation, and maintaining the solution at the required strength by the addition of tannic acid, as the solution becomes weakened by loss of tannin.

No. 42,771. Hot Air Register. (*Registre à air chaud.*)

Richard Samuel Thomas Cissel, Elizabeth, New Jersey, U. S. A., April 27th, 1893; 6 years.

Claim.—1st. In a hot air register, the combination of the frame having a nut locking surface located inside the side piece of the frame, the pivoted slats, the governing rod pivotally connected with the slats, the operating lever to which said rod is connected, the securing pivot bolt and its nut, the bolt passing through the side piece of the frame and operating lever and into the nut that is held against turning by the locking surface of the frame, substantially as set forth. 2nd. In a hot air register, the combination of the frame having a nut locking surface located inside the side piece of the frame, the pivoted slats, the governing rod pivotally connected with the slats, the operating lever to which said rod is connected, the securing bolt and its nut, and the sheet metal box in which the nut is seated, the bolt passing through the side piece of the frame and operating lever and into the nut held against turning by the locking surface of the frame, substantially as set forth. 3rd. In a hot air register, the combination of the frame having the socket recesses a, and the boss A^1 located inside the side piece of the frame, the slats whose pivots work in said recesses, the governing rod pivotally connected with the slats, the operating lever, the pivot bolt and its nut, the bolt passing through the side piece of the frame, the operating lever and into the nut that is held against turning by the face of the boss, substantially as set forth. 4th. In a hot air register, the combination of the frame having an angular recess therein located inside the side piece of the frame, the pivoted slats, the operating lever, the governing rod pivotally connected with the slats and lever, the sheet metal box, the nut seated in the box, the box and enclosed nut being held against turning by the angular recess, and the pivot bolt passing through the side piece of the frame and operating lever and screwing into the nut, substantially as set forth. 5th. In a hot air register, the combination of the frame having the recess therein, the slats, the operating lever, the governing rod pivotally connected with the slats and lever, the screw and nut, the bolt passing through the frame and lever and into the nut lying in the recess in the frame, and a friction device bearing on the lever, substantially as and for the purpose set forth. 6th. In a hot air register, the combination of the frame having the recess therein, the slats, the operating lever, the governing rod pivotally connected with the slats and lever, the screw bolt and nut, the bolt passing through the frame and lever, and into the nut lying in the recess in the frame, and a sheet metal friction piece clamped between the nut and the lever and having a boss surrounding the bolt and extending into the hole in the lever, substantially as set forth. 7th. In a hot air register, the combination of the frame having the locking recess or surface, the pivoted slats, the connecting rod and pivoted operating lever, and the braces or guides a^2 against which the connecting rod works. 8th. In a hot air register, the combination with a supporting frame, having an angularly recessed boss, of slats pivoted to said frame, a governing rod pivoted eccentrically to said slats, an operating lever pivoted to the governing rod, a screw pivot passed through the supporting frame and the shank of the operating lever, a nut engaging said screw pivot, and a centrally perforated sheet metal box passed over said screw pivot and lying between the operating lever and the nut within the recessed boss of the supporting frame, said box having upturned flanges embracing the sides of the nut and a concentric flange on its under side, substantially as described. 9th. In a hot air register, the combination of a supporting frame having an angularly recessed boss, slats pivoted to said frame, a governing rod pivoted eccentrically to said slats, an operating lever pivoted to the governing rod, a screw pivot passed through a slot in the supporting frame and the shank of the operating lever, a nut engaging said screw pivot, and a centrally perforated sheet metal box passed over said screw pivot and lying between the operating lever and the nut and seated in the recessed boss of the supporting frame, said box having upturned flanges embracing the sides of the nut and provided upon its under side with a central brushing surrounding the screw pivot and a raised concentric flange exerting a frictional actional on the operating lever, substantially as described.

No. 42,772. Driving Reins. (*Rênes.*)

George Groder, Waterville, Maine, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. The herein described attachment for driving reins consisting of a hand strap having attached to each end a buckle composed of an oblong link, a tongue hinged at one end thereof and having its free end resting normally on the other end of said link, said hand strap being secured to the side of said link, substantially as described. 2nd. The herein described buckle consisting of an oblong link, a tongue hinged at one end thereof and having its free end resting normally on the opposite end of said link, and a loop connected with side of said link for receiving a strap, substantially as described.

No. 42,773. Refrigerator. (*Réfrigérant.*)

James George Malcolm, Toronto, Ontario, Canada, 27th April 1893; 6 years.

Claim.—1st. In a refrigerator the combination with the wall of vertical flue formed therein, the lower end of which enters the cooling chamber at or near its base, and the upper ends of said flues adapted to discharge into the space below the roof of the refrigerator, substantially as and for the purpose specified. 2nd. In a refrigerator a series of joists forming part of the internal structure of the refrigerator in combination with a water proof cap for each of said joists, said water proof cap overlapping each edge of the joist a sufficient distance to drain the water off into the pan below, substantially as described. 3rd. In a refrigerator the combination of the ice rack, with a corrugated water pan located below the ice rack and adapted to receive the water therefrom, said corrugations forming the water channels and a lip at the end of the said corrugations on the under side of the pan, substantially as and for the purpose described. 4th. In a refrigerator a corrugated water pan each of the corrugations of which is V-shaped in cross section, a water trough extending along the end of the said pan and adapted to receive the water therefrom, each of the said corrugations serving as a water channel, a lip at the discharge end of each of the said corrugations and on the under side of a pan gutter located below each of said corrugations, each of said gutters discharging into said trough and a lip at the discharge end of said gutters and on the under side thereof, substantially as and for the purpose described. 5th. In a refrigerator, a series of joists forming part of the internal structure of said refrigerator, a cap for each of said joists and extending over the edge of its respective joist a sufficient distance to allow the water to drain off without coming in contact with the said joist, a water pan below said caps and an ice rack resting on the top of said caps, substantially as described. 6th. In a refrigerator a series of joists forming part of the internal structure thereof, an ice chamber supported by said joists, a series of cold air flues located between the ice chamber and the inner side of the refrigerator wall, a stop at the upper end of said cold air flues to arrest the upward passage of the cold air, a series of closed flues located between the ice chamber and the outer wall, said closed flues adapted to convey the air from the cooling chamber to a space below the inner side of the roof and means for conveying the air from the said space to the atmosphere, substantially as and for the purpose described. 7th. In a refrigerator, the combination of an exterior roof, an interior roof located within the refrigerator and below the exterior roof, said interior roof inclined from each side towards the middle, a space between the interior and exterior roofs and means for permitting the passage of the air from the under side of the interior roof into said space and means for permitting the passage of the air from said space to the atmosphere, substantially as and for the purpose described. 8th. In a refrigerator a flue adapted to enter the ice chamber and a connection between said flue and the outside of the building, substantially as described. 9th. In a refrigerator in combination with the exterior wall of a vertical flue formed therein, the lower end of said flue opening into the lower end of the cooling chamber, and the upper end of said flue opening into the space just below the interior roof, said flues adapted to convey the air from the bottom of the cooling chamber to the top of the refrigerator, a series of joists located within the walls and forming part of the interior structure of the refrigerator, a cap for each of said joists, said cap overlapping the edges of said joist, a corrugated water pan located below said caps, the corrugations of said pan serving as water channels, a trough placed along the end of said pan and said gutters, an ice rack supported upon said cap, an ice chamber, a series of flues adapted to convey the cold air downwards from said ice chamber to the cooling chamber, a series of closed flues adapted to convey the light air from the cooling chamber to the space below the interior roof, an interior roof having means for permitting the passage therethrough of the light air, an exterior roof and slats to permit of the passage of the light air from the cooling chamber therethrough, substantially as and for the purpose described.

No. 42,774. Spindle Drill Chuck.
(*Tige et mandrin de foret.*)

John James Stevens, Galt, Ontario, Canada, 27th April, 1893; 6 years.

Claim.—1st. A spindle B, shaped to fit the spindle A, of the drilling machine, in combination with the spindle M, carrying the drill chuck N, and geared to the spindle B, substantially and for the purpose specified. 2nd. A spindle B, shaped to fit the spindle A, of the drilling machine, in combination with the spindle M, carrying the drill chuck N, and of the gear wheels E, F, I and L, one of the said wheels being held by friction, substantially as and for the pur-

pose specified. 3rd. A spindle M, having an adjustable pinion L, connected to it, in combination with the sleeve P, rack Q, pinion S, and spring V, arranged substantially as and for the purpose specified.

No. 42,775. Method of Packing and Device for Applying Gold Film. (*Méthode d'emballage des feuilles d'or et appareil de dorage.*)

Walter Hamilton Coe, Providence, Rhode Island, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. The herein described method of packing decorative films, consisting in cutting or forming the films into ribbons, applying these ribbons to protecting strips having a slightly adhesive surface, and winding the said ribbons and strips on spools of the same width as the ribbons, constructed to press the film down on the part to be gilded as the film is unwound therefrom, as described. 2nd. A device for applying decorative films, consisting of a delivery roll and a package roll independently journalled on shafts secured in suitable frames. 3rd. The combination, with the handle 9, having the arms 10-10, and the delivery roll 11, journalled between the ends of the arms, of a frame consisting of the side arms 12-12, having the slots 14, and a connecting sleeve pivoted between the arms 10-10, the shaft 15, carrying the discs 16-16, journalled in said slots, and the springs 17, secured to the arms 12-12, and to studs 18, on the arms 10-10, as and for the purpose described.

No. 42,776. Seal Lock. (*Serrure à cachet.*)

Patrick H. Conger, Waterloo, Iowa, U.S.A., 27th April, 1893; 6 years.

Claim.—1st. In a seal lock, the combination, with a bolt provided at one end with an eye or loop, and having near the other end a recess or chamber for the insertion of a pin, spring and a plug, of a cap or head open at both ends, and having a circumferential groove midway of the sleeve portion for the reception of the locking pin or latch, substantially as described. 2nd. In a seal lock, the combination with a bolt having a loop or eye at one end and a recess or aperture near the other end of differing diameters for the insertion and securing of a movable pin, springs and a plug, of a cap or head provided with a circumferential groove midway of the sleeve for the reception of one end of the locking pin, substantially as described. 3rd. As an article of manufacture, a seal lock consisting of and comprising a bolt with an eye or loop at one end, and having near its other end a movable pin resting on a spiral spring, said spring in turn resting upon an immovable plug, and a cap or head open at both ends, having a circumferential groove midway of the sleeve portion of the same, for the reception of the projecting end of the movable pin or latch secured in the bolt, substantially as described.

No. 42,777. Belt and Pulley Cover.

(*Courroie et couverture de poulie.*)

Ernst Bockmühl and Wilhelm Karthaus, both of Barmen, Bettershausen, Rhenish Prussia, Germany, 27th April, 1893; 6 years.

Claim. 1st. A jointed belt in combination with a corresponding cover or bandage, the links of the belt being provided with depressions on the inner side, and the links of the cover formed from a like piece of belting, being provided with depressions on the outer side so that on coming together the link ends of the belt enter the depressions of the cover, and the link ends of the latter enter the depressions of the belt, substantially as described.

No. 42,778. Method of Preparing and Holding Sausage Casings. (*Méthode de préparer et tenir les enveloppes de saucisse.*)

Peter F. Turner, New York City, New York, U.S.A., April 27th, 1893; 6 years.

Claim.—The herein described method of preparing and holding sausage casings, which consists in tying the casings together end to end so as to form a continuous string, and then winding the string of casings upon a spool or similar article, substantially as described. 2nd. As an improved article of manufacture a spool or roll of sausage casings, comprising a revoluble spool, and a string of sausage casings tied end to end and wound upon the spool, substantially as described.

No. 42,779. Car Coupler. (*Attelage de chars.*)

American Safety Car Coupling Company, assignee of Michael I. Welch, all of Cordele, Georgia, U. S. A., April 29th, 1893; 6 years.

Claim.—1st. In a car coupler, the combination with a drawhead of a pair of jaws fixed thereto, one of said jaws being provided with an oscillatory split pin section having a straight diametrical wall and flanged top extending over the jaw to which it is attached, and a spring connected with said section, whereby said sections when brought into coincidence between said jaws will turn to close, in the manner and for the purpose substantially as described. 2nd. In a car coupler of the class described, a split pin having a vertical axis and flanged top, substantially as described. 3rd. In a car coupler of the class described, a spring actuated coupling pin having two sections provided with flat vertical walls, in combination with springs adapted to automatically turn the sections into locked position when brought into coincidence. 4th. In a car coupler of the class described, the combination with a draw head, of a pair of jaws, one of which is bevelled and the other provided with a semi cylindrical recess, and an oscillatory pin section movable in the recess, substantially as described. 5th. The combination with a recessed buffer block, of a draw head having a stem fitting loosely within the recess and pivotally connected to the block, a bevelled and a recessed jaw, a split pin section secured to oscillate within the recessed jaw, and turn mechanism, substantially as described. 6th. A split pin provided with a drawhead pivoted to swing laterally on a buffer block, as and for the purposes set forth. 7th. In a car coupler of the class described, a pair of twin coupling sections, each of which embraces the combination with a draw head having a bevelled jaw, of a recessed jaw, provided with an oscillatory split pin section, semi circular flanges upon the opposite ends of said section, and interlocking arch shaped lugs and recesses adapted to hold said sections in place and to limit its oscillatory movement, as set forth.

No. 42,780. Covering for Steam Boilers.

(*Chemise pour chaudières à vapeur.*)

Terence Sparham, Brockville, and Henry C. Michell, Toronto, both of Ontario, Canada, 29th April, 1893; 6 years.

Claim.—1st. A boiler covering, comprising a composition B, of ground or pulverised mica, plumbago, soapstone and blue clay moistened with molasses, water and yeast or ferment and attached adhesively in a plastic state to the exterior of the boiler and hardened by heat from the boiler, a jacket C, of wire cloth or metallic netting stretched over said composition, the interstices of said netting filled with said plastic composition to make a smooth and finished surface, and a coating D, of paint or tar to protect said smooth surface from exposure to the weather, as set forth. 2nd. A boiler covering compound, consisting of ground or pulverised mica, plumbago, soapstone, and blue clay, in about equal proportions as to bulk, and moistened with molasses, water and yeast or a ferment, as set forth.

No. 42,781. Saw Teeth. (*Dent de scie.*)

The American Saw Company, assignee of William Edward Brooke, all of Trenton, New Jersey, U.S.A., 29th April, 1893; 6 years.

Claim.—1st. The combination, with a saw plate having a recess whose edge is formed by two unequal arcs or segments the inner of which is substantially a semicircle and the outer of which is the arc of a circle concentric with that to which the inner arc belongs there being between the two unequal segments an angular stop or shoulder and there being also a diametrically opposite stop or shoulder at the other end of the inner arc of a saw tooth having its rear edge engaging that portion of the edge of the recess formed on the outer arc having also a shoulder seated upon the aforesaid intervening stop, and likewise a depending foot engaging a part of the inner arc of the recess, and a locking plate engaging the remainder of the inner arc of said recess with a heel engaging the other stop, and provided with a projection which enters a recess in the front edge of the tooth, and having a recess below it for receiving the foot of the tooth, the outer or upper edge of the locking plate being curved so as to form a continuous concave throat in connection with the outer concave edge of the tooth, substantially as described. 2nd. The combination, with the saw plate A, having a recess with edges a and b cut on arcs of different circles and provided with tongues a^1 and b^1 respectively, the inner arc a being substantially a semicircle and the outer arc b being a part of a circle concentric with that to which the arc a belongs, there being between the two segments, a flat angular connecting shoulder c, and at the opposite end of the edge a, another angular shoulder k, the tooth B, having a rear groove l which receives the tongue b^1, a shoulder f, which sits upon the shoulder c, and a depending foot F, and a locking plate C, having a heel k abutting against the shoulder k, and a projection D, entering the recess E, in the front edge of the tooth, with tongue d entering groove e on the tooth and said locking plate having likewise the recess G for receiving the foot F, and its front or upper edge being concave so as to form a continuous throat in conjunction with the concave edge of the tooth, substantially as described. 3rd. The combination, with a saw plate having a recess whose edge is formed by two unequal arcs or segments, the inner of which is substantially a semicircle, and the outer of which is the arc of a circle concentric with that to which the inner arc belongs, there being between the two unequal segments an angular stop or shoulder of a saw tooth having its rear edge engaging that portion of the edge of the recess formed on the outer arc, having also a shoulder seated upon the aforesaid intervening stop and likewise a depending foot engaging a part of the inner arc of the recess, and a locking plate engaging the remainder of the inner arc of said recess and provided with a projection which enters a recess in the front edge of the tooth, substantially as described.

No. 42,782. Bung. (*Bonde.*)

John Paeumle, William Kootzand Charles Knoernseckild, all of Milwaukee, Wisconsin, U.S.A., 29th April, 1893; 6 years.

Claim.—1st. The combination, with a bung, of a screw bolt working through it, said bolt provided upon its inner end with a contacting surface constructed to act against the inner face of the bung upon the unscrewing of the bolt and to rotate said bung therewith,

substantially as set forth. 2nd. In a bung, the combination of an elastic ring, discs acting against opposite faces of said ring, and a screw bolt passing through said discs and drawing the same together to expand the ring, said bolt provided upon its inner end with a contacting surface constructed to act against the inner face of the inner disc upon the unscrewing thereof and to rotate the bung therewith, substantially as set forth. 3rd. In a bung, the combination of an elastic ring, a disc and collar acting against the opposite faces of said ring, the disc being provided on its inner face with radial ribs adapted to engage the ring revolubly, and a bolt revoluble with the disc and adapted to draw the disc and collar together to expand the ring, substantially as set forth. 4th. In a bung, the combination of an elastic ring, a disc and a collar acting against the opposite faces of said ring, radial ribs on the inner faces of the disc and the collar adapted to enter complimentary grooves in the ring, and a bolt arranged to draw the disc and collar towards each other compressing the ring, and to be revolved carrying the disc, the ring and the collar around with it, substantially as set forth. 5th. In a bung, the combination of an elastic ring, substantially cylindrical upon its outer surface, and its inner surface bevelled from the end inwardly, forming tapering faces, a disc fitting against the inner tapering face of the ring, a frusto conical collar fitting against the outer tapering face, and a screw threaded bolt passing through an aperture in the collar and through a threaded opening in the disc, said bolt provided upon its inner end with a contacting surface constructed to act against the inner face of the disc upon the unscrewing thereof and to rotate the bung therewith, substantially as set forth. 6th. In a bung, the combination of an elastic ring, discs acting against opposite faces of said ring, and a screw bolt passing through the discs, said bolt provided upon its outer end with an integral headed portion, and upon its inner end with means for preventing its entire withdrawal from the bung, substantially as set forth. 7th. In a bung, the combination of an elastic ring, discs acting against opposite faces of said ring, and a screw bolt provided upon its inner end with means for preventing its entire withdrawal from the bung near its outer end with an enlargement, and at its extremity with a headed portion having its edge extending laterally beyond the enlargement, said enlargement adapted to be engaged by a tool or spanner passing beneath the headed portion, substantially as set forth.

No. 42,783. Furnace. (*Fournaise.*)

Edward Gurney, Toronto, Ontario, Canada, assignee of Francis Kernan, jr., of Utica, and William H. Landers, of Syracuse, both in New York, U.S.A., 29th April, 1893; 6 years.

Claim.—1st. The combination with the bottom plate, the kettle casing provided at its rear side with outwardly projecting hollow columns and with inwardly projecting lugs, and the top plate, of a horizontal shield resting on said lugs and provided with perforated ears which project into the hollow columns and tie rods arranged with said columns and passing through said ears, substantially as set forth. 2nd. The combination with the bottom plate of the furnace, the side walls, and the grate, of a removable back plate resting upon the bottom plate and against the side walls of the furnace and provided along its lower end with a pocket in which the fire brick rests, substantially as set forth. 3rd. The combination with the bottom plate and the grate of side walls provided with inwardly projecting lugs separated by open spaces, and a removable back plate having laterally projecting lugs which rest against the lugs of the side walls when the back plate is in its normal position and which can be withdrawn through the spaces between said lugs upon raising the back plate, substantially as set forth. 4th. The combination with the front plate having the front portion of the corner column cast integrally therewith, of a kettle casing composed of two parts, each having the upper inner portion of a corner column cast integrally therewith, and a side plate secured at its upper edge to the kettle casing and having the lower inner portions of two corner columns forming embayments in the kettle casing opening inwardly, substantially as set forth.

No. 42,784. Steam Motor. (*Moteur à vapeur.*)

Edgar Ambrose Edwards and Charles J. Doughty, both of Cincinnati, Ohio, U.S.A., 29th April, 1893; 6 years.

Claim.—1st. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having grooves in their adjacent faces, substantially as described. 2nd A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having grooves on their adjacent faces, which grooves correspond in radial distance from the centre of the wheel and plates, substantially as described. 3rd. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having rings in their adjacent faces, the rings in the wheel and plate corresponding in radial distance from the centres of the wheel and plates, substantially as described. 4th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having alternate rings and grooves in their adjacent faces, substantially as described. 5th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having on their adjacent faces two series of rings, one series being complete rings, and the other series being composed of segments, substantially as described. 6th. A moter comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates having alternate grooves and rings on their adjacent faces, each alternate ring on each face being composed of segments, substantially as described. 7th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates each having two series of rings on their adjacent faces, one series of complete rings, and the other series made up of segments, the rings on the wheel and plates being arranged so that the segmental rings on the wheel correspond with the complete rings on the plates, substantially as described. 8th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates each having segmental rings on their adjacent faces, the segments of one having inclined ends arranged in a direction reverse to the inclined ends of the segments on the other, substantially as described. 9th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates being provided on their adjacent faces with annular grooves and rings, and inclined grooves connecting two adjacent annular grooves, substantially as described. 10th. A motor comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with, or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plates each having a series of annular grooves corresponding to each other, and each having two series of rings, one series of complete annular rings, and a second series of rings composed of segments, the arrangements being such that the segments on the wheel correspond with the complete rings on the plates, and *vice versa*, substantially as described. 11th. A motor, comprising plates, one of which plates is supported upon the outer or free end of the hub, which hub is formed integral with or rigidly secured to the engine case, and a wheel rotating between the plates, the wheel and plate being each provided with two series of rings on their adjacent faces, one series of complete rings and an intermediate series of rings composed of segments, the ends of the segments being inclined, the arrangement being such that the segmental rings on the wheel correspond to the complete rings on the plates, and the end of the segments on the wheel are inclined in an opposite direction to the ends of the segments on the plates, substantially as described. 12th. In a motor, a case, plates supported in said case, one of which plates is supported upon the outer or free end of a hub, which hub is formed integral with or rigidly secured to the engine case, a rotating shaft and a wheel carried by said shaft and rotating between the plates, substantially as described. 13th. In a motor, a case, plates supported in said case, one of which plates is supported upon the outer or free end of a hub, which hub is formed integral with or rigidly secured to the engine case, a shaft supported in said case, a wheel connected to said shaft and rotating between the plates, the plates and wheel being provided with grooves on their adjacent faces, substantially as described. 14th. A motor, comprising plates, a shaft, a carrier mounted on the shaft, and a wheel connected to the carrier having radially extending portions and rotating between the plates, substantially as described. 15th. In a motor, a case, plates supported in said case, a shaft, a carrier mounted on said shaft, and having a laterally extending flange and a wheel connected to said flange and rotating between the plates, substantially as described. 16th. A motor, comprising plates and a wheel rotating between the plates, supports for the wheel at or near the periphery thereof, substantially as described. 17th. A motor, comprising plates and a wheel rotating between the plates, rings mounted on the plates and laterally adjustable thereon, and arranged to control the clearance between the rotating wheel and plates, substantially as described. 18th. In a motor comprising stationary and rotary parts, means for accurately adjusting the clearance between the parts comprising a ring or rings screw threaded, and having division marks, whereby a practical micrometer adjustment between the parts and ring or rings may be obtained, substantially as described. 19th. In a motor, a case having heads, a hub connected to one of the heads, plates mounted on the hub, a shaft passing through the hub, and a wheel supported on said shaft, and rotating between the plates, substantially as described. 20th. In a motor, a case having heads, a hub connected to one of the heads, a steam inlet passage in the head, a steam passage through the hub, plates carried by the hub, a shaft and wheel carried thereby and rotating between the plates, and steam passages arranged in the adjacent faces of the wheel and plates, substantially as described. 21st. In a motor, a case having

heads, provided with bearings for the shaft, a hub connected to one of the heads, a plate formed integral with the hub, a second plate mounted on the hub, steam passages through the hub connected with an inlet passage to the case, a wheel mounted on the shafts and rotating between the plates, and steam passages arranged in the adjacent faces of the wheel and plates, and adjusting devices for controlling the clearance between the wheel and plates, substantially as described. 22nd. In a motor, the fixed plates having steam passages in their faces, a wheel rotating between the plates and having steam passages in its faces adjacent to the plates, a carrier for the wheel and adjustable clearance devices on the plates, the arrangement being such that the rotating wheel will automatically adjust itself in accordance with the difference in pressure of the steam on its opposite sides to compensate for lateral displacement, substantially as described. 23rd. In a steam motor having a rotating wheel with opposite grooved surfaces for the passage of the propelling jets and steam, and connections between the spaces on opposite sides of the wheel to allow the steam to pass from one side to the other, substantially as described. 24th. A motor comprising fixed plates and an intermediate propelling wheel, the plates and wheel having grooves in their adjacent faces, and passages connecting the grooves on the opposite sides of the wheel, substantially as described. 25th. A motor comprising fixed plates and an intermediate propelling wheel rotating between the plates and passages extending through the wheel connecting the spaces on the opposite sides of the wheel, substantially as described. 26th. A motor comprising stationary plates and intermediate rotating wheel, the shaft of which wheel is provided with means for adjusting the same longitudinally, substantially as described. 27th. A motor comprising plates and a wheel between the plates, a shaft carrying the wheel, sleeves supporting the shaft, and means for adjusting the sleeves, substantially as described.

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

2939. JOSEPH REHM, 2nd five years of No. 28,970, from the 19th day of April, 1893. Improvements in Steam Traps, 1st April, 1893.

2940. NOAH W. HOLT, 2nd five years of No. 28,807, from the 4th day of April, 1893. Improvements on Separating Machines, 4th April, 1893.

2941. ALONZO T. TEAKLES, 2nd five years of No. 28,903, from the 14th day of April, 1893. Improvements on Horse Detachers for Vehicles, 4th April, 1893.

2942. THE DOMINION CLOTHES PIN COMPANY (assignees) 2nd five years of No. 28,832, from the 7th day of April, 1893. Improvements in Clothes Pins, 6th April, 1893.

2943. LEWIS FRANCIS, 3rd five years of No. 16,620, from the 7th day of April, 1893. Improvements on Step Ladders, 6th April, 1893.

2944. SAMUEL D. FORBES, 2nd five years of No. 28,854, from the 10th day of April, 1893. Improvements in Carriage Wheels, 10th April, 1893.

2945. GEORGE D. BURTON, 2nd five years of No. 28,867, from the 11th day of April, 1893. Improvements on Stock Cars, 10th April, 1893.

2946. MILO COVEL, 2nd five years of No. 28,898, from the 14th day of April, 1893. Improvements in a Saw Sharpening Machine, 10th April, 1893.

2947. THE MICHIGAN STOVE COMPANY (assignees), 2nd five years of No. 28,913, from the 14th day of April, 1893. Improvements in Stoves, 10th April, 1893.

2948. JOHN T. SMITH and DUNCAN HENDERSON, 2nd five years of No. 29,006, from the 25th day of April, 1893. Improvements in Automatic Oilers 10th April, 1893.

2949. DUNBAR D. MUTER, JOHN G. MEIGGS and LLOYD S. BAXENDALE, 2nd five years of No. 29,196 from the 19th day of May, 1893. Improvements in Colour Printing Machines, 11th April, 1893.

2950. ANATOLE E. DECOUFLE, 2nd five years of No. 28,917. from the 16th day of April, 1893. Improvements in Machines for the Manufacture of Cigarettes, 12th April, 1893.

2951. THE E & C. GURNEY COMPANY (assignees), 2nd five years of No. 29,007, from the 25th day of April, 1893. Improvements in Platform Scales 14th April, 1893.

2951½. THE MASON & RISCH VOCALION COMPANY, (assignees), 2nd five years of No. 28,929, from the 16th day of April, 1893. Improvements in Reed Organs, 15th April, 1893.

2952. THE INTERNATIONAL PLOW COMPANY, (assignees), 2nd five years of No. 28,951, from the 18th day of April, 1893. Improvements in Snow Plows, 17th April, 1893.

2953. HUGO MATTULOTH, 2nd five years of No. 28,933, from the 17th day of April, 1893. Improvements in Barrels and Barrel Hoops, 17th April, 1893.

2954. FOWLER A. BRANDENBURG, 2nd five years of No. 28,939, from the 17th day of April, 1893. Improvements in Carriage Curtains, 17th April, 1893.

2955. MICIAH WALKER, 2nd five years of No. 29,149, from the 11th day of May, 1893. Improvements on Shut Off Boxes, 17th April, 1893.

2956. THE BALL ELECTRIC LIGHT COMPANY (assignees), 2nd five years of No. 28,975, from the 19th day of April, 1893. Improvement in the Armature of an Electric Machine, 18th April, 1893.

2957. EDWARD V. GARDNER, 3rd five years of No. 16,832, from the 11th day of May, 1893. Improvements in the manufacture of White Lead, and in the manufacture of Carbonic Acid Gas, suitable for use in this and other processes, and in apparatus employed in such manufacture of White Lead, parts of which apparatus are applicable to other purposes, 18th April, 1893.

2958. ROBERT J. QUIGLEY, 2nd five years of No. 28,991, from the 23rd day of April, 1893. Improvements in Watch Cases, 20th April, 1893.

2959. THE GUELPH CARRIAGE GOODS COMPANY, (assignees), 3rd five years of No. 16,762, from the 24th day of April, 1893. Improvements on Machines for Forming Carriage Axles, 22nd April, 1893.

2960. ALPHEUS HAMLIN, 2nd and 3rd six years of No. 41,949, from the 13th of February, 1899. Improvements in Churns, 24th April, 1893.

2961. GEORGE W. TRIPP, 2nd five years of No. 29,145, from 11th day of May, 1893. Improvements in Adjustable Stools and Chairs, 24th April, 1893.

2962. GOTTLIEB DAIMLER, 2nd five years of No. 29,166, from the 7th day of May, 1893. Apparatus for effecting Marine Propulsion by Gas and Petroleum Motor Engines, 25th April, 1893.

2963. CARL G. P. DE LAVAL, 2nd five years of No. 29,055, from the 1st day of May, 1893. Improvements in Apparatus for Supporting and Working Centrifugal Machines such as Cream Separators and the like by hand power, 25th April, 1893.

2964. SIMON S. FAX, 2nd five years of No. 29,058, from the 1st day of May, 1893. Improvements in Vehicle Gearing, 25th April, 1893.

2965. AUGUST GRAEMIGER, 2nd five years of No. 29,102, from the 7th day of May, 1893. Improvements in Process of and Apparatus for Dyeing, Scouring, Bleaching and otherwise treating yarn in Cops, 25th April, 1893.

2966. HENRY S. CANE, 2nd five years of No. 29,029, from the 28th day of April, 1893. Improvements in Syrup Pails, 25th April, 1893.

2967. THOMAS W. HELLIWELL, 2nd five years of No. 29,168, from the 17th day of May, 1893. Improvements in Glazed Roofs, 25th April, 1893.

2968. THE NATIONAL WEIGHING MACHINE COMPANY, 2nd five years of No. 29,151, from the 12th day of May, 1893. Improvements in Weighing Machines, 27th April, 1893.

2969. EDWARD S. T. KENNEDY, 2nd five years of No. 29,141, from the 11th day of May, 1893. Improvements in Radial Tube Steam Boilers, 27th April, 1893.

2970. LEWIS F. BETTS, 2nd five years of No. 29,140, from the 11th day of May, 1893. Improvements in Tubular Lanterns, 29th April, 1893.

2971. GEORGE DURAND and RICHARD BRIERLEY, 2nd five years of No. 29,070, from the 2nd day of May, 1893. Improvements in Covers for Pots, Kettles, Pails, &c., 29th April, 1893.

2972. GEORGE H. NICKOLS, WILLIAM H. NICHOLS and JOHN B. F. HERRESHOFF, 3rd five years of No. 16,819, from the 5th day of May, 1893. Improvements on Copper Smelting Furnaces, 29th April, 1893.

TRADE MARKS

Registered during the month of April, 1893, at the Department of Agriculture—Copyright and Trade Mark Branch.

4590. JOSEPH MIZAEL FORTIER, of Montreal, Que. Cigars, 4th April, 1893.

4591. ABNER J. TOWER, of Brookline, Mass., U.S.A. Oiled Clothing, 4th April, 1893.

4592. ARCHIBALD JOHN THOMPSON, JOHN SHERIDAN and LORENZO FORREST, of Toronto, Ont., trading as THE EUDO MINERAL WATER COMPANY. Mineral Waters, 4th April, 1893.

4593. }
4594. } THE LIGGETT & MYERS TOBACCO COMPANY., of St. Louis, Missouri,
4595. } U.S.A. Tobacco in all forms, 4th April, 1893.
4596. }

4597. FRANK MELVILLE HANNUM, of Ottawa, Ont. Corn and Bunion Remover, 7th April, 1893.

4598. THE FORBES MANUFACTURING COMPANY, of Halifax, N.S. Skates, 7th April, 1893.

4599. }
4600. } THE DRUMMOND TOBACCO COMPANY, of St. Louis, Missouri, U.S.A.
4601. } Tobacco in all forms, 7th April, 1893.

4602. CHASE & SANBORN, of Boston, Mass., U.S.A. Coffee, 10th April, 1893.

4603. PAUL MESSNER, of Trossengen, Wurtemburg, Germany. Mouth Organs, 10th April, 1893.

4604. THE LIGGETT & MYERS TOBACCO COMPANY, of St. Louis, Missouri, U.S.A. Tobacco in all forms, excepting Cigars, 11th April, 1893.

4605. } THE JOHANNIS COMPANY, LIMITED, of 25 Regent Street, London,
4606. } England. Mineral and Aerated Waters, Natural and Artificial, including Ginger Beer, 11th April, 1893.

4607. THE VAPO-CRESOLENE COMPANY, of Stanley, Morris County, New Jersey, U.S.A. Medical Compounds and Apparatus, particularly Vaporizers, Volatilizers, Deodorizers, Disinfectors, and Perfumers, and to Compounds to be used in connection with such devices, 12th April, 1893.

4608. FRANK S. CULVER, of Williamsport, Lycoming County, Pennsylvania, and THOMAS J. KING, of Washington, District of Columbia, U.S.A. Fire-Proof Backing Slabs and Sheets and Fire-Proof Material, 12th April, 1893.

4609. THE STANDARD OIL COMPANY, of Cleveland, Ohio, U.S.A. Cylinder Oils, 20th April, 1893.

4610. THE STANDARD OIL COMPANY, of Cleveland, Ohio, U.S.A. Cylinder and Valve Oils, 20th April, 1893.

4611. THE STANDARD OIL COMPANY, of Cleveland, Ohio, U.S.A. Illuminants, 20th April, 1893.

4612. THE STANDARD OIL COMPANY, of Cleveland, Ohio, U.S.A. Machine Oils, 20th April, 1893.

4613. THE STANDARD OIL COMPANY, of Cleveland, Ohio, U.S.A. Lubricants, 20th April, 1893.

4614. LEMUEL L. BEER and E. HUBERT BEER, of Charlottetown, P. E. Island. Potash or Lye, 21st April, 1893.

4615. THE DOMESTIC SEWING MACHINE COMPANY, of New York, N.Y. U.S.A. Sewing Machines and parts thereof, 21st April, 1893.

4616. THE DOMINION SANITARY POTTERY COMPANY, of St. Johns, Que. Sanitary and Plumbers' Earthenware, 21st April, 1893.

4617. EDWARD ADAMS & COMPANY, of London, Ont. Tea, 21st April, 1893.

4618. HUGH McKAY & COMPANY, of London, Ont. Cigars, 21st April 1893.

4619. JOHN AND ROBERT HARVEY & COMPANY, of Dundashill, Glasgow, Scotland. Whiskey, 24th April, 1893.

4620. JOHN MADDOCKS, of 27 Canal Road, Bradford, England. General Trade Mark, 29th April, 1893.

4621. GEORGE CLINTON MORTON ALLWORTH, of Aylmer, Ont. Condensed Milk, 29th April, 1893.

COPYRIGHTS

Entered during the month of April, 1893, at the Department of Agriculture—Copyright and Trade Mark Branch.

6864. THE MAN THAT BROKE THE BANK AT MONTE CARLO. Words and Music by Fred Gilbert. Arranged by Alfred Leggett. The Anglo Canadian Music Publishers' Association, Ld., London, England, 1st April, 1893.

6865. THE HOTEL REGISTER, with THE DOMINION OF CANADA HOTEL GUIDE incorporated therewith. Davis & Henderson, Toronto, Ont., 4th April, 1893.

6866. MAP OF THE TOWN OF LARDO, KOOTENAY LAKE, BRITISH COLUMBIA. John L. Retallack, Kaslo, B.C., 4th April, 1893.

6867. THE SCANDINAVIAN CANADIAN, MARCH 30, 1893. (Skandinaviske Canadiensaren.) Emanuel Ohlén, Winnipeg, Man., 4th April, 1893.

6868. IN DAYS OF OLD. Regimental Song. Words by the late Capt. J. B. Young. Music by J. E. P. Aldous. I. Suckling & Sons, Toronto, Ont., 5th April, 1893.

6869. CONSUMPTION: ITS CAUSES AND PREVENTION IN MAN AND ANIMALS. Second Edition, by Edward Playter, M.D., Ottawa, Ont., 5th April, 1893.

6870. EVENING. Part Song, by Esther Talbot Kingswill. Music by Edmund W. Phillips. A. & S. Nordheimer, Toronto, Ont., 5th April, 1893.

6871. GARDEN CITY WALTZES. For Piano, by S. Max Walkinshaw, St. Catharines, Ont., 6th April, 1893.

6872. LA CZARINE. Mazurka Russe, by Louis Ganne.
6873. SERANUS. (Sarabande in G) for Piano, by F. J. Hatton.
6874. SPANISH DANCE, NO. 1. For Piano, by F. J. Hatton.
The Anglo Canadian Music Publishers' Association, Ld., London, England, 6th April, 1893.

6875. THE WORKMEN'S COMPENSATION FOR INJURIES ACT, 1892, WITH COPIOUS NOTES, by George Smith Holmested, Barrister, Toronto, Ont., 6th April, 1893.

6876. A SOLUTION FOR THE PURIFYING OF OUR POLITICAL AFFAIRS—THE DISSOLUTION OF PARTYISM AND THE RASCALLY ELECTIVE SYSTEM. Archibald H. Brintnell, Toronto, Ont., 6th April, 1893.

6877. IN THE SASKATCHEWAN DISTRICT. The Duck Lake District, Illustrated and Described (pamphlet.) Acton Burrows, Winnipeg, Man., 10th April, 1893.

6878. MEDDLERS. Humorous Ditty, by James Fax. Whaley, Royce & Co., Toronto, Ont., 11th April, 1893.

6879. URANIA MARCH. By Chas. Bohner. Whaley, Royce and Co., Toronto, Ont., 11th April, 1893.

6880. TWENTY MINUTES LATE. By Mrs. G. R. Alden ("Pansy.") Wm. Briggs (Book Steward of the Methodist Book and Publishing House), Toronto, Ont., 12th April, 1893.

6881. INSURANCE PLANS OF BEAMSVILLE, BOLTON, DELHI, ERIN, NIAGARA ON THE LAKE, PARRY SOUND, PICKERING, UNIONSVILLE AND WESTON, IN ONTARIO. Charles Edward Goad, Montreal, Que., 12th April, 1893.

6882. WHEN LOVE IS KIND. Words by Thomas Moore, Old Melody, arranged by A. L. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 12th April, 1893.

6883. L'ÉVÊQUE PASCAL DE PRINCE ALBERT (photo). Napoléon Thérien, Québec, Qué., 13 avril, 1893,

6884. THE RIVULET. (A New Dance by W. J. Finney.) INSTRUCTIONS by S. M. Early. Whaley, Royce & Co., Toronto, Ont., 14th April, 1893.

6885. PLAN K, CITY OF WINNIPEG, shewing plans registered in parts of D.G.S. Lots 5 to 11, Parish of St. John. Scale, 200 feet 1 inch. Robt. Chas. McPhillips, Winnipeg, Man., 15th April, 1893.

6886. SERIES OF ILLUSTRATED ADVERTISEMENTS (Thirteen) *re* THE ALBERT TOILET SOAP COMPANY. The Albert Toilet Soap Co., Montreal, Que., 15th April, 1893.

6887. MAP OF THE CITY OF LONDON, CANADA. The Toronto Lithographing Co., Toronto, Ont., 15th April, 1893.

6888. FERDINAND ALLARD, FORGERON, LEVIS, QUE. (photo marqué A). Elzéar Brochu, Lévis, Qué., 15 avril, 1893.

6889. FERDINAND ALLARD, FORGERON, LEVIS, QUE. (photo marqué B). Elzéar Brochu, Lévis, Qué., 15 avril, 1893.

6890. STUART'S POCKET MAP OF VANCOUVER, B.C., 1893. Allan Kilbee Stuart, Vancouver, B.C., 17th April, 1893.

6891. MORBLEU! J'AI CRU QU'ILS ETAIENT DEUX! Chanté par M. Sallard. Aristide Filiatreault, Montreal, Que., 17 avril, 1893.

6892. BOOK OF THE FAMILIES CONSECRATED TO THE HOLY FAMILY OF JESUS, MARY, JOSEPH. J. H. Perreault, Prêtre, Montréal, Qué., 17 avril, 1893.

6893. HILLS' GENERAL LEDGER. Joseph S. Hill, Brigden, Ont., 17th April, 1893.

6894. SCOTTY. Words by John Imrie. Music by W. J. Scott. Imrie & Graham, Toronto, Ont., 19th April, 1893.

6895. VOICES OF THE WOODS. Written and adapted by Michael Watson to a Melody by Rubinstein. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 19th April, 1893.

6896. GENOVEVA WALTZ, by E. Williams. Whaley, Royce & Co., Toronto, Ont., 22nd April, 1893.

6897. SHIRIN. Oriental Dance for Piano. By C. J. Rockwell. Whaley, Royce & Co., Toronto, Ont., 22nd April, 1893.

6898. LATER CANADIAN POEMS. Edited by J. E. Wetherell, B.A. The Copp, Clark Co., Ld., Toronto, Ont., 22nd April, 1893.

6899. REAL ESTATE RECORD, MONTREAL, MARCH, 1893, NUMBER 3. James Cralock Simpson and Henry Lester Putnam, Montreal, Que., 22nd April, 1893.

6900. L'ETOILE MARCH (THE STAR). For Piano by A. W. Hughes. Whaley, Royce & Co., Toronto, Ont., 26th April, 1893.

6901. THE ONTARIO REPORTS, VOLUME XXII. The Law Society of Upper Canada. Toronto, Ont., 26th April, 1893.

6902. ALL THE MEMBERS OF THE HOUSE OF COMMONS OF CANADA, 1893 (photographic group). S. J. Jarvis, Ottawa, Ont., 28th April, 1893.

6903. MAP OF THE SUDBURY MINING DISTRICT. J. B. Hammond and R. McConnell, Sudbury, Ont., 29th April, 1893.

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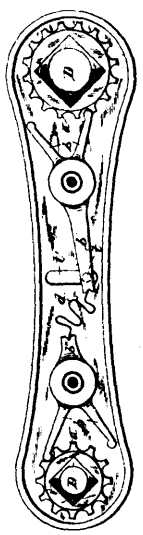
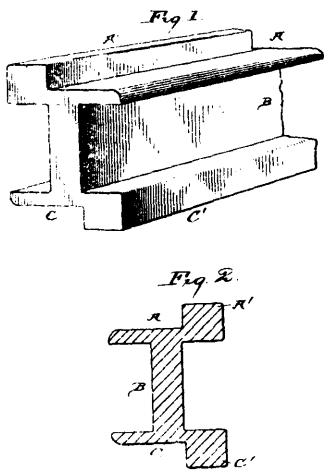


42452 Ayers' Wrench.



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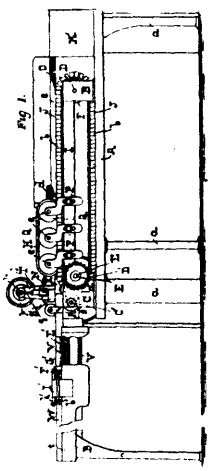
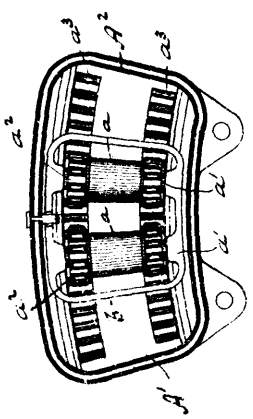
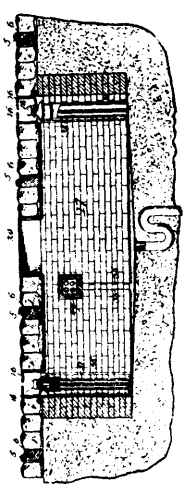


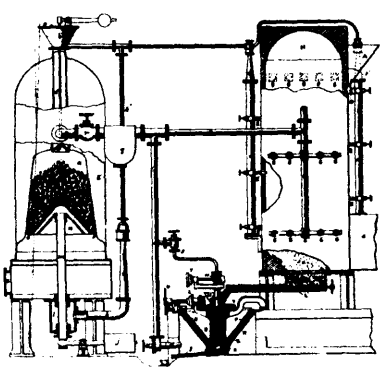
42454 Baron's Machine for making Cigar Fillers.



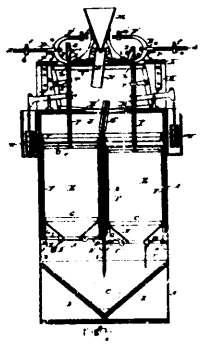
42455 Jewett's Anti Friction Bearing.



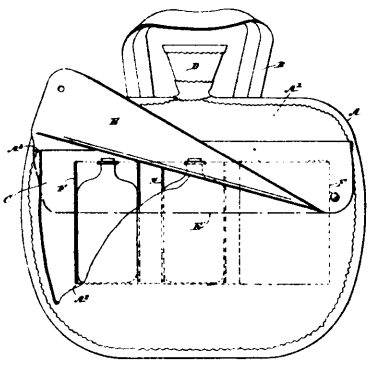
42456 Munsie's Electric Railway.



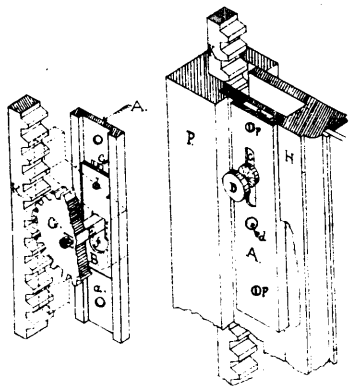
42457 Shedlock and Denny's Apparatus for Extracting Metals from Ores.



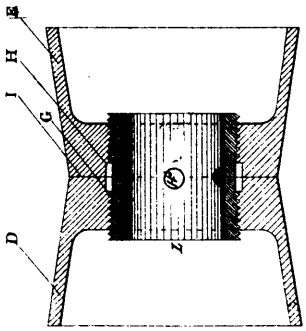
42458 Phillips' Weighing Machine.



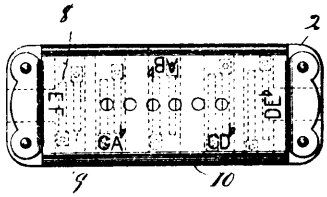
42459 Penniston's Food Warmer.



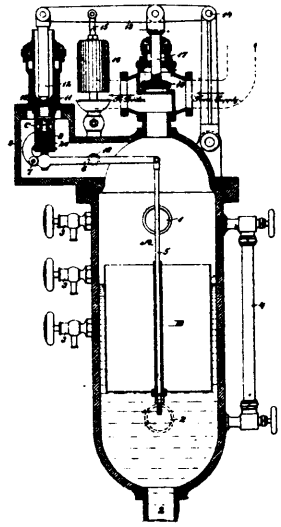
42460 Woodruff and Sharp's Window Lock and Latch.



42461 Manny and Lalonde's Connecting Nipple for Heating Radiators.

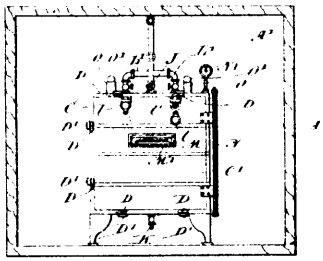


42462 Congdon's Chromatic Pitch Pipe.

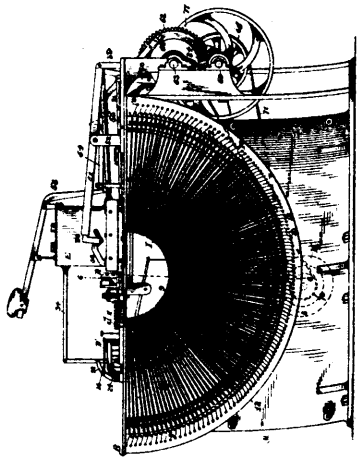


42463 Culver's Safety Boiler Feed.

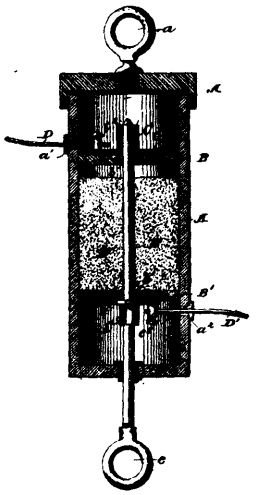
42464 Fuller and Nunn's Cattle Guard.



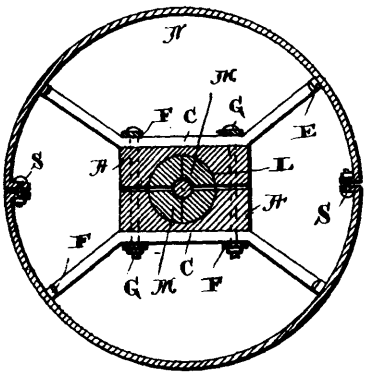
42465 Davis' Disinfector.



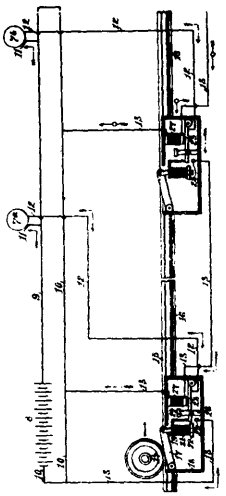
42466 Corsa's Form Setting and Type Casting Machine.



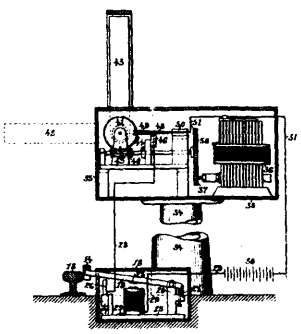
42467 Cleveland's Circuit Controller.



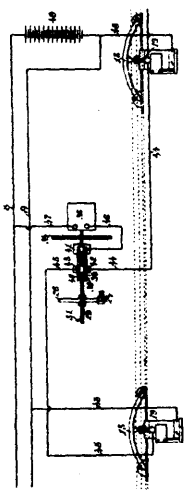
42468 McNeil's Pulley.



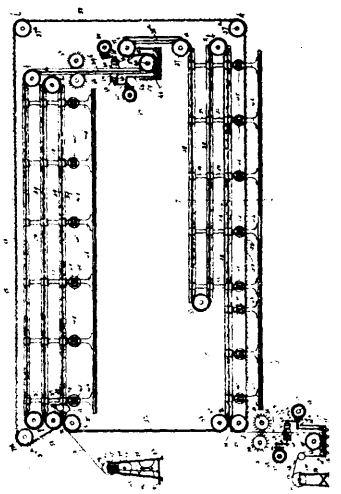
42469 Sheldon's Train Signal for Railways.



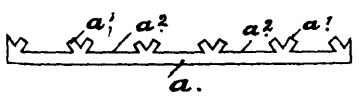
42470 Sheldon's Train Signal for Railways.



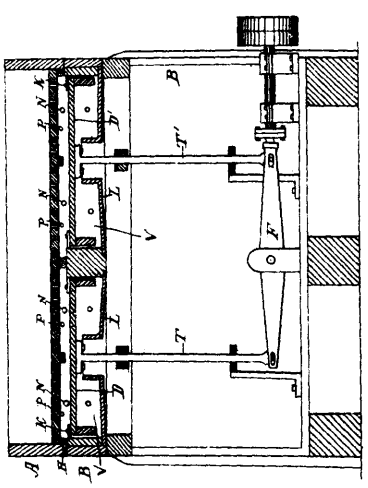
42471 Sheldon's Railway Gate.



42472 Cole's Machine for Painting Fabrics.

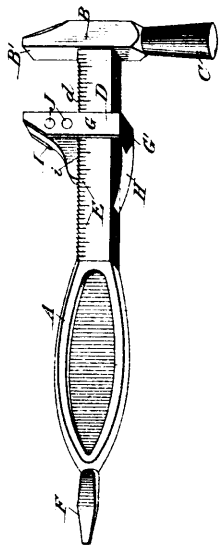


42473 Mason and Codner's Thread for Floors, Stairs, &c.

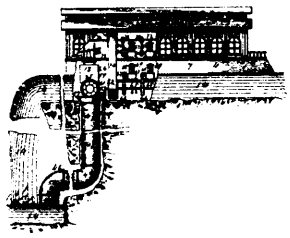


42474 Foster's Pulp Screening Machine.

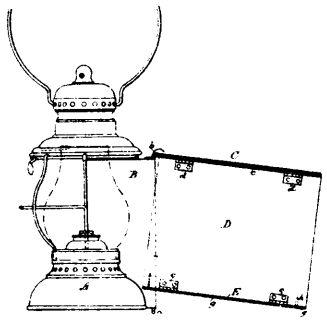
42476 Mounett's Feeding Device for Threshing Machines.



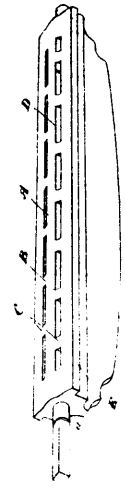
42476 Cochran's Combination Tool.



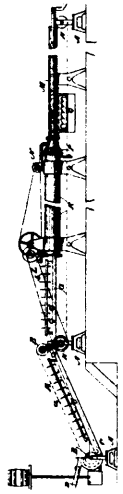
42477 Zeitinger's Device for Utilizing the Water Power of Falls.



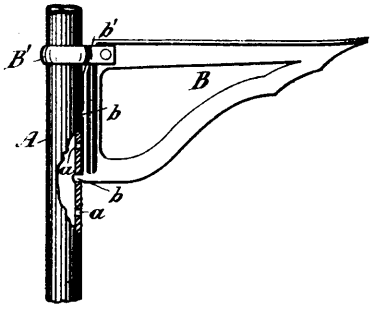
42478 Warner and Navarre's Weather Guard for Lanterns.



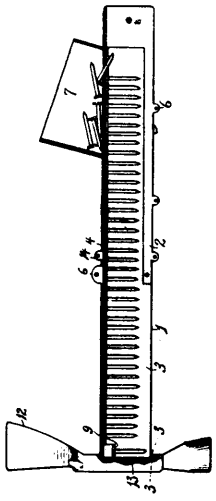
42479 Carl's Furnace Grate.



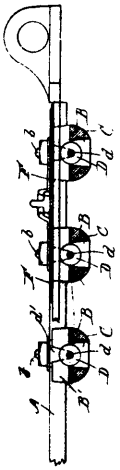
42480 Hume's Can Lacquering Machine.



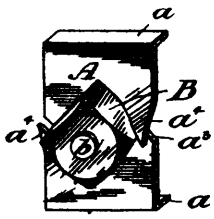
42482 Morden's Shelf Support.



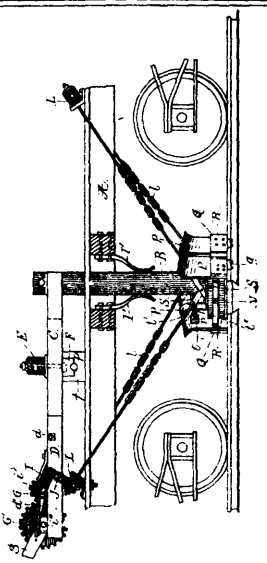
42483 Smith's Hammer and Nail Feeding Device.



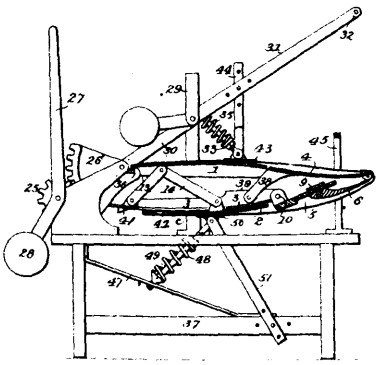
42484 Bamford's Cutter Bar for Mowing Machines.



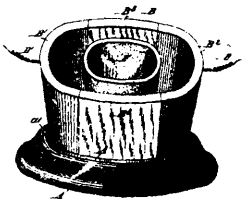
42485 Poole's Nut Lock.



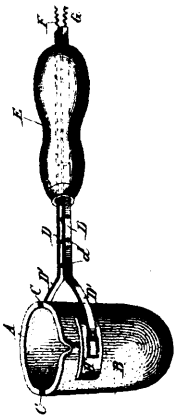
42486 Nevens' Track Flanging and Clearing Machine.



42487 Heisler's Boot Treeing and Crimping Machine.

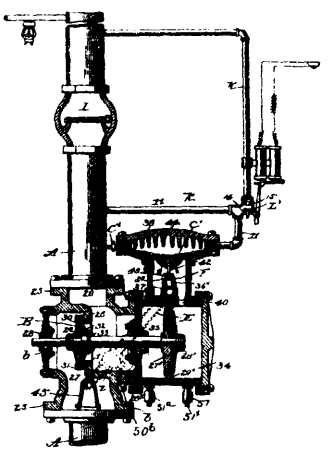


42488 Mitchell's Crucible and Holder therefor.

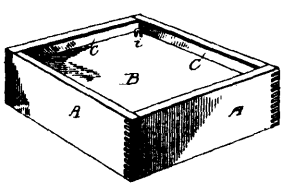


42489 Mitchell's Device for Electrically Heating Crucibles.

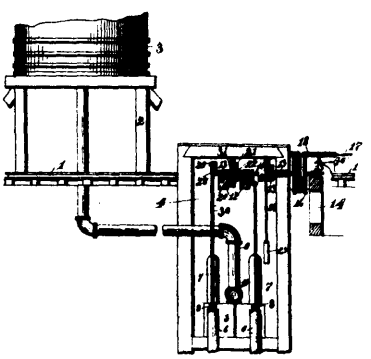
42490 Neff's Wheel.



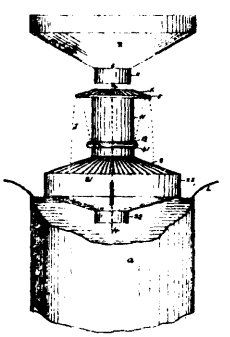
42491 Neracher's Sprinkler.



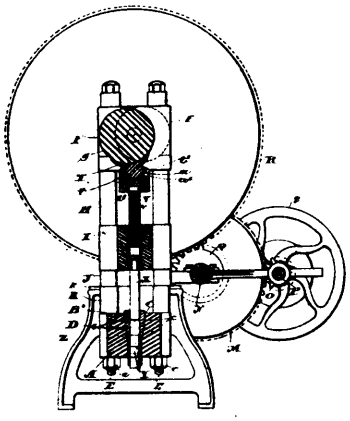
42492 Mengel's Packing Box.



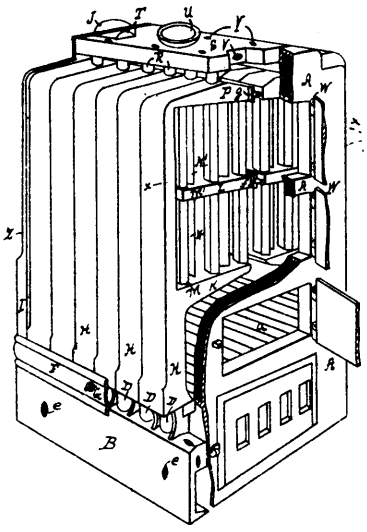
42493 Lyman's Pump.



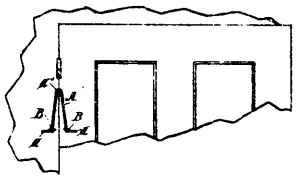
42494 Bartlett's Milk Aerator and Cooler.



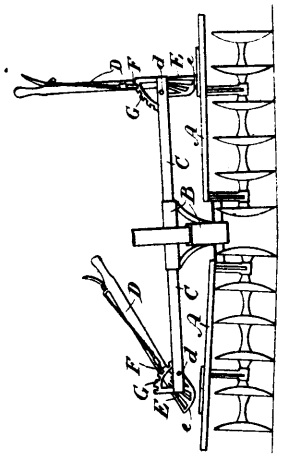
42495 **Doig's Press.**



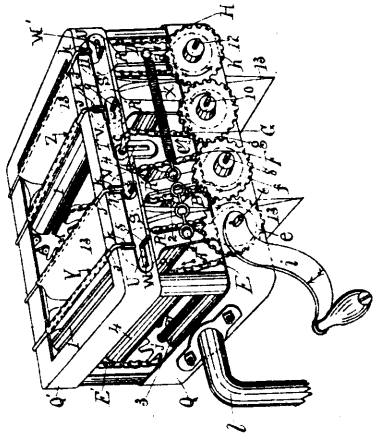
42496 **Smith's Boiler.**



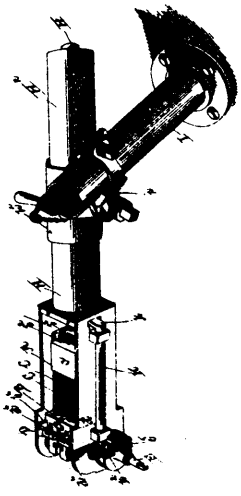
42497 **Bunker's Door Closer.**



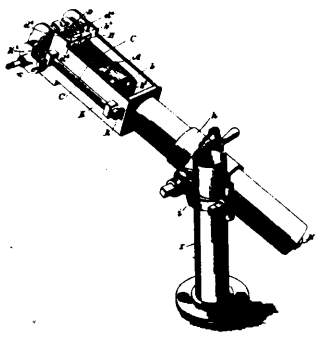
42498 **Millar's Disc Harrow.**



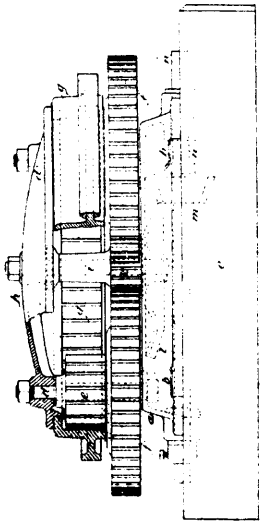
42499 **McCollum and Murphy's Milking Machine.**



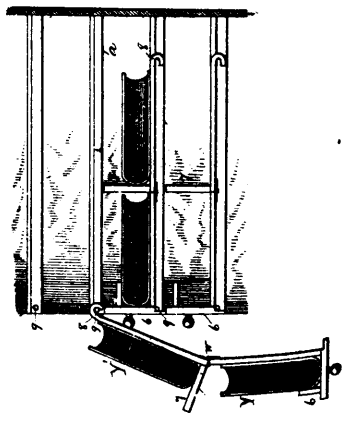
42500 **Moreau's Rock Drill.**



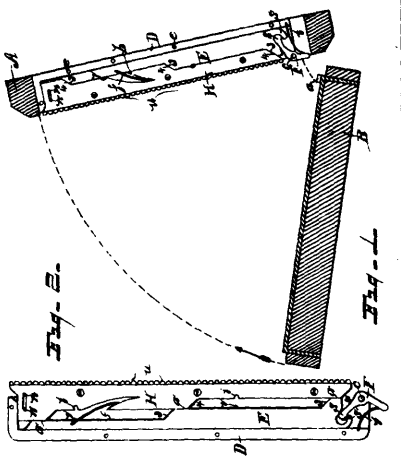
42501 **Moreau's Striking Device.**



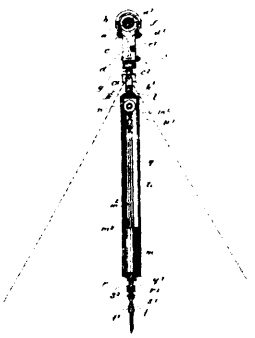
42502 **Lister's Horse Gear.**



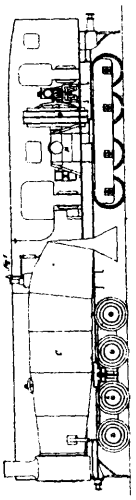
42503 **Foster and Hine's Book Case.**



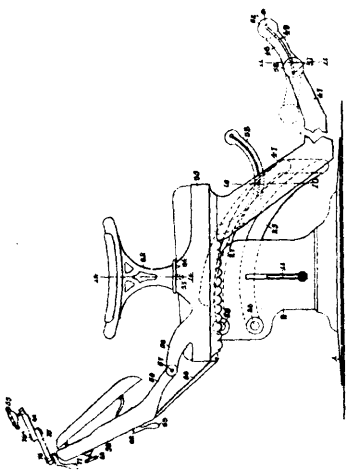
42504 Slocum and Gamble's Perforating Attachment for Printing Presses.



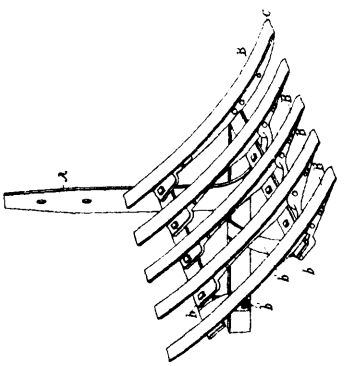
42505 Ross' Shafting.



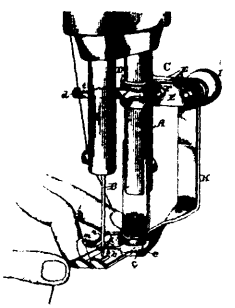
42506 Heilmann's Method of Propelling Railway Vehicles Electrically.



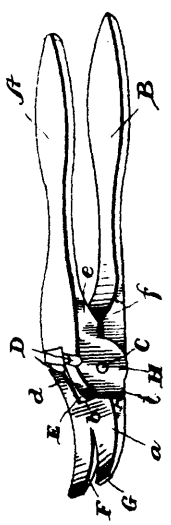
42507 Stuck's Dental Chair.



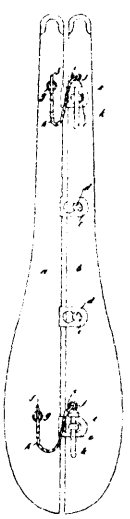
42508 Mitchell's Plow.



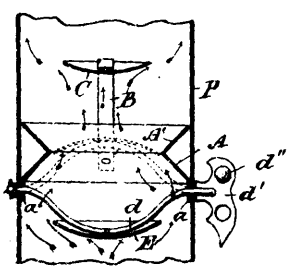
42509 Cook's Needle Threader and Setter.



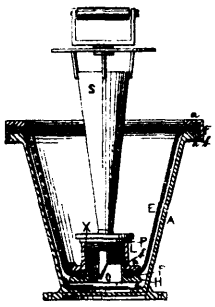
42510 Stetler's Tool for making Wire Fences.



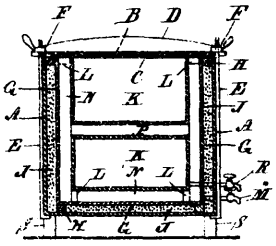
42511 Patterson's Corset.



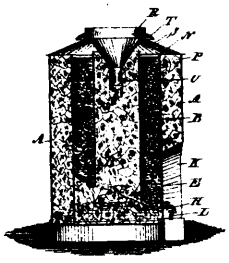
42512 Wilson's Stove Pipe Damper.



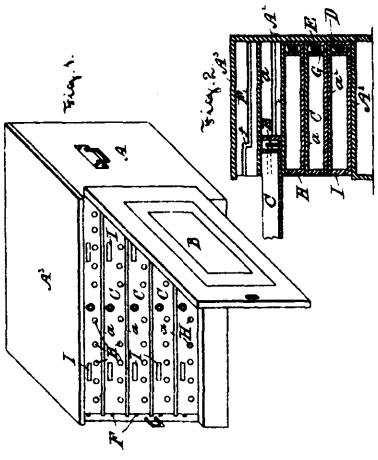
42513 Baker's Bellows.



42514 McIntosh's Cream Cabinet.



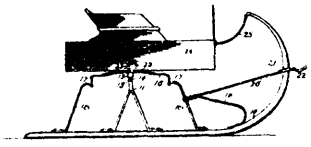
42515 McIntosh's Creamer.



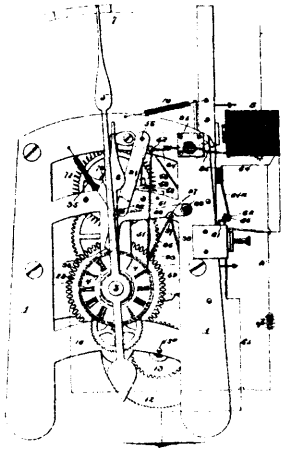
42516 Oswald's Egg Carrier.

42517 Seybold and Brown's Curling Tongs.

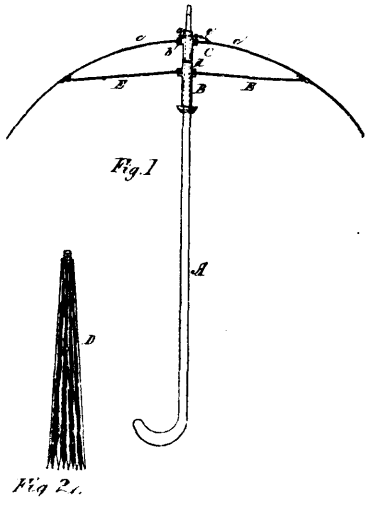
42518 Ziegler's Buckle.



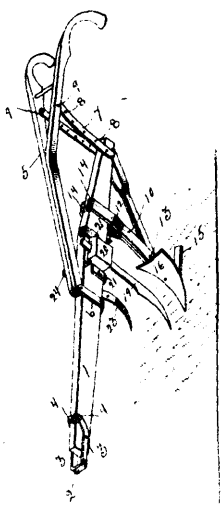
42519 Norman's Sleigh.



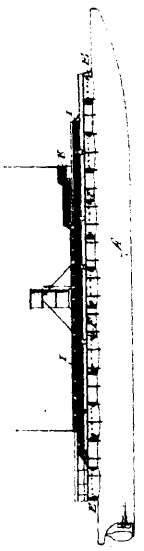
42520 Wiseman's Clock.



42521 Ralston's Umbrella.



42522 Keahey's Plow.

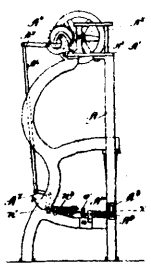


42523 McDougall's Steam Passenger Boat.

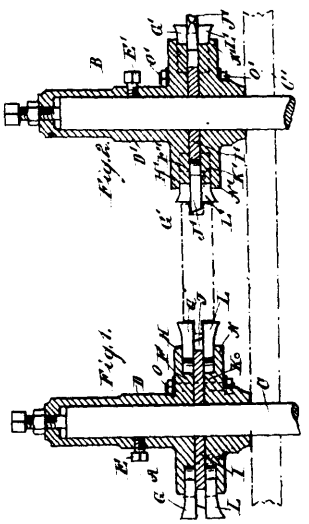
FIG. 1.

FIG. 2.

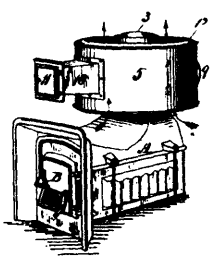
42524 Schmidt's Eye-Glass.



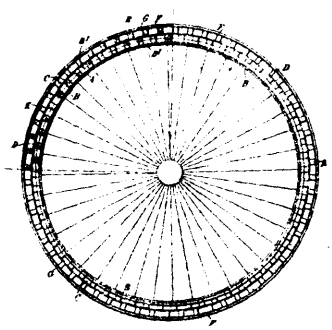
42525 Peare's Sole Sewing Machine.



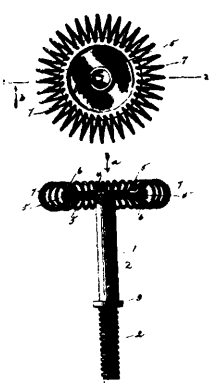
42526 Hardee's Rotary Stock Cutter.



42527 Crossman's Hot Air Furnace Drum.



42528 Dunlop's Spring Tyre for Vehicles.



42529 Prouty's Handle.

Fig. 1.

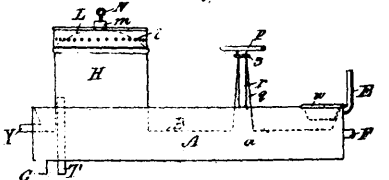
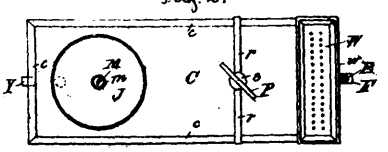
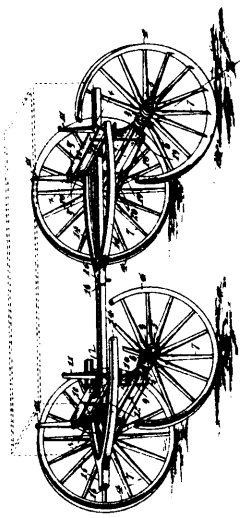


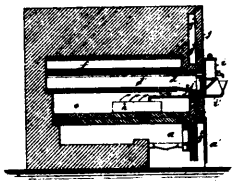
Fig. 2.



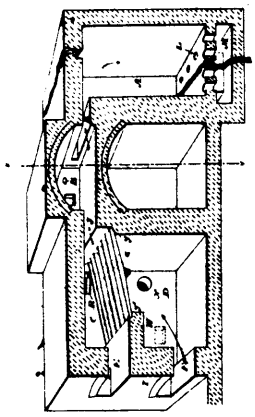
42530 Ryan's Aerator and Cooler for Milk.



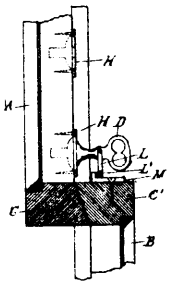
42531 Updegrove's Vehicle Gear.



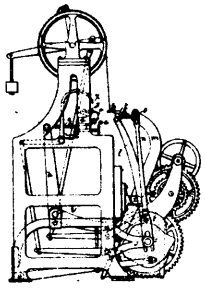
42532 Duhrkoss's Oven.



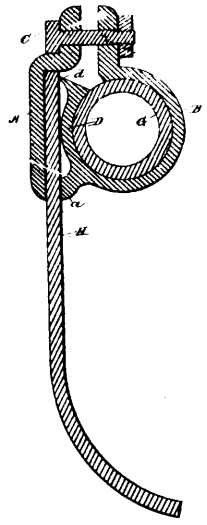
42533 Storie's Apparatus for Annealing Metals.



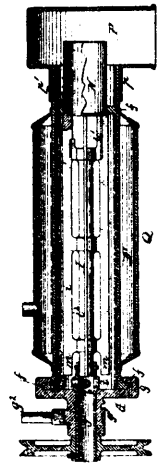
42534 Raymond and North's Sash Fastener.



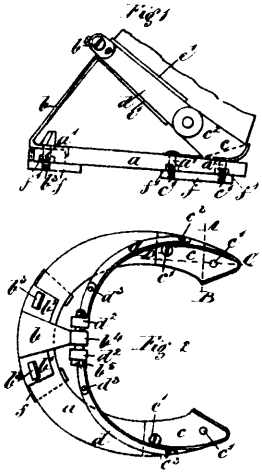
42535 Ireland's Machinery for making Fishing Nets.



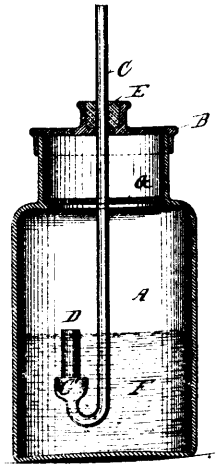
42536 Ulsh's Friction Lamp.



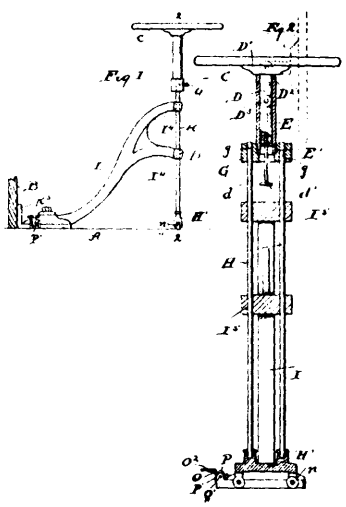
42537 De Laval's Churn.



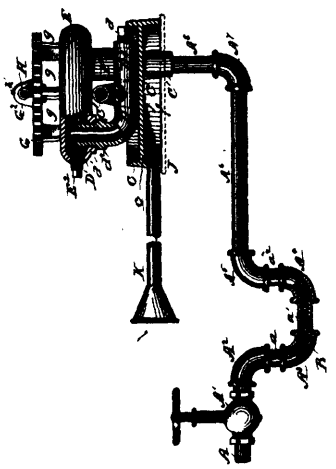
42538 D'Anvers' Device for Attaching Horse Shoes.



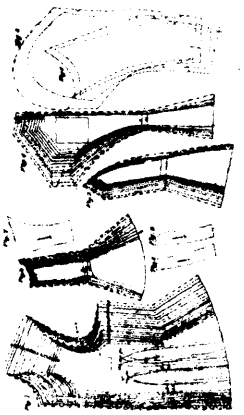
42539 Poulsen's Apparatus for Producing Ozone.



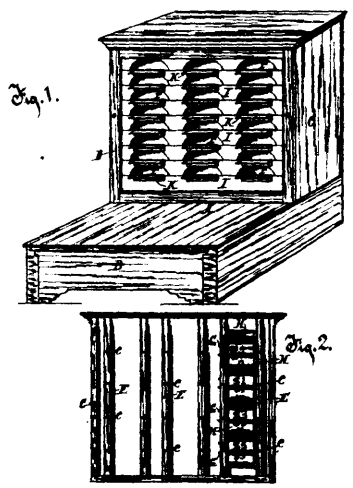
42540 Burrows' Stool.



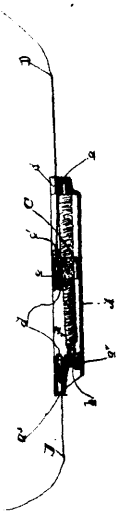
42541 Otis' Burner for Hydrocarbon



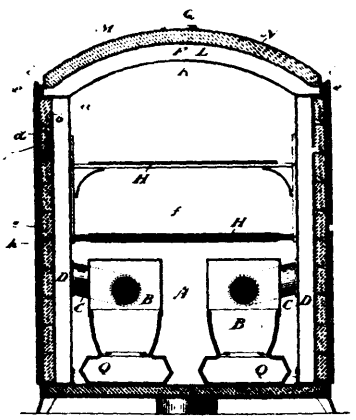
42542 Lehn's System of Cutting Ladies Garments.



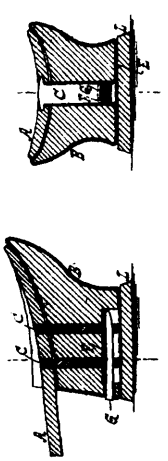
42543 Schener's Money Recording and Receipting Machine.



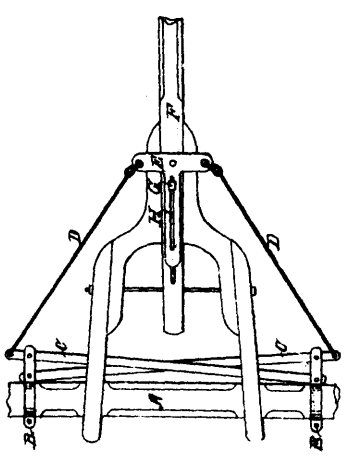
42544 Sparks' Hoop and Band Fastener and Tightener for Barrels, &c.



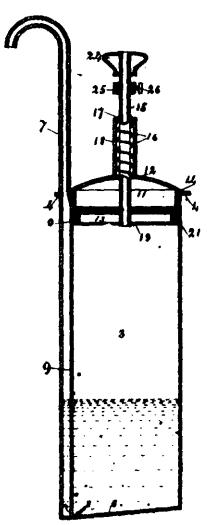
42545 Hubbard's Oven.



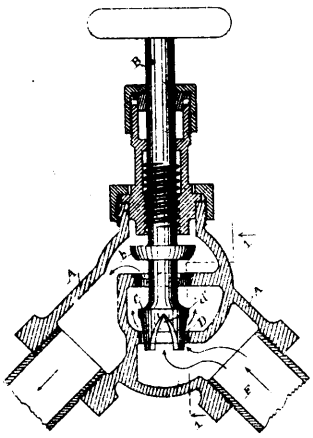
42546 Wise, Weed and Davis' Detachable Heel for Boots and Shoes,



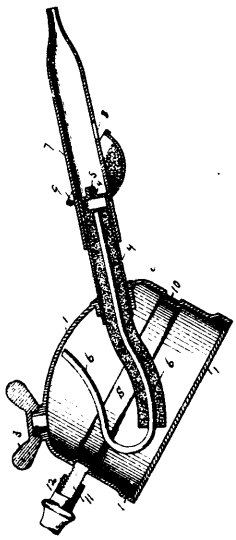
42547 Huber's Contrivance to be Attached to the front Axle and Tongue of a Vehicle.



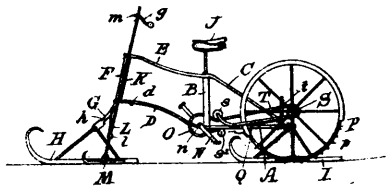
42548 Fletcher's Drinking Fount.



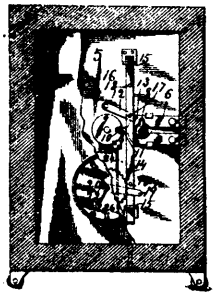
42549 McElroy's Valve.



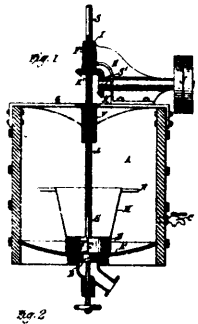
42550 Rhind's Vapour Burning Torch.



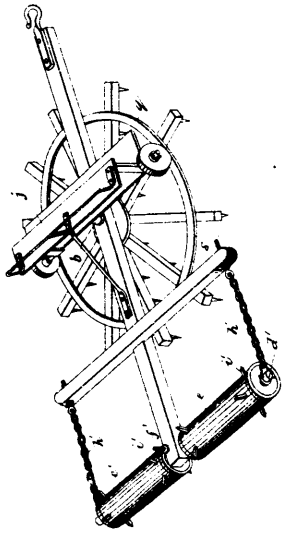
42551 Madon's Ice Velocipede.



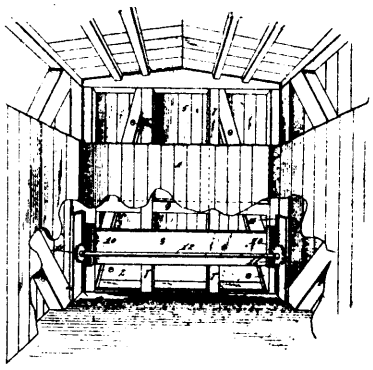
42552 Rees' Time Lock for Safes.



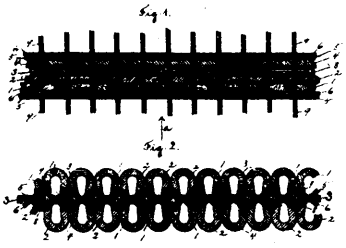
42553 Noble's Process for Amalgamating Gold and Silver with Mercury.



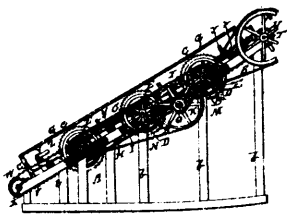
42554 Monroe's Rotary Harrow.



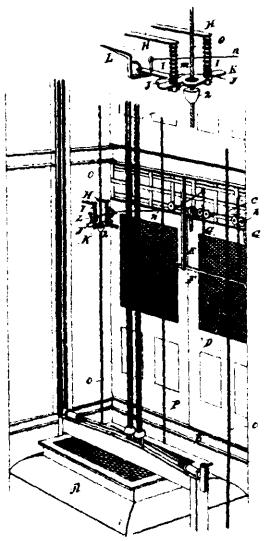
42555 Whitcomb's Grain Car.



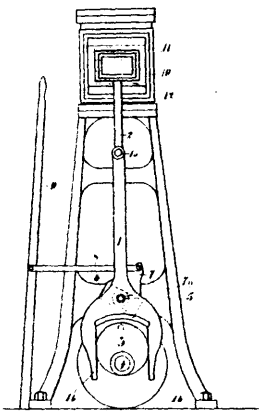
42556 Coley's Woven Pile Fabric.



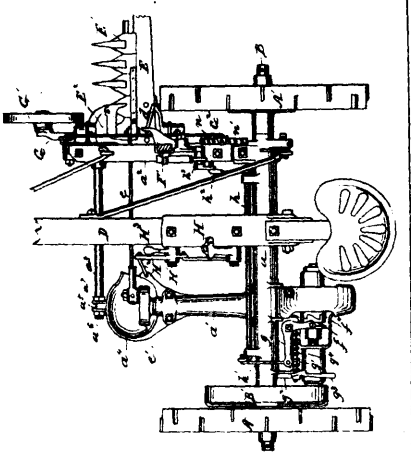
42557 Gateley's Sawing Machine.



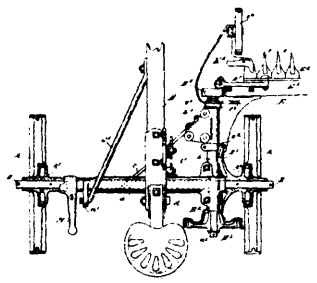
42558 Day's Safety Device for Elevators.



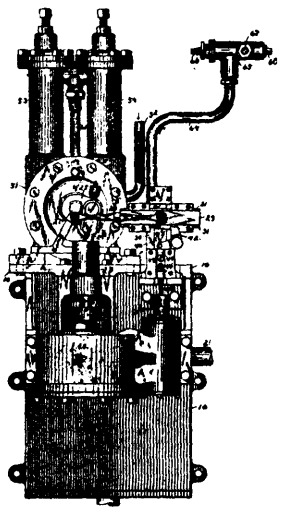
42559 Pitceathly's Reversing Gear.



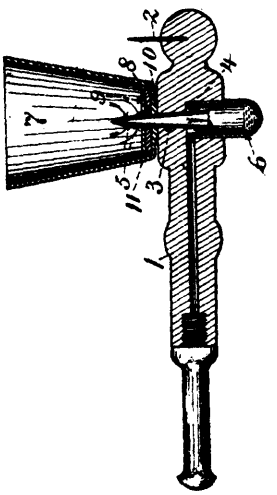
42560 Whitely's Mowing Machine.



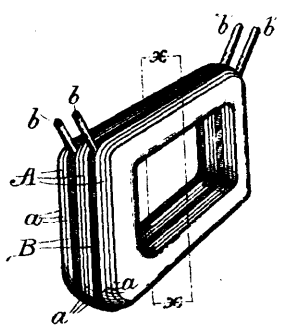
42561 Whitely's Mowing Machine.



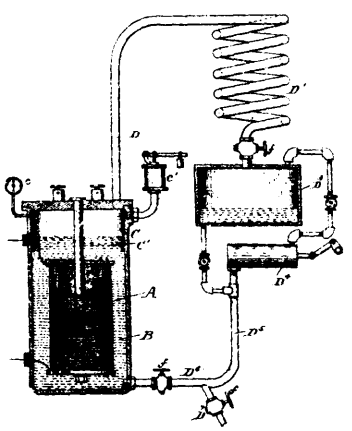
42562 Ballantine's Refrigerator.



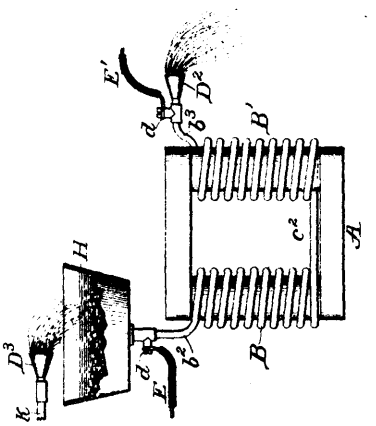
42563 Berger's Pipe.



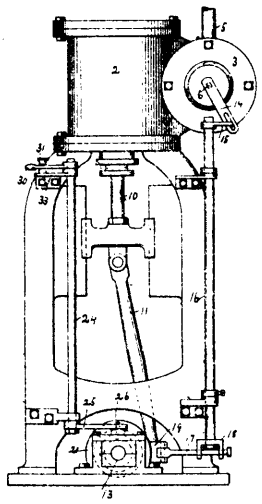
42564 Rowland's Method of Cooling the iron in transformers, &c.



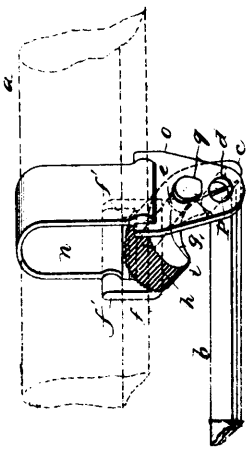
42565 Rowland's Method of Cooling transformers, &c.



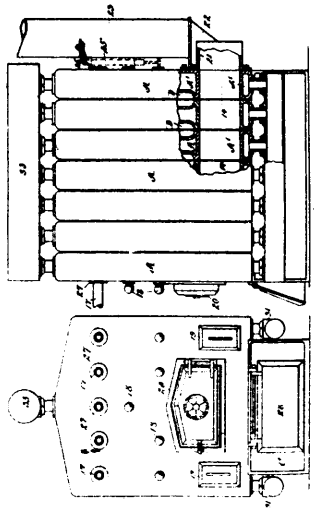
42566 Rowland's Method of Cooling Electrical Conductors.



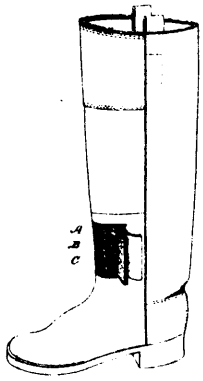
42567 Littlejohn's Valve Gear.



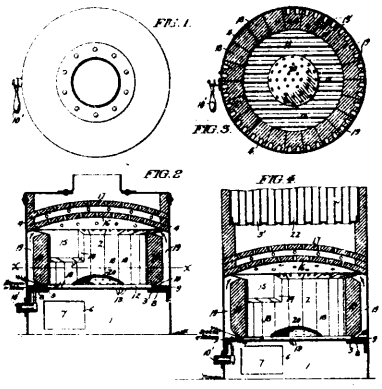
42568 Parker's Hold-back for Vehicles.



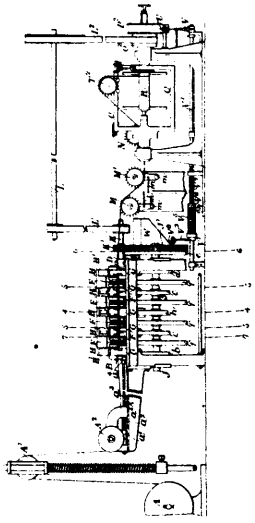
42569 Dietrich's Boiler.



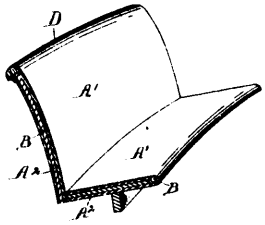
42570 Trotter's Boot and Shoe.



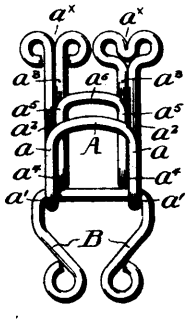
42571 Hutchinson's Stove and Furnace.



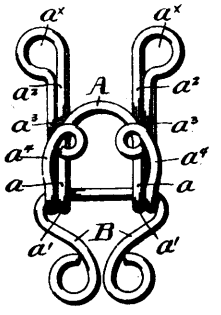
42572 Reid's Wire Barbing Machine.



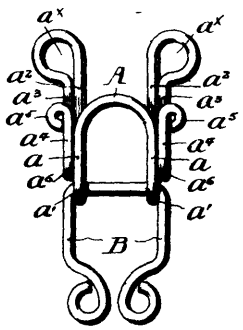
42573 Lancaster's Pew Back.



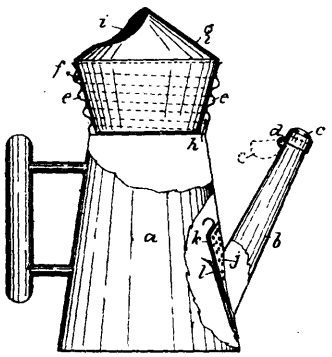
42574 De Long's Garment Hook.



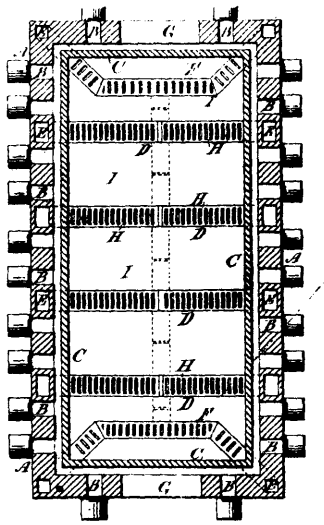
42575 De Long's Garment Hook.



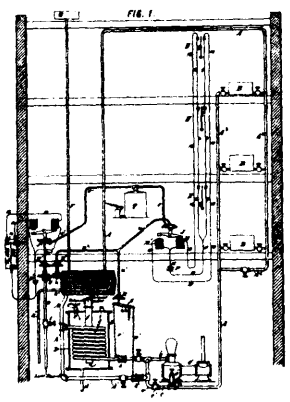
42576 De Long's Garment Hook.



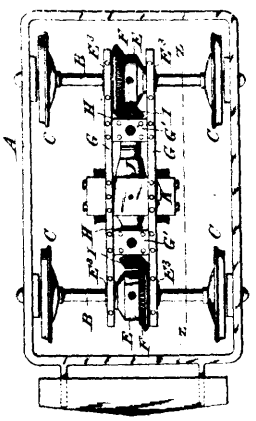
42577 Abell's Coffee Pot.



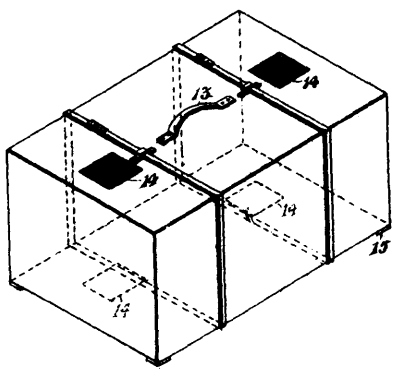
42578 Henney's Brick Kiln.



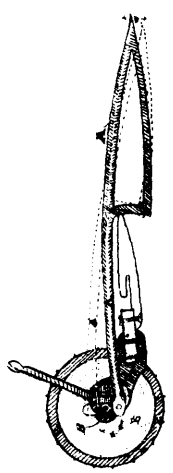
42579 Evans' Heating Apparatus for Buildings.



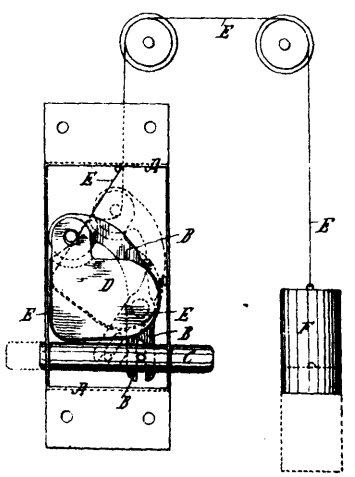
42580 Warfield's Device for Communicating Motion.



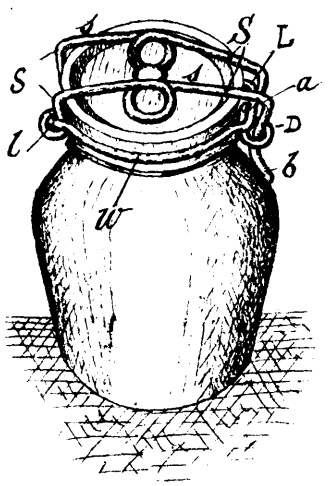
42581 Duval's Lunch Box.



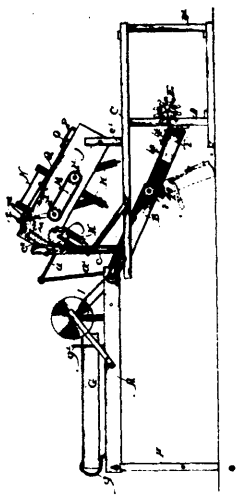
42582 Cosgrove's Pea Cutting Attachment for Harvesters.



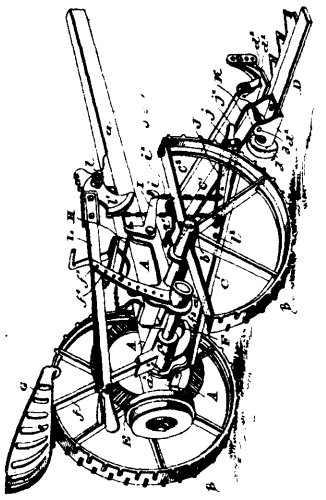
42584 Cathrein's Door Lock.



42585 Farrar's Jar.

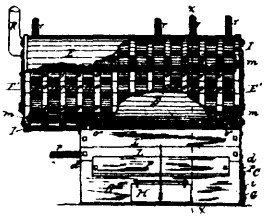


42586 Quintus's Feeding device for Threshing Machines.

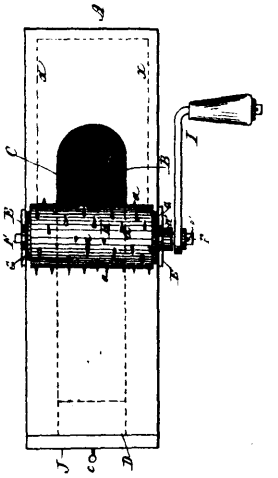


42587 Brown's Mowing Machine.

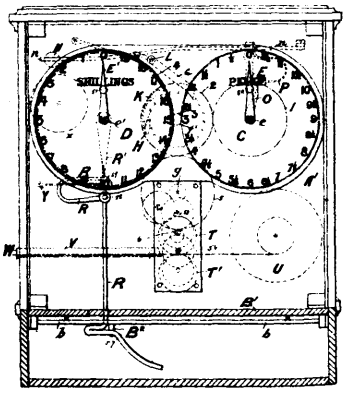
42588 Greenfield and Nagel's Tube.



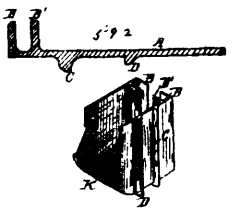
42589 Catchpole's Steam and Hot Water Boiler.



42590 Stuart's Tobacco Cutter.

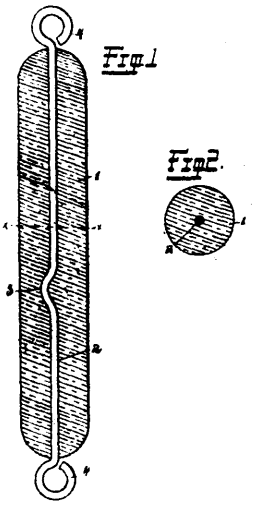


42591 Shakespeare's Cash Register and Recorder.

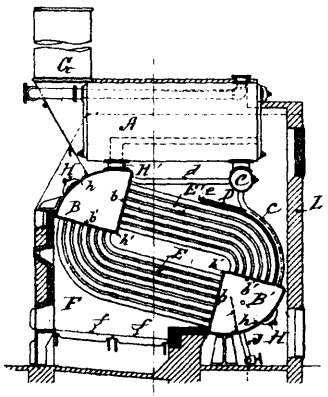


42592 Hughes' Car Journal Box.

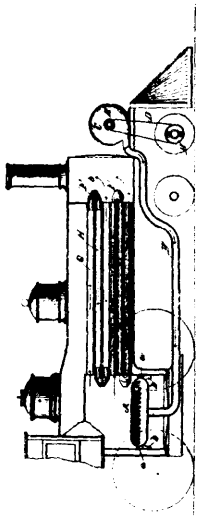
42593 Salzman's Corn Harvester.



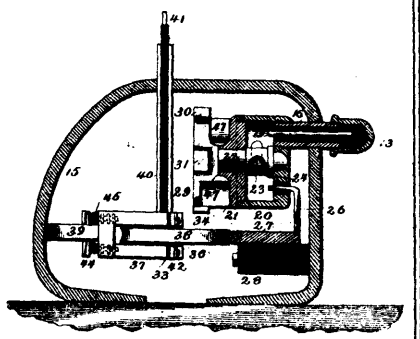
42594 Binehart's Sash Weight.



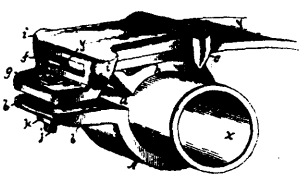
42595 Seller's Water Tube Steam Boiler.



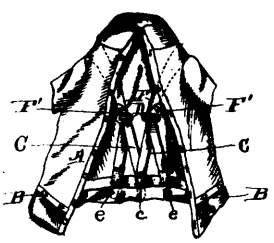
42596 Newlin's Locomotive Boiler.



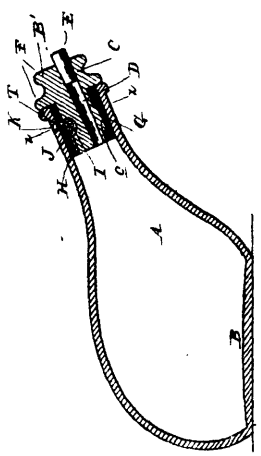
42597 Tatro's Underground Conduit for Electric Railways.



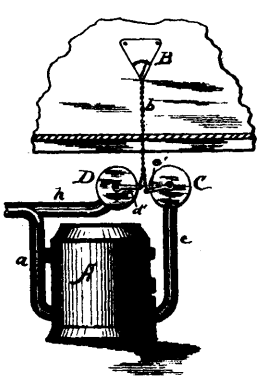
42598 Eisenhart's Holder for Spring Harrow Teeth.



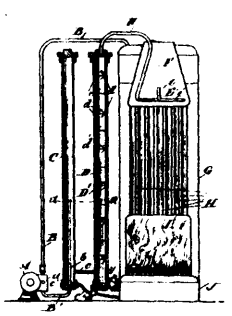
42599 Clark's Garment Waists and Supporter.



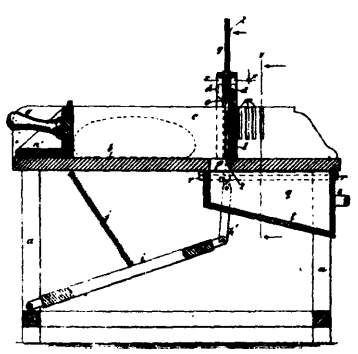
42600 Schimmel's Nursing Bottle.



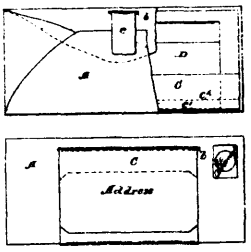
42601 Howard's Draft Regulator.



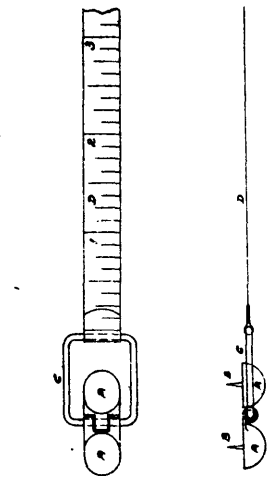
42602 Healy's Steam Muffler.



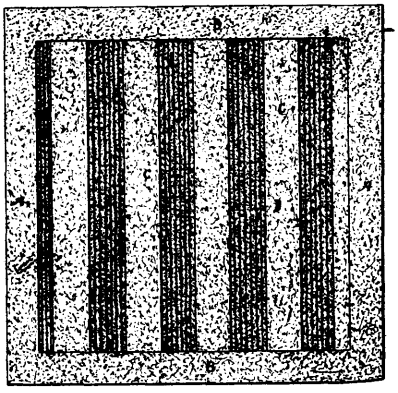
42603 Fader's Food Cutter.



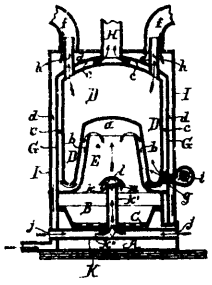
42604 Alton's Envelope.



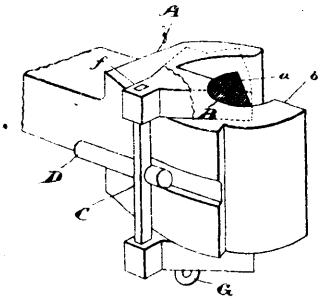
42605 Oxley's Measuring Tape.



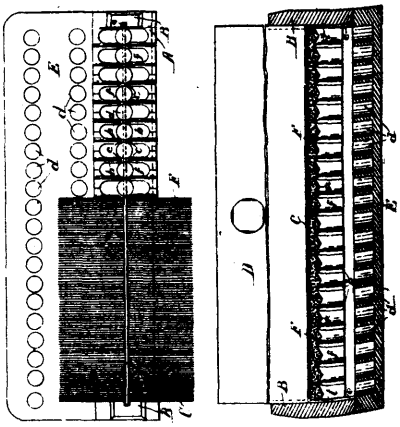
42606 Curran's Mold for making Plastic Slabs.



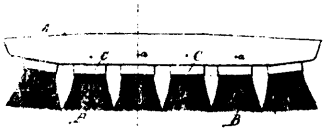
42607 Wattles and Lukens' Heating Apparatus.



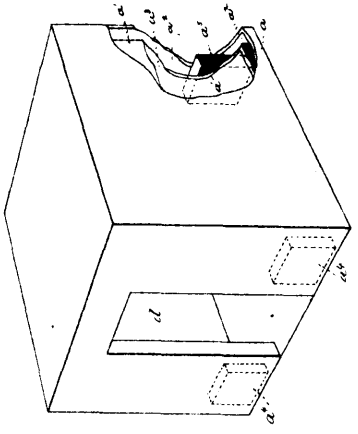
42608 Reid's Car Coupler.



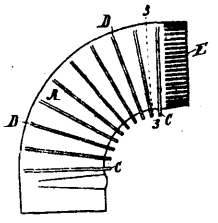
42609 Gate's Brush Fibre Clamp.



42610 Gates and Welch's Brush.

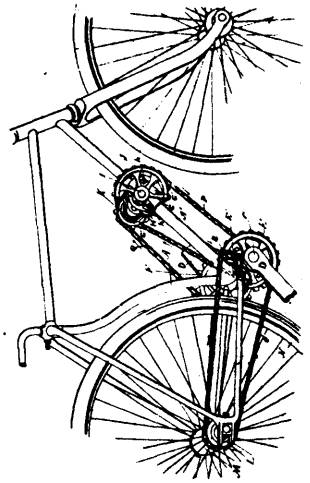


42611 Trussell's Refrigerator.

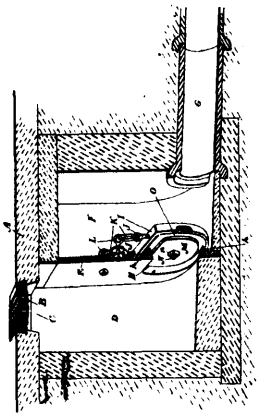


42612 Walter's Stove Pipe Elbow.

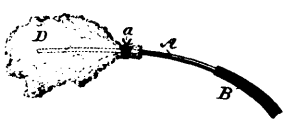
42613 Pickett's Rice Scourer.



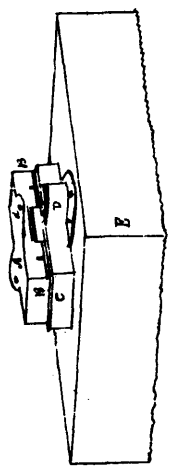
42614 Pointon's Bicycle.



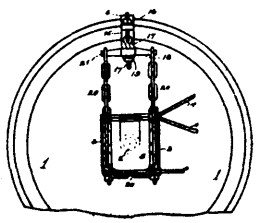
42615 Smith's Flood Water Trap for Cellars.



42616 Beckman's Cotton Harvesting Dev ice.

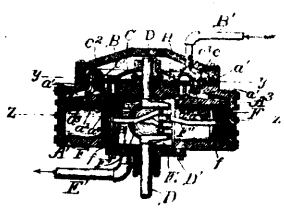


42617 Barrett's Rockers and Cups for operating Pumps.

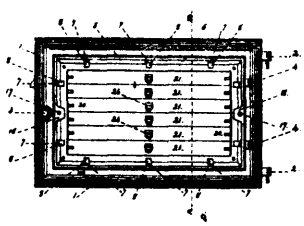


42618 Taylor's Journal Box Lifter.

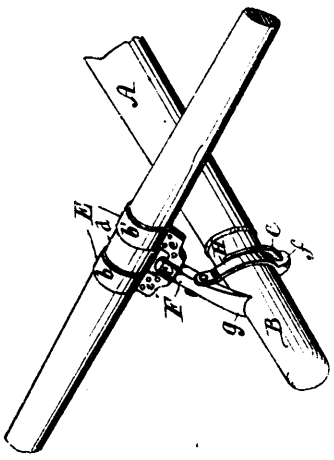
42619 Griswold's Wire Bale Tie.



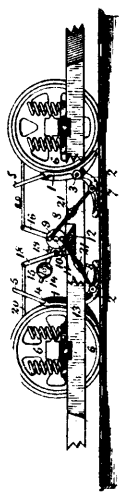
42620 Bruce's Valve for Steam Engines.



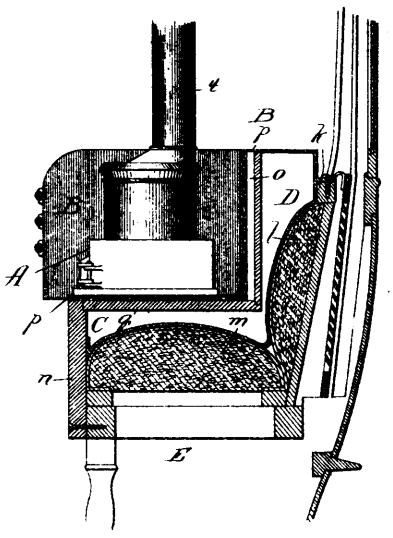
42621 Buck's Oven Door for Cooking Stoves.



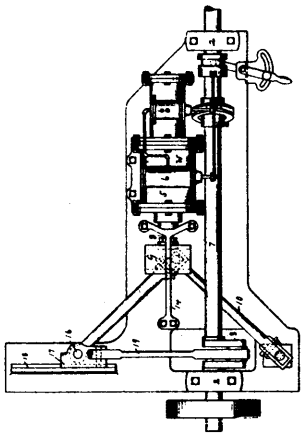
42622 **Kellogg's Neck Yoke.**



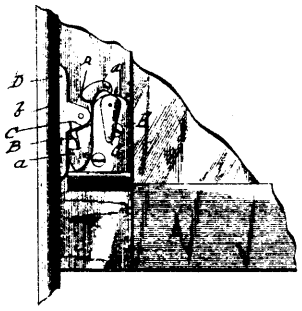
42623 **Allen's Railway Brake.**



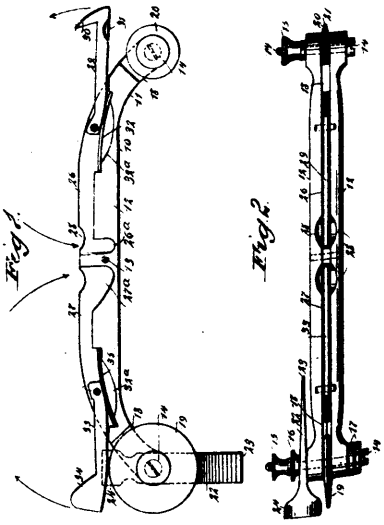
42624 **Myer's Street Car Heater.**



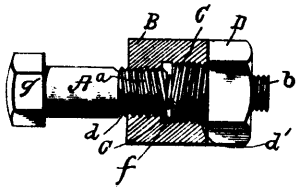
42625 **Littlejohn's Steam Engine.**



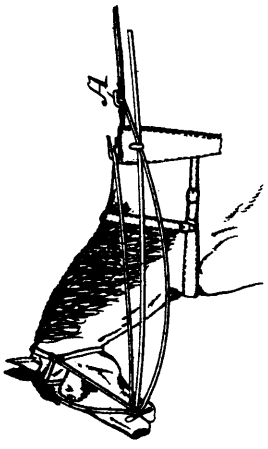
42626 **Gibsen's Window Sash Lock**



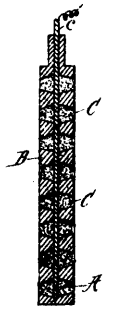
42627 **Walton's Calking Tool.**



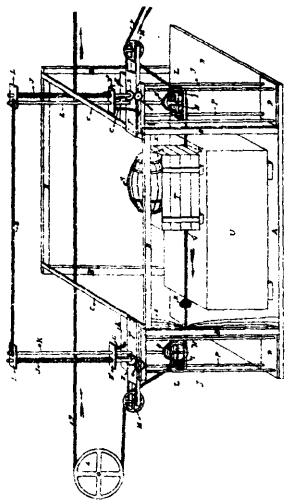
42628 **Goodman's Safety Bolt.**



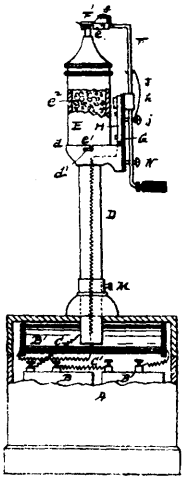
42629 **Smith's Holder for Hitching Straps.**



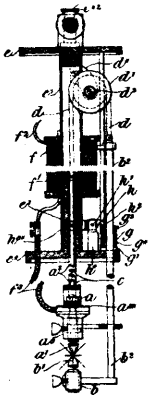
42630 **Kennedy and Diss' Storage Battery.**



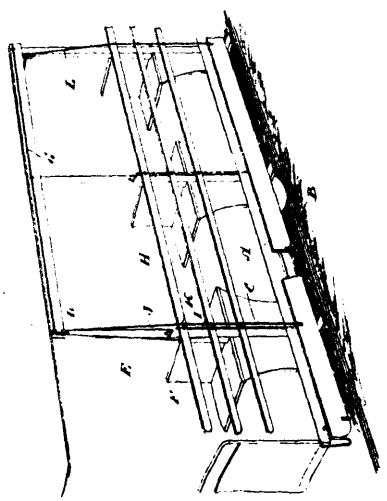
42631 Denard's Machine for Cutting Stone, &c.



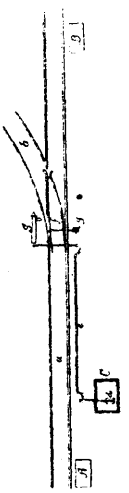
42632 Chambers' Electric Lamp Lighter.



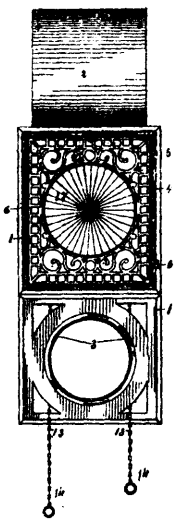
42633 Akester's Electric Arc Lamp.



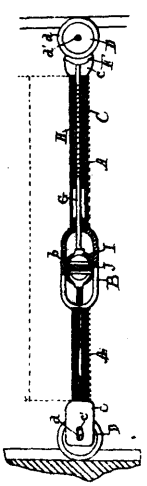
42634 Marshall's Street Car.



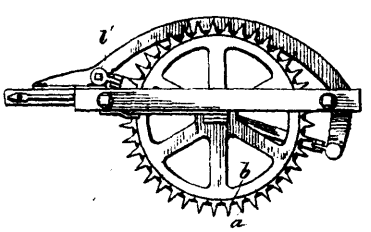
42635 Boyle's Railway Signal.



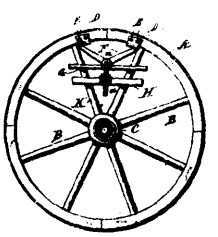
42636 McSpadden's Ventilator.



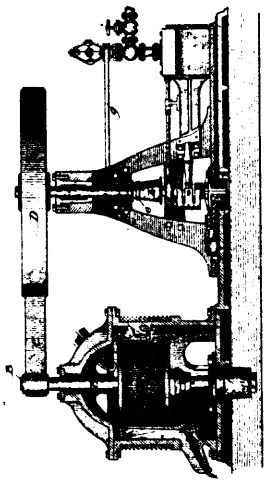
42637 Piper and Davis' Curtain Holder.



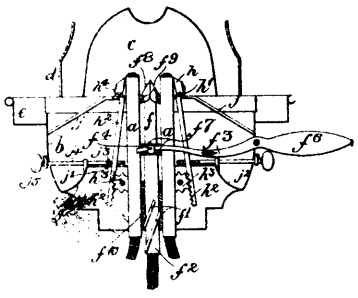
42638 Barrett's Land Roller.



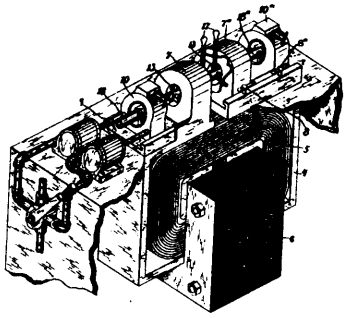
42639 Ross' Tire Tightener.



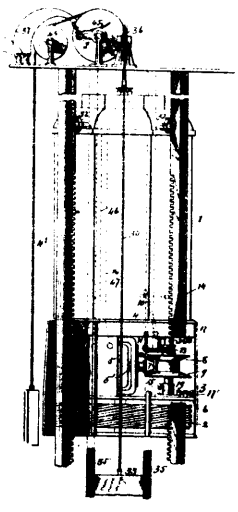
42640 Peck's Ore Separator.



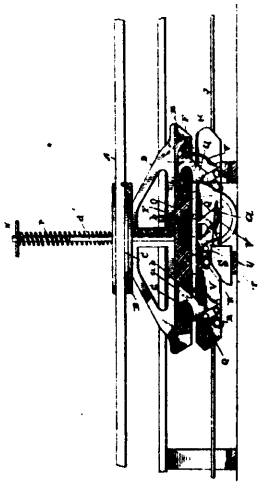
42641 Vine's Lamp.



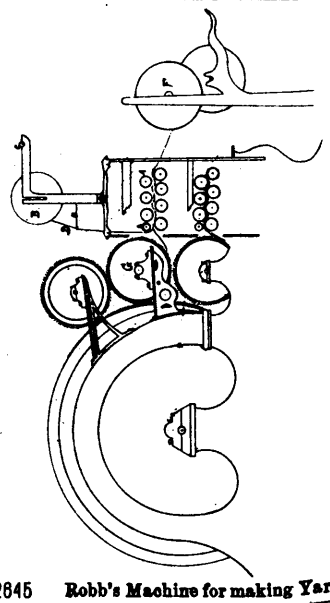
42642 Lemp's Electric Welding Apparatus.



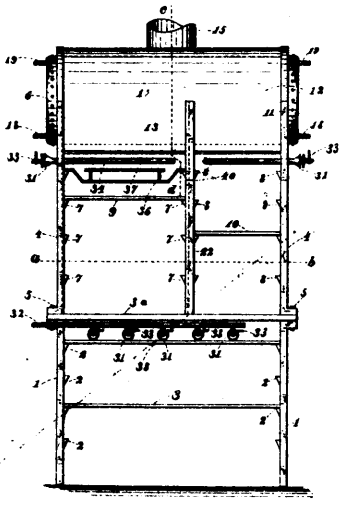
42643 Calcutt's Elevator.



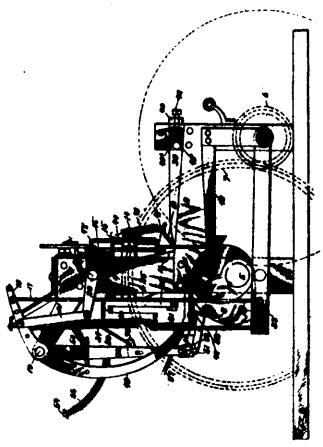
42644 Nolley's Cable Car Grip.



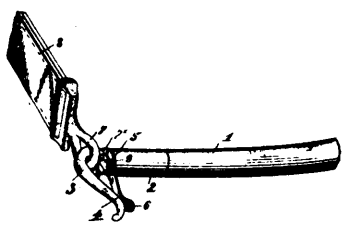
42645 Robb's Machine for making Yarn.



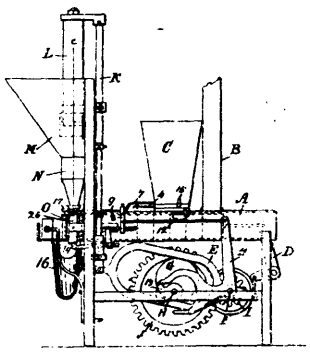
42646 Danforth's Gas Stove.



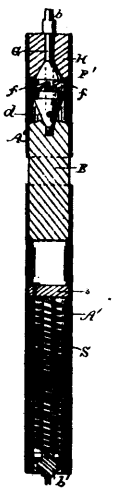
42647 Becker's Machine for cutting Fabric.



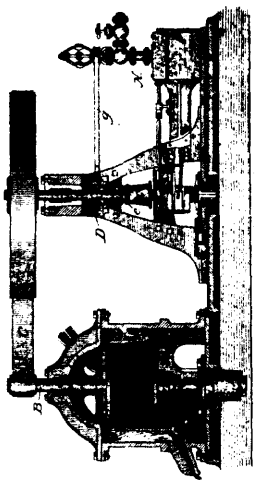
42648 Jones' Whiffletree Hook.



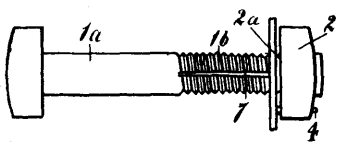
42649 Moore's Can Filling Machine.



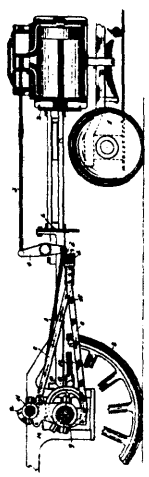
42650 Crisson's Friction Roller.



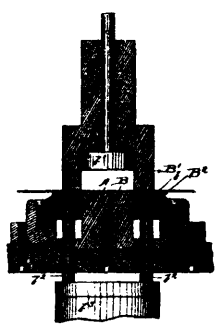
42651 Peck's Ore Separator.



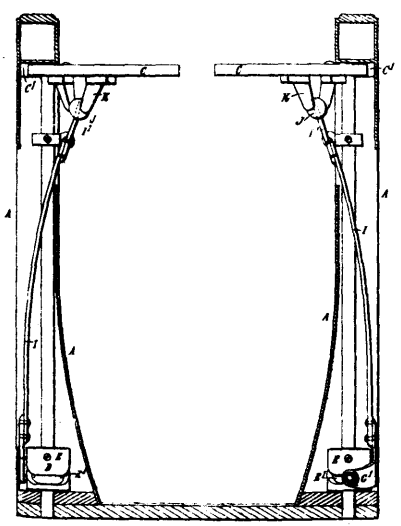
42652 Cooke's Nut Lock.



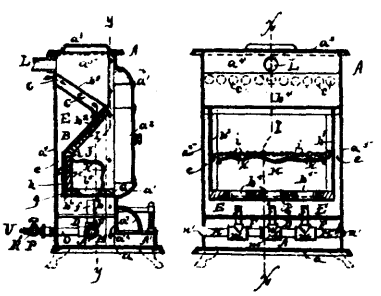
42653 Woolf's Valve Gear for Engines.



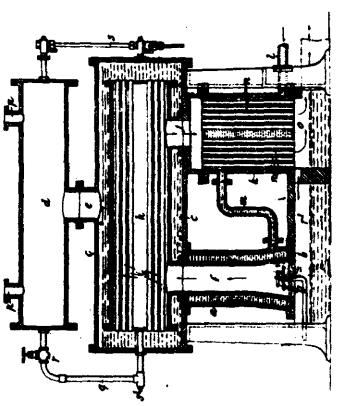
42654 Bodge's Art of Drawing Sheet Metal.



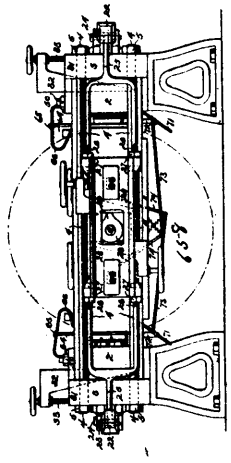
42655 Gajardo's Apparatus for Registering the number of persons entering or leaving vehicles.



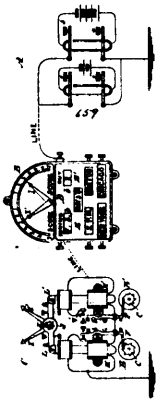
42656 Gibbons' Gas Stove.



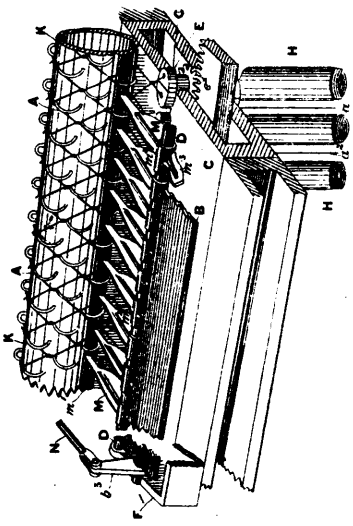
42657 Lishman's Apparatus for Generating Steam.



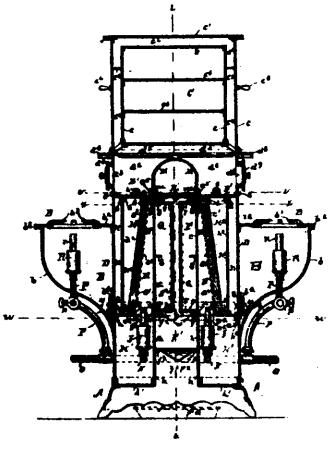
42658 **Mason and Wiegand's Machine for making Washers and Nuts.**



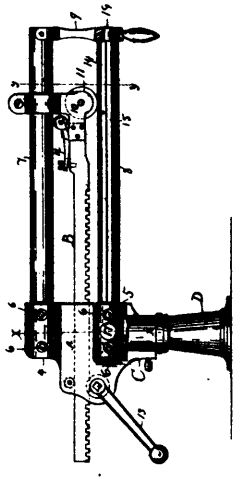
42659 **Mott's Electrical Apparatus for indicating the progress and result of races, &c.**



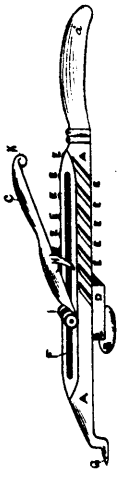
42660 **Bond's Detector Stop Motion for Wire Working Machines.**



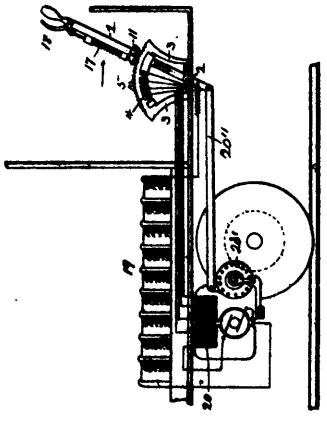
42661 **Gibbons' Cooking Apparatus.**



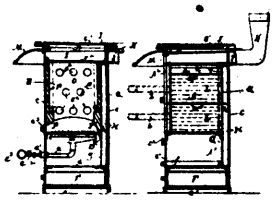
42662 **Grannis Grooving Machine.**



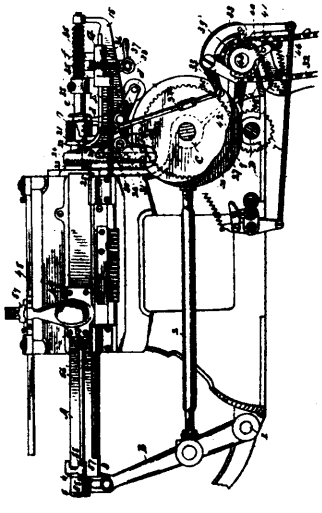
42663 **Thicke's Can Opener.**



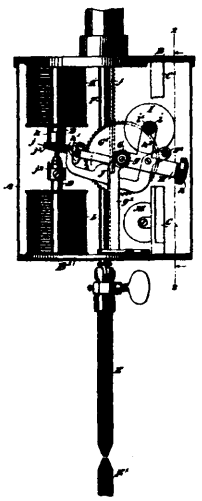
42664 **McLaughlin's Apparatus for Controlling the Application of Power.**



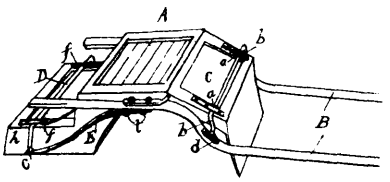
42665 **Gibbons' Broiling Apparatus.**



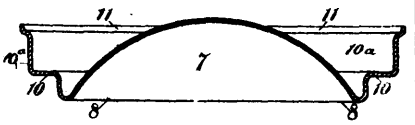
42666 **Wilcomb's Knitting Machine.**



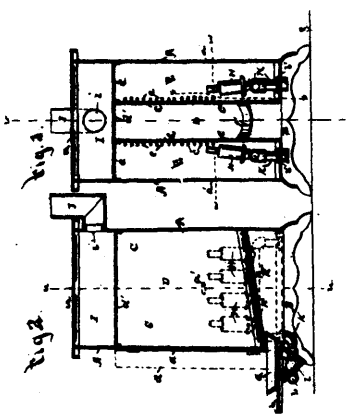
42667 Easton's Electric Arc Lamp.



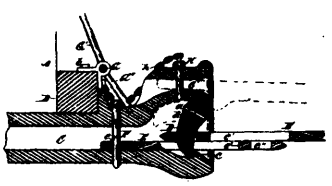
42668 Dort's Road Cart.



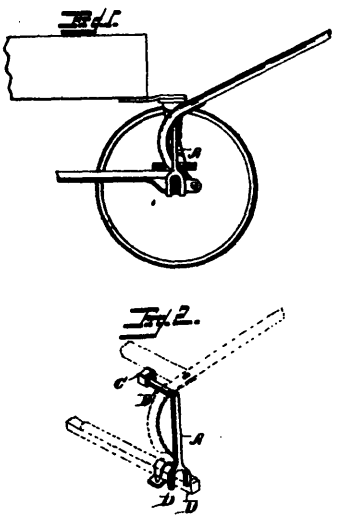
42669 Simpson's Kettle Bottom.



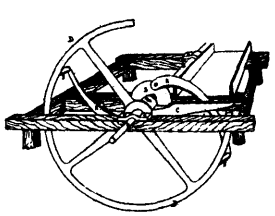
42670 Noakes and Gibbons' Cooking Apparatus.



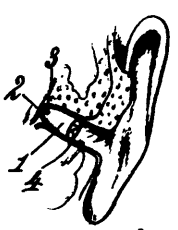
42671 Graves' Car Coupler.



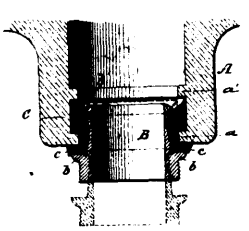
42672 Buchnan's Thill Support.



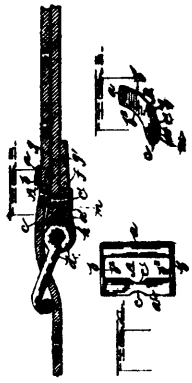
42673 Manning's Straw Cutter.



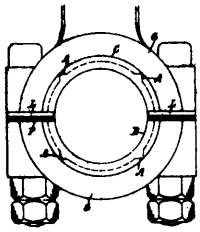
42675 Wilson's Ear Drum.



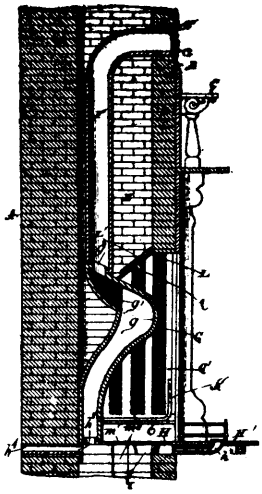
42676 Howell's Pipe Coupler.



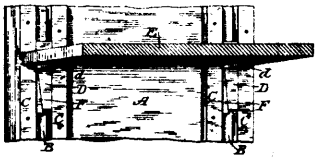
42677 Gelabert, Nelson and Clendenen's Loops for Harness.



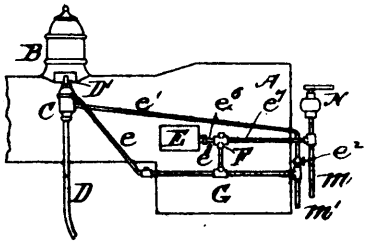
42678 Angus' Interchangeable Lining for Journal Bearings.



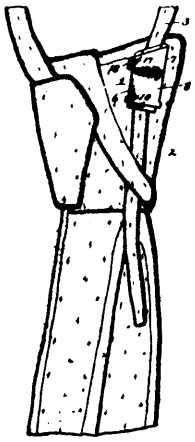
42679 Lytle and Ovitt's Heater for Fire-Places.



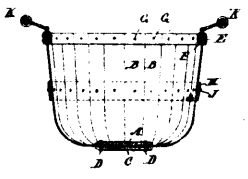
42680 Richards' Support for the Shelves of Book-Cases.



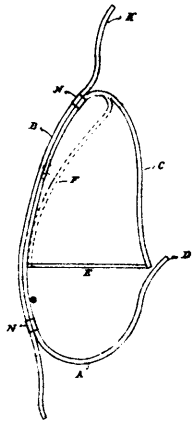
42681 Shelburne's Track Sanding Apparatus.



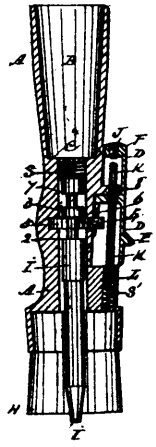
42682 Greenwald's Necktie Fastener.



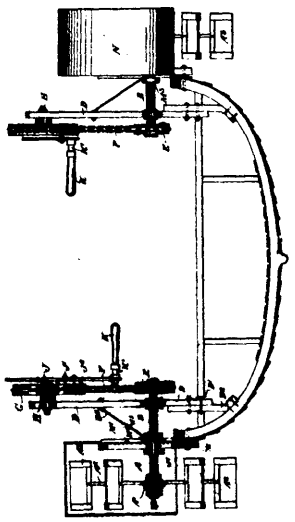
42683 Babcock's Basket.



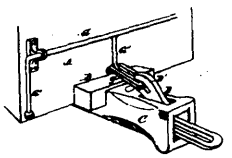
42684 Fenerty's Shaft Loop or Tug.



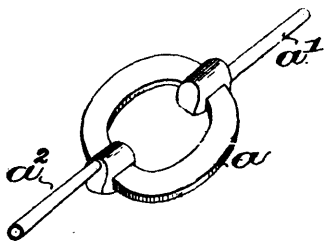
42685 Farr's Crutch.



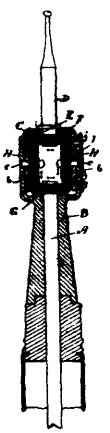
42686 Giles' Apparatus for Propelling Boats by hand power.



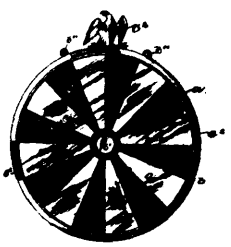
42687 Graves' Car Coupler.



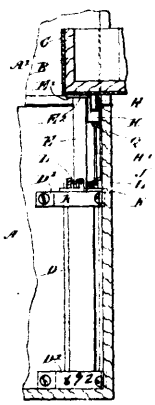
42689 Martin's Thermostat.



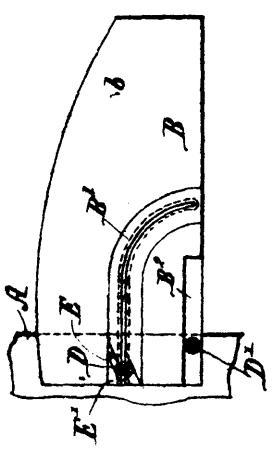
42690 Price's Hand Piece for Dental Engines.



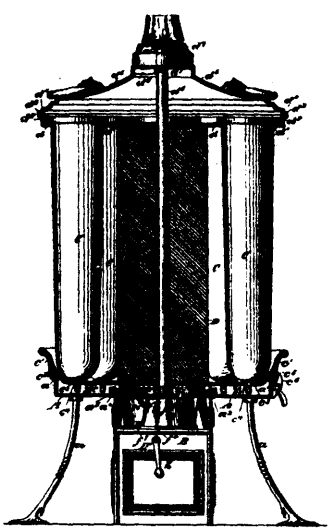
42691 Macdonell's Advertising Device.



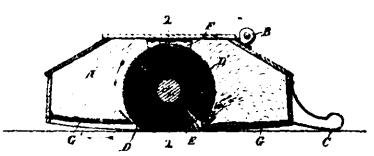
42692 Dwyer's Trunk.



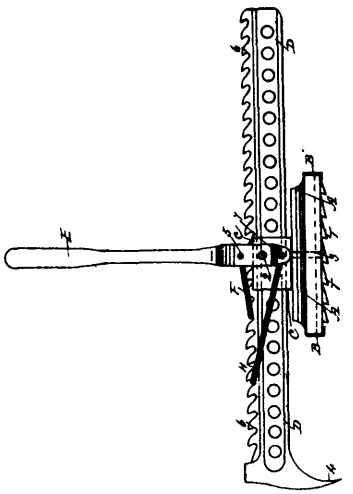
42693 Dwyer's Trunk.



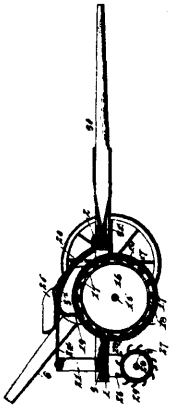
42694 Fowler's Liquid Dispensing Apparatus.



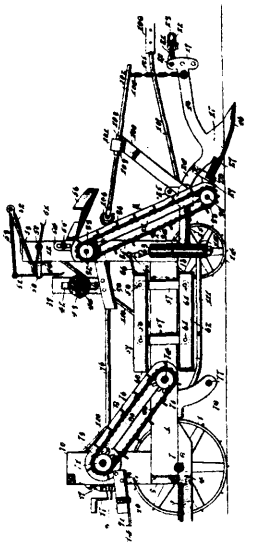
42695 Raymond's Carpet Sweeper.



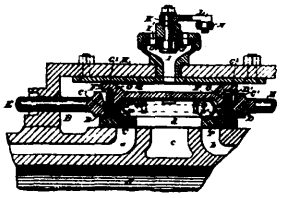
42696 **Trenaman's Carpet Stretcher.**



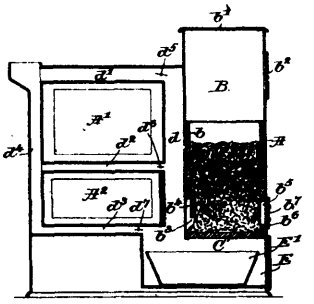
42697 **Heldebrant's Clod Pulverizer.**



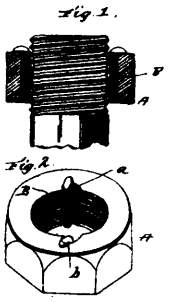
42698 **Krebs' Potato Digger.**



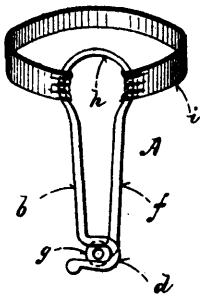
42699 **McDonald's Valve.**



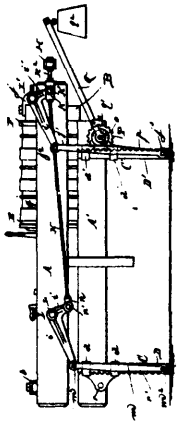
42700 **Weston's Stove.**



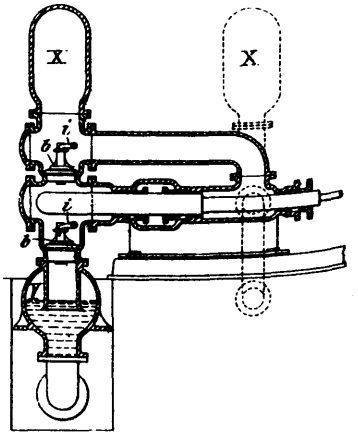
42701 **Taylor's Nut Lock.**



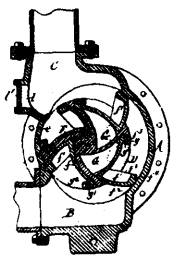
42702 **Daniels' Hose Support.**



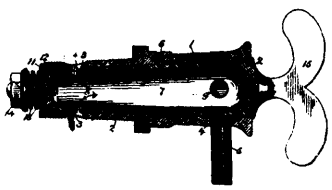
42703 **Helmer's Cheese Press.**



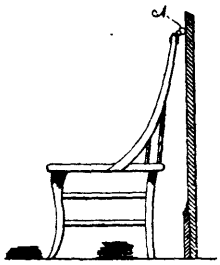
42704 **Riedler's Pump.**



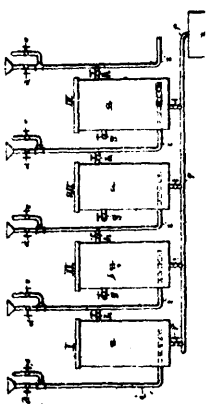
42706 Taber's Pump.



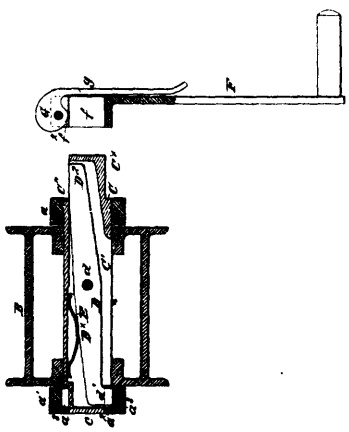
42707 Oakley's Gauging Tap.



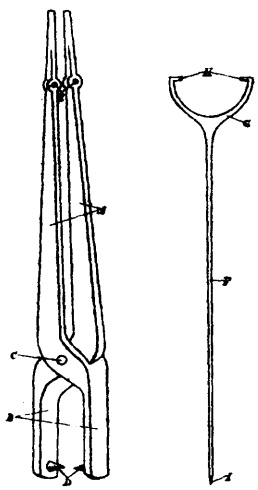
42708 Wheeler and Totman's Chair Pad.



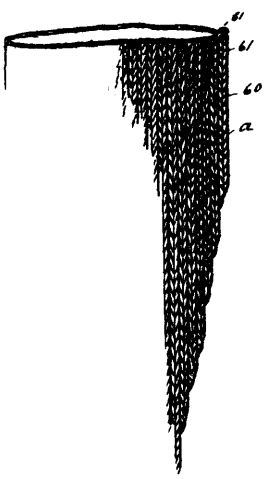
42709 Frasch's Process of Treating Sludge.



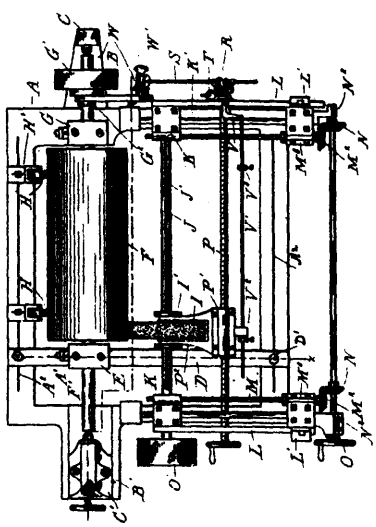
42710 Eddy and Whitehead's Electric Lamp Elevating Windlass.



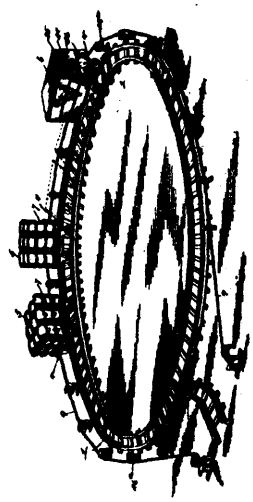
42711 Miller's Flooring and Siding Tongs.



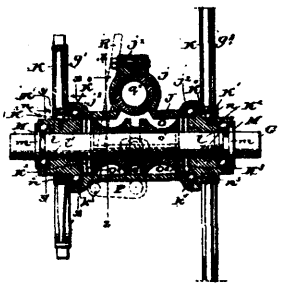
42712 Wilcomb's Method of Making Knitted Fabric.



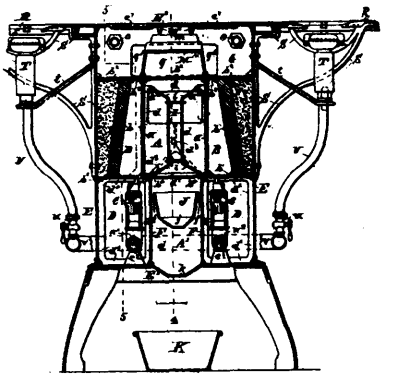
42713 Davidson's Machine for Grinding Rolls.



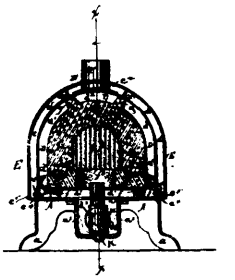
42714 Timby's Apparatus for Aging and Ripening Wines, &c.



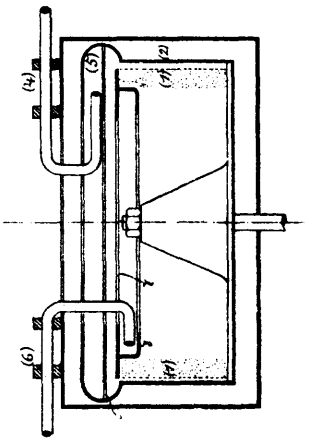
42715 Evans' Bicycle.



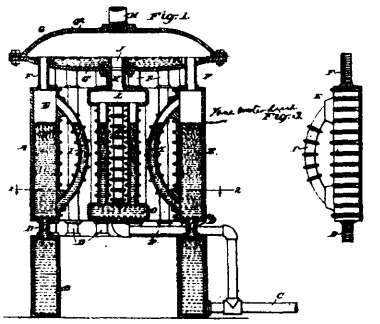
42716 Gibbons' Vertical Boiler.



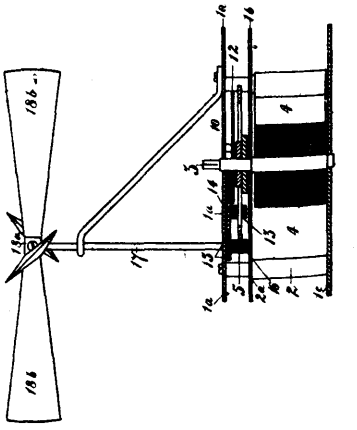
42717 Gibbons' Heating Furnace.



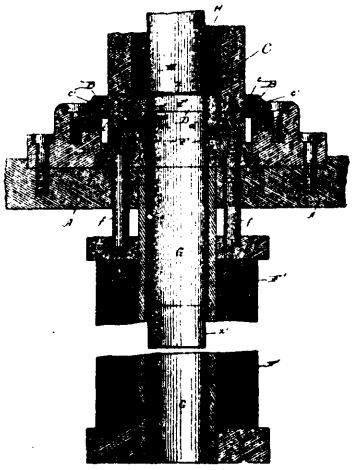
42718 Folsche's Centrifugal Machine.



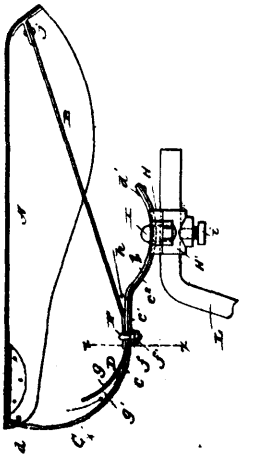
42719 Marston's Boiler.



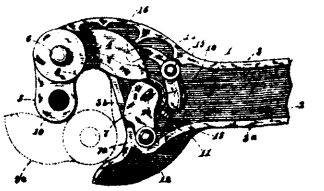
42720 Davidson's Rotary Fan for Ventilators.



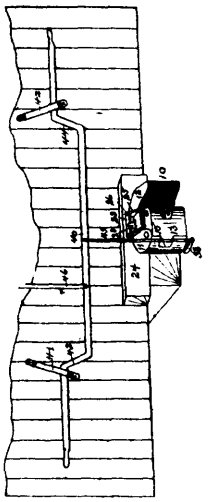
42721 Norton's Drawing Die.



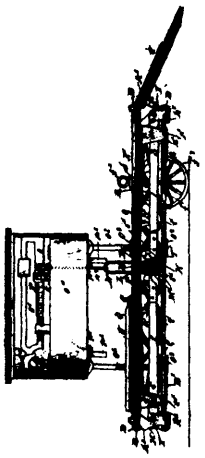
42722 Saladee's Saddle for Cycle Vehicles.



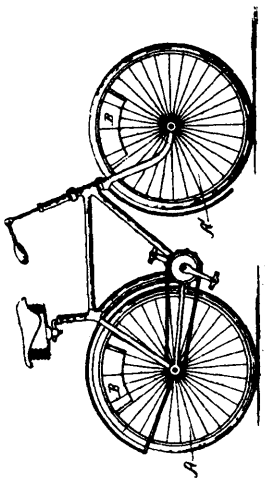
42723 Gilbert's Car Coupler.



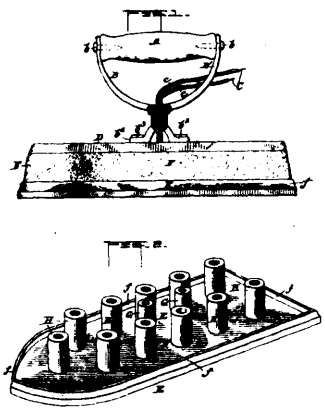
42724 Whipple's Car Coupler.



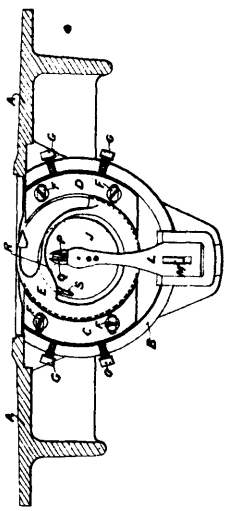
42725 Clawson and Wheeler's Scale.



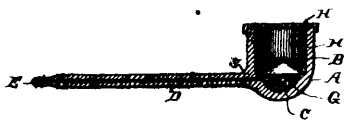
42726 Kroncke and Schonkeyder's Weight Attachment for Bicycles.



42727 Mitchell's Smoothing Iron.

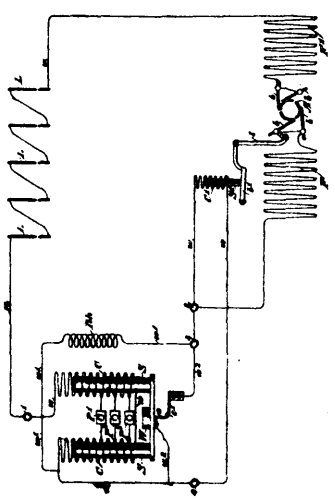


42728 Moore's Rotary Hook for Sewing Machines.

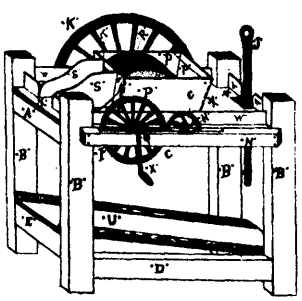


42729 Anderson's Pipe.

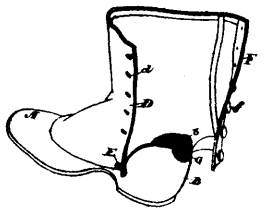
42730 Sobey's Sulky Plow.



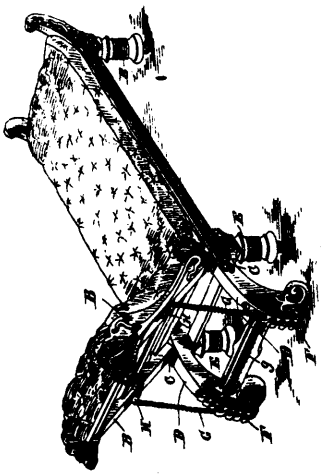
42731 Vineing's Electric Regulator.



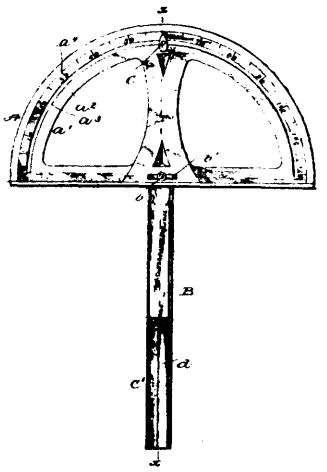
42732 Hutcheroft's Root Cutter and Cider Mill.



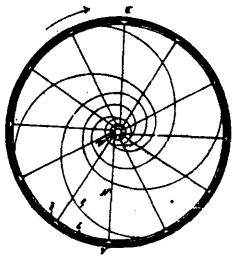
42733 Guinane's Over Shoe.



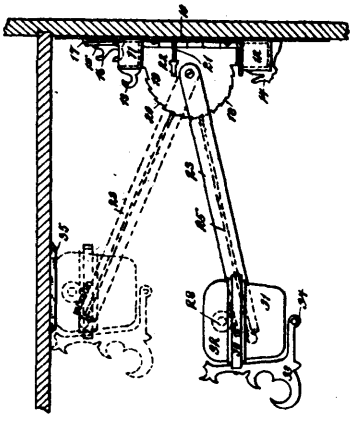
42734 Wright's Couch, &c.



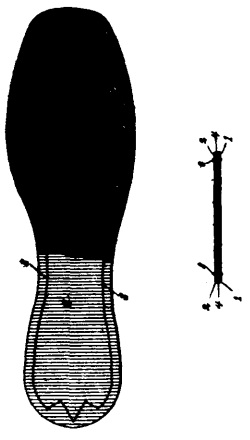
42735 Richardson's Bevel Square.



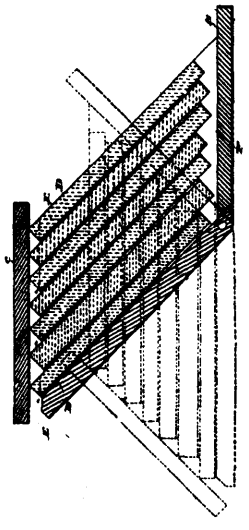
42736 Wollmann's Wagon Wheel.



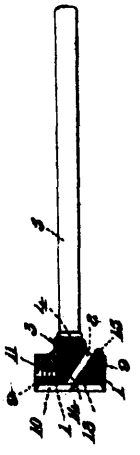
42737 Manley's Ink Stand.



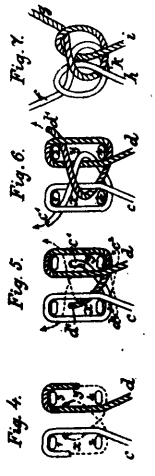
42738 Steinmeyer's Insole.



42739 Hill's Device for Holding Plate Glass for Bevelling.

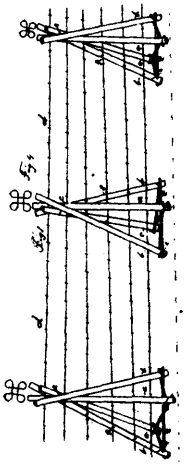


42740 Adams' Auger Bit.

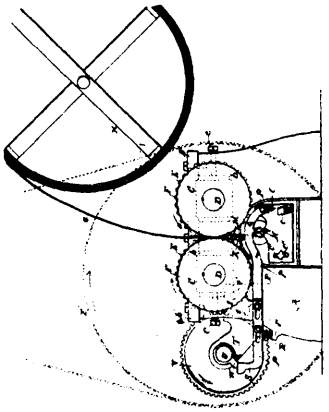


42741 Semmler's Knot for Nets, &c.

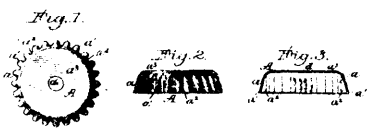
42742 Guilfoyle's Cigar Attachment.



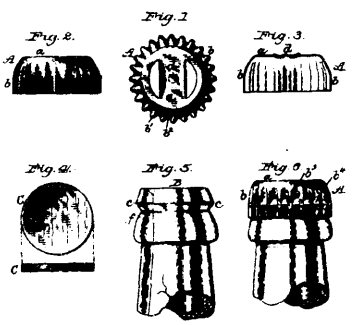
42743 Wartmann's Fence Post.



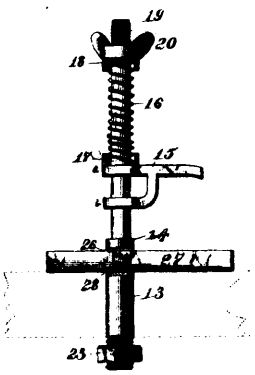
42744 Fulghum and Robert's Wire Coiling and Cutting Machine.



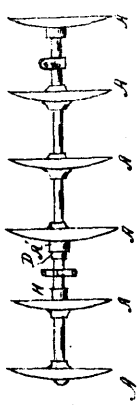
42745 Painter's Bottle Sealing Device.



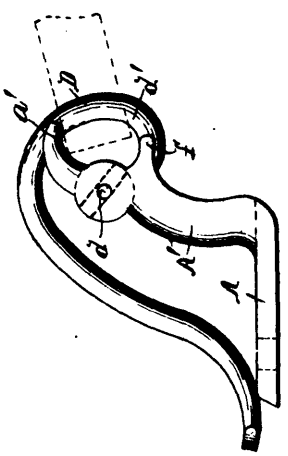
42746 Painter's Bottle Sealing Device.



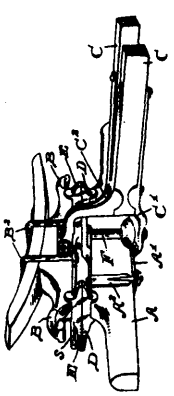
42747 Shelley's Molding Machine.



42748 Grout's Disc Harrow.



42749 Gordon's Check Hook.



42750 Bosart's Fifth Wheel for Vehicles.

Fig. 1.

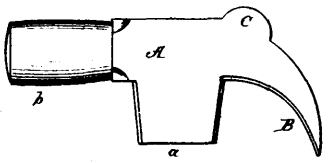
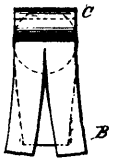
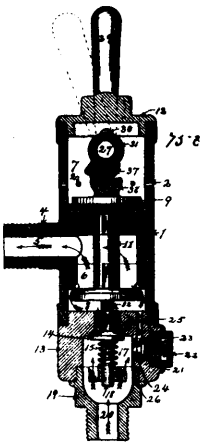


Fig. 2.

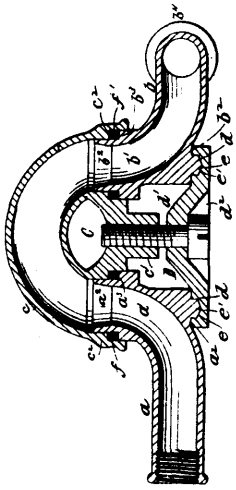


42751 **Kendall's Claw Hammer.**

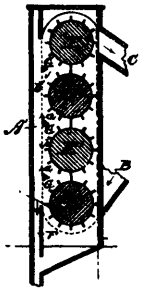


42753 **Whitacre's Air Brake.**

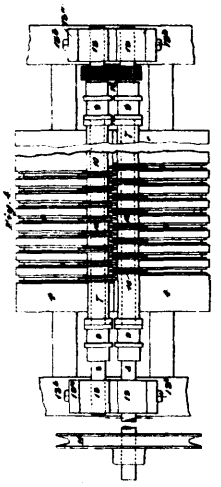
42754 **Whitacre's Engineer's Valve.**



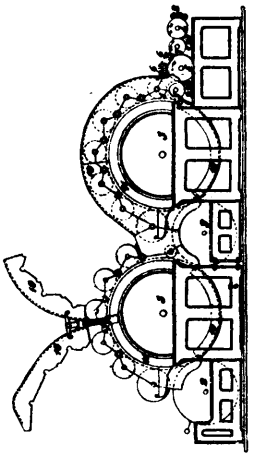
42755 **Suydam's Pipe Coupler.**



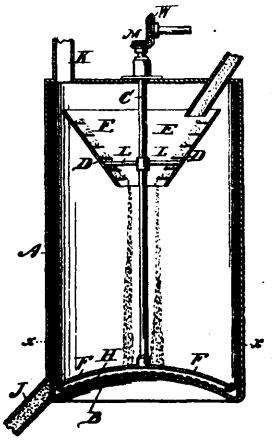
42756 **Finch's Machine for Bolting Flour.**



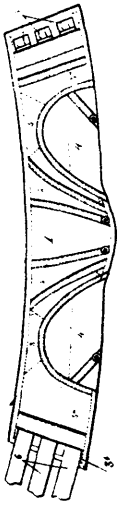
42757 **Raabe's Apparatus for Condensing Fibrous Material Preparatory to Spinning.**



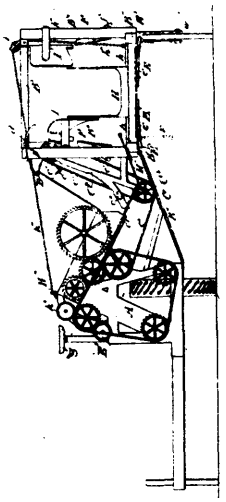
42758 **Raabe's Method of making Yarn from Vegetable Waste Fibre.**



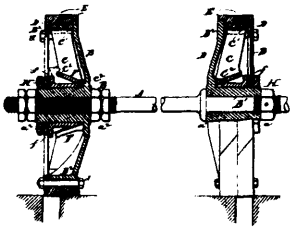
42760 **Davidson's Kettle for Calcining Gypsum.**



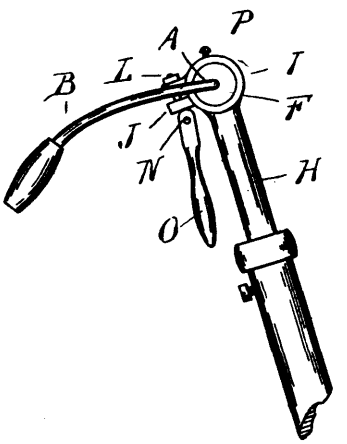
42761 **Pickering's Abdominal Support.**



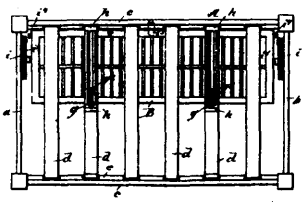
42762 Connell's Grain Shocking Machine.



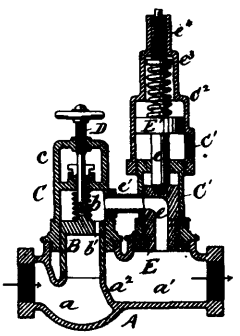
42763 Hershey's Piston Valve for Steam Engines.



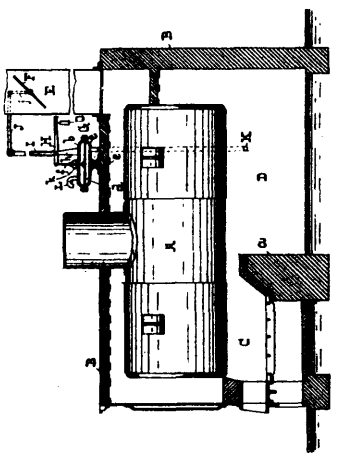
42764 Johnson's Bicycle Handle Bar.



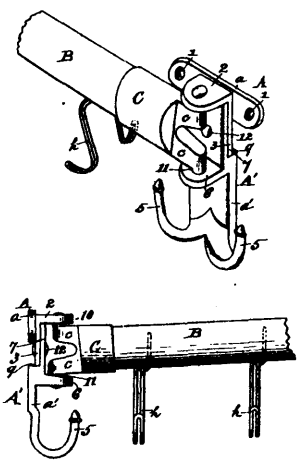
42765 Wierenga's Bed.



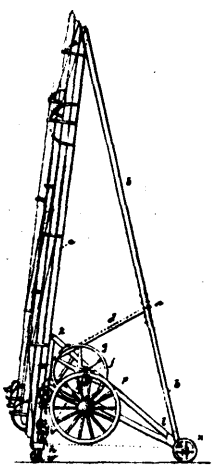
42766 Wood's Valve.



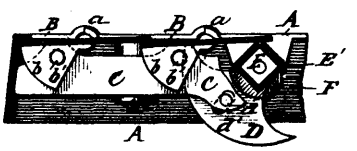
42767 Thiell's Apparatus for Controlling the Draft of Chimneys.



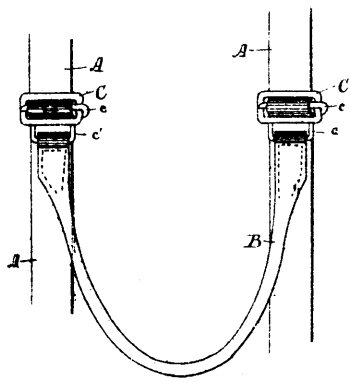
42768 Bisel's Wardrobe Fixtures.



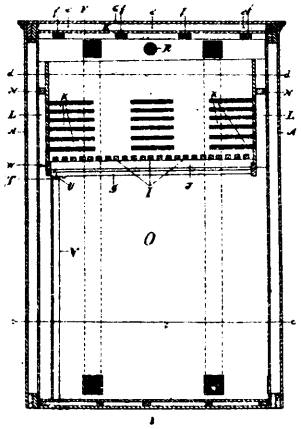
42769 Dallinger and Popp's Ladder.



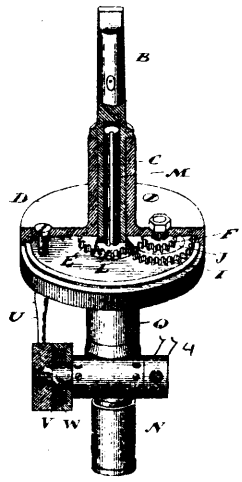
42771 Cissel's Hot Air Register.



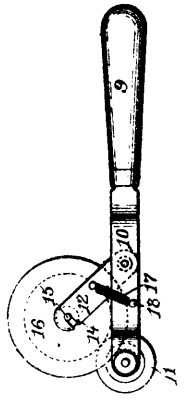
42772 Groder's Rein.



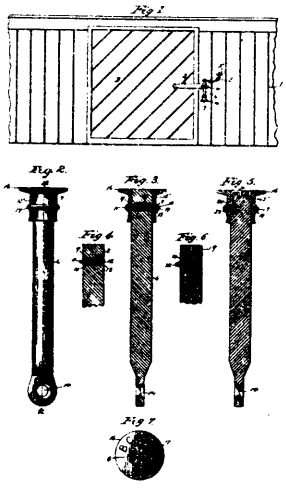
42773 Malcolm's Refrigerator.



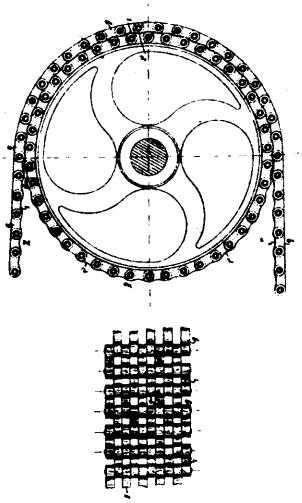
42774 Stevens' Attachment for using Small Drills in Large Drilling Machines.



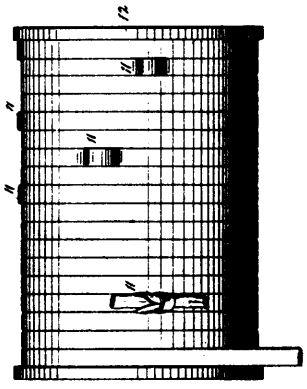
42775 Coe's Apparatus for Packing Gold Films.



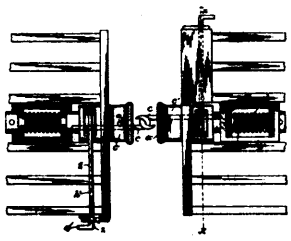
42776 Conger's Seal Lock.



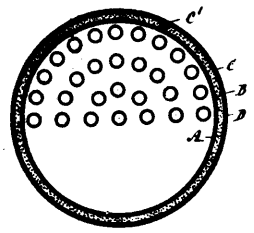
42777 Bockmuhl and Karthans' Belt and Pulley Cover.



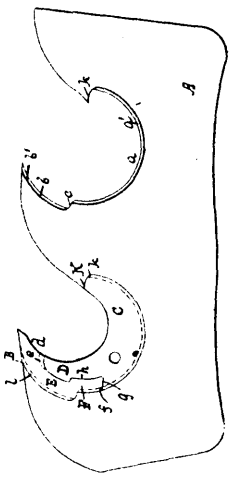
42778 Turner's Holder for Sausage Casings.



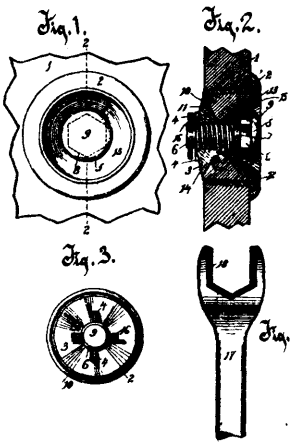
42779 Welch's Car Coupler.



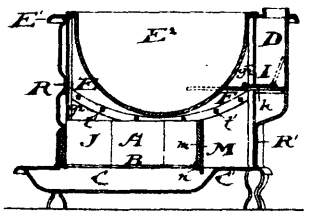
42780 Sparham's Covering for Steam Boilers, &c.



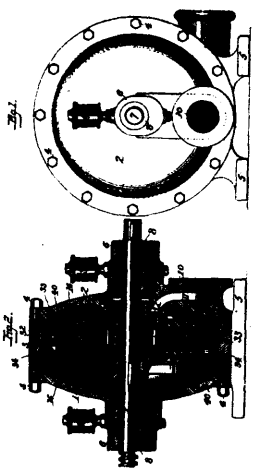
42781 Brooke's Saw Tooth.



42782 Beaumle, Koots and Knoernschild's Bung.



42783 Kernan and Landers' Furnace.



42784 Edwards' Steam Motor.