Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☑ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☑ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☐ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☐ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Irregular pagination.

The Canadian Patent Office RECORD

Vol. XX.—No. 9. SEPTEMBER, 1892. { Price free by post in Canada and the United States, $2.00.

NOTICE.

All solicitors, agents or attorneys who, in circulars or advertisements, or otherwise, refer to the Commissioner or Deputy Commissioner of Patents, or to any other official of the Patent Office, for evidence of their professional standing, do so without authority.

INVENTIONS PATENTED.

NOTE.—Patents are granted for 18 years. The term of years for which the fee has been paid, is given after the date of the patent.

No. 40,181. Chemical Fire Engine.

(Machine chimique.)

The Muskegon Chemical Fire Engine Co., assignee of Randall Tompkins Van Valkenburg, Muskegon, Michigan, U.S,A., 1st Semptember, 1892; 6 years.

Claim.—1st. In a chemical fire engine, the combination of two hose reels journalled in line with each other, and provided with hollow journals at their inner ends communicating with the hose upon the reels, a three-way valve communicating with the generator or generators and with either or both of the reels, through bearings formed at opposite sides of said valve, and into which the hollow journals of the reels engage, substantially as described. 2nd. In a chemical fire engine, the combination of two generators provided with separate valve controlled discharge pipes, a common discharge pipe into which said separate discharge pipes communicate, and three-way valve communicating with said common discharge pipe, and two hose reels having hollow journals communicating with the valve ports of said three-way valves, and with the hose on the reels, substantially as described. 3rd. In a chemical fire engine, the combination of the separate receptacle provided with the perforated vessel for containing a dry chemical, the inlet pipe entering said receptacle near the bottom, and extending near the top thereof, and the outlet pipe through the top extending to near the bottom of said receptacle, substantially as described. 4th. In a chamical fire engine, the combination with the frame, of the two generators supporting thereon, the receptacle N supported upon the frame between the generators, the valve controlled discharge pipes M of the generator, the common discharge pipe M^1 into said receptacle, the disharge pipe P through the top of said receptacle, the three-way valve on the pipe P, and stuffing boxes R^{11} secured on opposite sides of said valve, and the hose reel having hollow journals engaging into said stuffing boxes, substantially as described. 5th. In a chemical fire engine, the combination of the generator A, a separate receptacle G on top thereof, and a mixing and distributing shelf Y secured within said generator below the separate receptacle, substantially as described. 6th. In a chemical fire engine, the combination with a generator, a separate receptacle of globular form constructed in halves, the lower half being secured in the top of the generator, and the upper half being detachably secured upon the lower half, and of bearings formed in the respective halves of the receptacle to receive the trunnions of a vessel containing a generating liquid, substantially as described. 7th. In a chemical fire engine, the combination with a generator of a separate receptacle constructed in halves, the lower half being secured upon the generator and the upper half forming a hinged cover for the lower half, a vessel provided with trunnions by means of which said vessel is suspended in bearings in said receptacle, a handle engaging with one of the trunnions of said vessel and a stopper secured to the end of a vertical screw in the upper half of the receptacle, and adapted to seal the mouth of said receptacle, substantially as described. 8th. In a chemical fire engine, the combination with the separate receptacle adapted to receive and discharge a liquid charge contained in a globular vessel, substantially as described, of a globular vessel consisting of two half globular bottles banded together, substantially as described. 9th. In a chemical fire engine, the combination with a separate receptacle adapted to receive and discharge a liquid charge contained in a globular vessel, substantially as described of a globular vessel consisting of two half globular bottles banded together by a metal loop secured in an annular groove formed in the said bottles, and of a long and a short trunnion secured to said metal loop, said long trunnion being adapted to project through its bearing in the receptacle and receive a crank handle, substantially as described. 10th. In a chemical fire engine, the combination with a generator A, of a globular receptacle C constructed in two halves, the upper half being hinged to the lower half, the annular flange I^1 formed on the respective halves and provided with a suitable packing and means of securing the two halves together, the bearings formed in said flanges, the globular vessel consisting of two half globular bottles J bonded together and provided with trunnions J^1 adapted to engage into the aforesaid bearings, the handle applied to one of said trunnions and the stopper K secured to a vertical screw in the upper half of the receptacle and adapted to seal the mouth of each bottle, substantially as described.

No. 40,182. Vehicle. (*Voiture.*)

William Edwin Stevens, South West Oswego, New York, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. The combination, with the pole pivoted upon the hound and provided with futchels, of a spring extending back under the axle, forward under the pole, and adjustably connected to the futchels, as set forth. 2nd. The combination, with the brake beam connected by a draw and lever bar to the front end of the pole, of a brake shoe holder secured upon each end of the brake beam, a slide on each holder, a frame fitting in said slide, a brake shoe secured to the frame, and a spring connecting the frame to the brake beam.

No. 40,183. Vise. (*Etau.*)

David Charles Sabourin and Joseph Sabourin, both of Lowell, Massachusetts, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. The combination of the fixed jaw and fixed segmental nut with the movable jaw and a segmental screw supported thereon and adapted to be rotated in one direction to engage said nut, and to be rotated in the other direction out of engagement with said nut, as and for the purpose specified. 2nd. The combination of the fixed jaw and fixed segmental nut with the movable jaw and a segmental screw supported thereon and adapted to be rotated in one direction to engage said nut, and to be rotated in the other direction out of engagement with said nut, the combined angles measured by the threaded portions of said nut and screw being less than three hundred and sixty degrees, as and for the purpose specified. 3rd. The combinatian of the fixed jaw, the fixed segmental nut, the movable jaw, the slide secured to said movable jaw, the segmental screw turning in said slide and movable longitudinally therein, the engaging ends of the threads of said screw and nut being bevelled or narrowed the more readily to engage with each other, and a spring arranged to move said screw forward in said slide when said screw and nut are disengaged, and adapted to yield to allow a backward movement of said screw in said slide when said bevelled end portions of said threads are in contact with and passing each other, as and for the purpose specified. 4th. The combination of the fixed jaw, the fixed segmental nut, the stationary ways, the movable jaw, the slide secured to said movable jaw and supported on said ways, the segmental screw turning in said slide and movable longitudinally

therein, a stop pin projecting from said screw, and a spring arranged to move said screw longitudinally to cause said pin to engage a notch, with which said slide is provided, when said screw is out of engagement with said nut, as and for the purpose specified. 5th. The combination of the fixed jaw, the segmental nut secured to said fixed jaw, the movable jaw, the slide secured thereto, the screw rod journalled in said slide, the segmental screw carried by said rod, and the handle secured to said screw rod and having a hub larger than the diameter of said screw, said hub serving as one of the journals of said screw rod and being adapted to enter and fit a hole with which said slide is provided, as and for the purpose specified. 6th. The combination of the fixed jaw, the segmental nut secured to said fixed jaw, the movable jaw, the slide secured thereto, the screw rod journalled in said slide, the segmental screw carried by said rod, the handle secured to said screw rod and having a hub larger than the diameter of said screw, said hub serving as one of the journals of said screw rod and being adapted to enter and fit a hole with which said slide is provided, and a half journal box secured in said slide in front of said screw, as and for the purpose specified.

No. 40,184. Binder. (*Moissonneuse-lieuse.*)

Abram G. Reaman, Ringwood, Ontario, Canada, 1st September, 1892; 6 years.

Claim.—1st. In the knotter device for harvest binders, the combination of the spring secured medially to the knotter frame and guided at its lower end between studs on said knotter frame, with the grip plate also guided between said studs and secured against said knotter frame by said spring and having a hook on its upper edge to hold the twine, and a shank by which it is operated, substantially as shown and described. 2nd. In combination, the spring secured medially to the knotter frame and guided by studs on said frame, the grip plate having a hook formed on its upper edge to hold the twine secured against the knotter frame and having a shank on said grip plate to connect it to a lever operated by a cam wheel so as to reciprocate said grip plate horizontally and the studs on the knotter frame above and below said grip plate to guide it and said spring, substantially as shown and described. 3rd. In combination, the clamping spring secured medially by a set screw to the knotter frame to clamp the grip plate, the grip plate having a hook on its upper edge to hold the twine, and the studs on the knotter frame to guide said grip plate and spring, subetantially as shown and described. 4th. The combination of the twine guide formed at the bottom of the needle opening in the frame of the knotter, with the grip plate having a hook thereon, the spring secured medially by a set screw and guided by the studs on the said frame of the knotter, the said guide studs to direct said grip plate and spring, the bell crank hinged to said grip plate, and the cam wheel having a raceway formed on its periphery to operate said bell crank, substantially as shown and described. 5th. The combination of the cam wheel having an inwardly curved raceway formed on a portion of its periphery with the bell crank vibrated by said raceway, the grip plate hinged to said bell crank, and the spring secured medially by a set screw to bear on said grip plate, substantially as shown and described. 6th. The combination of the cam wheel having an inwardly curved raceway formed on a portion of its perirphery, with the bell crank vibrated by said raceway, the grip plate hinged to said bell crank, the spring secured medially by a set screw to bear on said grip plate, and the studs on said frame to guide said grip plate and spring, substantially as shown and described.

No. 40,185. Combination Rule, Square and Compass. (*Règle, équerre et compas combinés.*)

Marshall G. Flick, Toronto, Ontario, Canada, 1st September, 1892; 6 years.

Claim.—1st. In a combined rule, scale and compass the combination of a ruling edge divided into any number of equal divisions serving as a scale and having formed in it a series of pivot apertures adapted to receive the point of the pivot instrument and a series of radii apertures adapted to receive the point of the marking instrument, substantially as described. 2nd. In a combined rule, scale and square, the combination of a ruling edge divided into any number of equal divisions serving as a scale, two or more apertures formed in the body of the instrument, the line passing through which will be at right angles to the ruling edge, substantially as described. 3rd. In a combined scale, square and compass, consisting of a rectangular shaped piece of material having its two longest sides parallel and formed to serve as a ruling edge, each of said ruling edges divided into any number of equal divisions serving as a scale, a series of apertures in the body of said instrument adapted to receive the point of the instrument serving as a pivot, and a series of apertures in the body of the said instrument and in alignement with the first mentioned apertures adapted to receive the point of the marking instrument, and in two or more apertures in the body of the said instrument, one adjacent to either ruling edge, the straight line through which would be at right angles to the said ruling edges, substantially as described.

No. 40,186. Stop Cock. (*Robinet de retenue.*)

Cyrus F. Logan, Lock Haven, Pensylvania, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. In a stop cock, the combination of the casing having a conical seat and bearing, a series of open V-shaped vertical oil grooves arranged in a series around in the face of said bearing, and a rotating plug provided with an upper and lower inclosed oil reservoir, and a series of distributing passages communicating with said reservoirs and extending through the body of the plug, substantially as set forth. 2nd. In a stop cock, the combination of the casing having a conical seat and bearing, and an oil chamber located beneath said bearing, a series of vertical V-shaped oil grooves formed in the face of said bearing, and a rotating plug provided with an inclosed reservoir at its upper end, a series of distributing passages communicating with said reservoir and extending through the body of the plug, and a series of supplemental distributing passages in the bottom end of said plug and communicating radially with the oil chamber located beneath said plug and bearing, substantially as set forth. 3rd. In a stop cock, the combination of the casing having a conical seat and bearing, and an oil chamber located beneath said bearing, a series of vertical oil grooves formed in the face of said bearing, a rotating plug mounted within said seat and provided with a lower concaved end inclosing said casing oil chamber, an inclosed reservoir within the top end of said plug, a series of radially extending distributing passages communicating with said reservoir and extending through the body of the plug, and a supplemental series of radially extending distributing passages in the bottom end of said plug and communicating with the space inclosed by the concaved bottom thereof, substantially as set forth. 4th. In a stop cock, the casing having the bottom reservoir C, combined with the rotating plug E, provided with the concaved bottom F, which, when the plug is seated within the casing, incloses the bottom reservoir, and the series of oil passages communicating with the concaved bottom, substantially as set forth.

No. 40,187. Meter for Fluids. (*Compteur à fluide.*)

Fred W. Holt, St. George, New Brunswick, Canada, 1st September, 1892; 6 years.

Claim.—1st. In a meter, the combination, with a cylinder, a slotted hollow guide therein, and a piston moving on said guide, of a projecting rod which reciprocates in the guide, a stop secured to the inner end of the rod, an adjustable sleeve on said rod, a stop secured to the sleeve, both of said stops being engaged by the piston, a registering and a valve mechanism which are operated by the rod, substantially as shown and described. 2nd. In a meter, the combination, with a cylinder, a slotted hollow guide therein and a piston moving on said guide, of a projecting rod which reciprocates in the guide, a stop secured to the inner end of the rod, a sleeve on said rod, a stop secured to the sleeve, both of said stops being engaged by the piston, an interiorly screw threaded cap swivelled to the outer end of the rod and which engages the outer end of the sleeve, whereby the latter is made adjustable in relation to the rod, and a registering and a valve throwing mechanism which are operated by the rod, substantially as shown and described. 3rd. In a meter, the combination, with a cylinder, a reciprocating rod and a piston, of a shaft journalled to one side of the rod, an arm secured to said shaft which is loosely mounted to the rod, a registering mechanism which is actuated by the shaft, and a valve throwing mechanism which is also operated by the shaft, substantially as shown and described. 4th. In a meter, the combination, with a cylinder, a reciprocating rod, a piston and a partially revolving shaft which is operated by the rod, of a laterally projecting pin in the upper end of the shaft, arms loosely connected to the opposite ends of the said pin, a worm shaft, heads secured thereon which are engaged alternately by the said arms, a registering mechanism which is operated by the worm shaft, and a valve throwing mechanism, substantially as shown and described. 5th. In a meter, the combination, with a cylinder, a reciprocating rod and a piston, of a shaft which is partially rotated by the rod, a second shaft adjacent the first named shaft, a spring which is clamped at its opposite ends to the adjacent ends of the shafts, a valve throwing mechanism which is operated by the said shafts, and a registering mechanism, substantially as shown and described. 6th. In a meter, the combination, with a cylinder, a reciprocating rod and a piston, of a shaft J, which is partially rotated by said rod, arm M, on said shaft, shaft K, a spring which connects the adjacent ends of the shafts, arm S, secured to shaft K, a valve throwing rod which is reciprocated by the arm S, a locking mechanism for said rod which is operated by the arm M, and a registering mechanism, substantially as shown and described. 7th. In a meter, the combination with a cylinder, a reciprocating rod and a piston, of a shaft J, which is partially rotated by the said rod, arm M, shaft K, a spring connecting the adjacent ends of the shafts J, K, arm S, a valve throwing rod reciprocated by the arm S, pivoted latches which lock the said rod at the ends of its stroke, and which are engaged by the arm S, and a registering mechanism, substantially as shown and described. 8th. In a meter, the combination with a cylinder, a reciprocating rod and a piston, of shaft J, which is partially rotated by said rod, arm M, shaft K, a spring which connects the said shafts, arm S, a valve throwing rod which is operated by said arm, pivoted latches having notched ends which engage the arm S, at the end of its throw, inwardly projecting set screws on the opposite ends of the latches, and which are engaged by the arm M, and a registering mechanism, substantially as shown and described. 9th. In a meter, the combination with a reciprocating rod, and a piston, of shaft J, which is partially rotated by said rod, arm M, shaft K, a spring connecting said shafts, arm S, a valve throwing rod operated by said arm, support O, hav-

ing projections O¹, L-shaped latches pivoted to said support, and having notched lower ends which engage and hold the arm S, at the end of its throw, set screws in the upper ends of the latches which are engaged by the arm M, and a registering mechanism, substantially as shown and described. 10th. In a meter, the combination with a cylinder pivoted with ports at its opposite ends, and an inlet and outlet chamber arranged beneath the cylinder which are in communication with said ports, of valves pivoted to the bottom of said inlet chamber directly beneath the ports and which are adapted to close either the inlet or outlet chamber, a link extending through the inlet chamber and pivotally connected at its ends to the valves, and outwardly extending valve operating rod, a piston, a reciprocating rod, and a registering mechanism actuated by said rod, substantially as shown and described.

No. 40,188. Transfer Ticket. (*Billet de transfert.*)

Arthur White, Toronto, Ontario, Canada, 1st September, 1892; 6 years.

Claim.—1st. A transfer ticket bearing a mark of cancellation capable of becoming visible at a period subsequent to the marking thereof, substantially as and for the purpose specified. 2nd. A novel method of cancelling tickets, consisting essentially in applying the mark of cancellation at the time of issue in such a manner that it will take effect at some desired subsequent period, substantially as and for the purpose specified.

No. 40,189. Rail Joint. (*Joint de rail.*)

Frederick H. Heath, Minneapolis, Minnesota, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. The combination with the rail or rails, of a tie plate arranged between and extending over adjoining ties, an angle bar formed integrally with and on the upper surface of said plate, and having an inner vertical part to engage the web of the rail, said vertical part provided with holes, the rail web or webs having holes registering therewith and bolts arranged therein, for the purpose specified. 2nd. The combination with the rail or rails, of a tie plate whereon the same are adapted to rest, said plate adapted to extend between and across adjoining ties, clamping blocks thereon, an angle bar formed integrally with said plate and having as described the inner vertical part to engage the rail web or webs, a fish-plate arranged to engage the tread and the base of the opposite side of the rail or rails, and bolts passing through said plate, through the web or webs and through the angle bar whereby the rail or rails are aligned, strengthened and fastened, substantially as described. 3rd. The combination in a rail joint, of the rail or rails, with a plate upon the upper surface of which the same are adapted to rest clamping blocks for securing the rails on the plate, bolts for fastening the said blocks and extending beneath the said plate, an angle bar raised on one edge of the plate and having the inwardly extending part and the inner vertical part to be bolted to the web of the rail, said inwardly extending part consisting of a higher horizontal portion and the plate slanting end parts and the brackets so arranged to strengthen the angle bar, all parts of the said bar being formed integrally with said plate, substantially as described. 4th. The combination with the 2 adapted to extend across adjoining ties of the clamping blocks and bolts therefor for securing the rail or rails thereon, said plate provided with a centrally depending and integral truss, an integral angle bar formed on the top of the plate and extending in to engage the web or webs of the rail or rails, the fish-plate arranged to engage the other side of the rail or rails, and bolts extending through and locking together said fish-plate, rail, web and bar, substantially as described. 5th. The combination with the plate 2, of the angle bar formed integrally therewith, rail clamps and bolts for securing together the bar and rail or rails to be aligned thereby, the space beneath the angle bar and trace being larger than the rail base whereby the bearing is had on the web of the rail, substantially as described. 6th. The combination, with the rail or rails, of the tie plate 2, having the rail chair ends whereon the rails are adapted to rest, said ends being wider than the rest of the rail, the vertical part or ledge 13 arranged parallel with the base of the rail or rails, the inwardly extending part having the raised middle portion 16, side trusses 22 extending from the rail chair ends thereto, the inner vertical part 19, said part grooved on its inner side whereby bearing surfaces are provided at the upper and lower surfaces thereof, and the brackets of braces 30 arranged, substantially as described, all of said parts being formed integrally. 7th. The combination, with the rail or rails, of the tie plate having the rail chair ends whereon the rails are adapted to rest, said ends being wider than the rest of the rail, said plate provided with a central depending truss having divided ends extending up to the edges of the plate, means for clamping the rail or rails thereon, the vertical part or ledge 13 arranged upon the upper surface of the plate and parallel with the rail base, the inwardly extending part jutting inward over the rail base and having the vertical portion 19 integrally tied or braced therewith, said vertical part, the web or webs having coincident bolt holes and bolts arranged therein whereby said part and web or webs are drawn into firm engagement, substantially as and for the purpose specified. 8th. The combination, with the rail or rails, of the tie plate 2, having the extending rail chair ends whereon the rails are adapted to rest, said ends being wider than the rest of the rail, said plate provided with an integral central depending truss, having divided ends extending up to the edges of the plate, means for clamping the rail or rails thereon, the vertical part or ledge 13 arranged upon the upper surface of the plate and parallel with the rail base, the inwardly extending part jutting inward over the rail base and having the vertical portion 19 integrally tied or braced therewith, a fish plate to engage the base and the tread of the opposite side of the rail from said vertical point, the web, and fish plate provided with coincident bolt holes, bolts arranged therein and nuts thereon whereby said three parts are drawn into solid engagement, substantially as described. 9th. The combination, with the rail or rails, of the plate 2 whereon the same are adapted to rest, the ends of said plate being provided with the extended edges 23 and 31, notches 32 therein, the integral angle bar or brace having the inner part adapted to engage the web or webs of the rail or rails, clamping blocks for securing the same on the plate, the side of said plate opposite said angle bar which is integral with the plate being without vertical projections, the ties, and spikes 33 driven into the same and arranged in said notches, the heads of said spikes engaging the tops of the rail base or bases, substantially as and for the purpose specified. 10th. A truss fastening for rail joints comprising in combination with a rail, a plate having a truss formed integrally therewith, and arranged centrally on the under side thereof, with diagonal trusses also formed integrally with said plate, and extending from the ends of said central truss towards the edges of said plate, and means for securing the meeting ends of the rails to said plate, substantially as described. 11th. A truss fastening for rail joints, comprising in combination with the rails a plate having a truss formed integrally therewith, and arranged centrally on the under side of said plate, and transverse trustes also formed integrally with said plate and the central truss, and extending from the ends of said central truss towards the edges of said plate, substantially as described. 12th. A truss fastening for rail joints, comprising in combination with the rails a plate having a truss formed integrally therewith, and arranged centrally on the under side of said plate, and diagonal trusses also formed integrally with said plate and the central truss, and extending from the ends of soid central truss towards the edges of said plate, substantially as described. 12th. The combination with the tie plate adapted to extend across and between adjoining ties, of a depending truss integral with said plate and having divided ends, an opening or openings through the web of said truss, the rails, the inclined portions 8 beneath said plate, the clamping blocks to engage the same and the rail bases, a bolt or bolts for fastening said blocks, the same having polygonal heads, and the inclined surface ribs between which said head or heads of the bolts is seated as described. 14th. The combination with the tie plates, of the depending truss thereof provided with divided ends all integral with said plate, means for clamping the rail or rails upon said plate, and a strengthening truss formed on the uppper surface of saip plate, substantially as described.

No. 40,190. Printing Telegraph.

(*Télégraphe autographique.*)

William Wallace Taylor, Mansfield, Massachusetts, and Ellen Maria Leavens, Providence, Rhode Island, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. The combination, with the type levers of a typewriter, a second set of type levers, and dial plates connected with the typewriters and provided with contact points, of a contact arm for each dial provided with a contact point, a pointer fixed to the same spindle above said contact arm, a key carried by the pointer, electrically operated means for shifting the contact arm and pointer of the receiving apparatus, electrically operated devices for depressing the type levers of the same, and electrical connections, substantially as described. 2nd. The combination, with a typewriter type lever, of a disk provided with spaced projections, a spring actuated lever provided with a projection, a pinion connected with disk, a toothed rod extending in the path of the type lever, and means for shifting the lever projection into and out of contact with the disk projections, substantially as shown and described. 3rd. The combination, with the type levers of a type writer, a disk provided with contact points, a central spindle, a contact arm insulated on the spindle and provided with a contact point, an indicating pointer attached to the spindle above the contact arm, and a key carried by the pointer, of a rod connected with a type lever and adapted to be operated by the pointer key, said rod being also connected with a lever connecting with a typewriter lever, an armature carried by the rod, a magnet carried by the pointer and arranged in a shunt circuit opposite the armature, and electrical connections, substantially as described. 4th. The combination, with the type levers of a typewriter, a disk provided with contact points, a central spindle, a contact arm carried by the spindle and insulated therefrom, said contact arm being provided with a contact point, of a ratchet wheel on the spindle, an electro-magnet, an armature provided with a pawl adapted to engage the ratchet wheel, and electrical connections, substantially as shown and described. 5th. In a telegraphic typewriter apparatus, the combination, with the type levers of a typewriter, of a gear rod 7, mounted in the standard 4, the gear 6, and disk 5 connected therewith, said disk being provided with projections 9, and studs 14, 15, the arm 11, having projection 12, and spring 13, and the upright 10, said parts being electrically connected and adapted to transmit in dots and dashes the character

represented by the typewriter type levers to which they are attached. 6th. The combination, with the type lever of a typewriter, of a dial plate having characters thereon corresponding with the characters of the typewriter, a pointer to indicate the character to be printed, a key provided with a spindle mounted in said pointer, and a rod connecting with said key spindle and with the type lever of the typewriter, so that by depressing said key and spindle, the typewriter type lever will be actuated and the indicated character printed on the typewriter, substantially as described. 7th. The combination, with the pointer 23, journalled to the sleeve 22, and provided with magnet 34, and key 25, having spindle 27, and supporting spring 26, of the dial plate C, having contact pieces 29, contact arm 24, metal plate 30, spring 31, magnet 33, armature 41, spring 42, pawl 43, and ratchet wheel 44, journalled to the spindle 21, the parts being connected to the line wire 1, by shunt circuits and to the ground wire 1^1, by the contact piece 29 and dial plate C, substantially as described. 8th. The combination, with the pointer 23, key 25, spindle 27, and magnet 34, of the armature 35, rod 28, loop 37, walking beam 38, upright 39, rod 40, and typewriter type levers 20, said parts being connected with an electric current, substantially as described. 9th. The combination, with the pointer 23, of a spring actuated ivory plate 47, adapted to open and close the circuit between the spindle 27, and rod 28, substantially as described. 10th. The combination, with the pointer 23, key 25, spindle 27, and lever 49, of the plate 47, stud 50, slot 51, and sleeve 52, substantially as described. 11th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, electrically operated devices connected with said type levers and adapted to operate the carriage of the typewriters, substantially as described. 12th. A printing telegraph, consisting essentially of typewriters electrically connected and having means for operating the type levers, levers arranged parallel with the type levers and having similar means for operating the same, and devices connecting said levers with the carriages of the typewriters so as to operate the same, substantially as described. 13th. A printing telegraph, consisting essentially of typewriters electrically connected and having means for operating the type levers thereof, a paper supply roll mounted in the typewriter carriages and having means for feeding the paper through the typewriters, a box mounted on the typewriter carriages and having a suitable opening therein, a vertically movable knife adapted to cut off the paper at a desired time and place, means for moving said knife, and a suitable guide for directing the message into the box, substantially as described. 14th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, the combination, with said machines, of levers similar to the type levers, and pivoted in the machines parallel therewith, and having similar means of operation, and an upwardly extending frame fixed to said levers, and adapted to engage the cylinder and carrriage levers of the typewriters and actuate the same, substantially as described. 15th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, the combination, with said machines, of levers similar to the type levers, arranged parallel therewith, and having similar means of operation, and rods pivoted to said levers and connected with opposite arms of the upper and lower case shifting mechanism of the typewriters so as to actuate the same, substantially as described. 16th. In a printing telegraph, consisting essentially of electrically connected typewriters having means for operating the type levers thereof, said typewriters having a carriage adapted to be shifted for upper and lower case type printing, the combination, with said machines, of levers similar to the type levers, pivoted therein parallel with the type levers, and having similar means of operation, a sleeve pivoted in the frame of the typewriters, and provided with an upwardly extending arm to engage the carriage, and two laterally and oppositely extending arms, and rods connecting said arms with the operating levers, so that the case shifting mechanism may be thereby operated, substantially as described. 17th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, said typewriters having a carriage adapted to be shifted for upper and lower case type printing, the combination, with said machines, of operating levers similar to the type levers, pivoted therein parallel with the type levers, aed having similar means of operation, a sleeve pivoted in each of the type writer frames, and having an upwardly extending arm to engage the carriage and two oppositely extending arms, rods connecting said arms with the operating levers so that the shifting mechanism may be thereby operated, a spring actuated dog pivoted in the frame and adapted to engage one of said arms and hold the carriage in a fixed position, and a detaching device connecting said dog with one of the case shifting connecting rods, substantially as described. 18th. In a printing telegraph, consisting of two electrically connected typewriters having means for operating the type levers thereof, the combination, with suitable supports mounted on the carriages of said machines and carrying a paper supply roll adapted to be fed through the machine, and a box mounted in said supports and having an opening in the lower portions thereof provided with a guide as shown, of frames fixed to opposite sides of the machines and carrying two horizontal bars which extend across the top of the machine and between which the messages pass, and a knife having means for moving them past the openings between the bars, said knives having upon their upper sides guides to direct the messages into the box, substantially as described. 19th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers, the combination, with operating levers similar to the type levers, and arranged parallel therewith, and having similar means for operation, and horizontal bars extending above the typewriters and between which the messages pass, of a knife connected with said operating levers and adapted to be moved thereby past the opening between the bars and sever the messages, substantially as described. 20th. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, the combination, with a gong mounted in the machines, of a lever similar to the type levers, and arranged parallel therewith, and having similar means of operation, said lever having at one end a hammer to strike the gong when the lever is actuated, substantially as described and for the purpose specified. 21st. In a printing telegraph, consisting of electrically connected typewriters having means for operating the type levers thereof, the combination, with a lever similar to the type levers, and arranged parallel therewith, and having similar means in operation, of a rod pivoted to the end of said lever, and having at its opposite end a pawl engaging with a rack of the typewriter carriage, an insulated boss fixed the rod and connected with a wire of a battery, a contact piece adapted to engage said boss when the rod is raised, a magnet suitably supported and connected with said contact piece, a rod pivoted to the rack pawl so as to extend downwardly therefrom, and having an armature thereon opposite the magnet, a screw terminal mounted in a support and connected with a battery wire, and a spring hook connected with the magnet and arranged between the pawl rod and screw terminal so as to make and break the circuit and actuate the pawl, rack and carriage, substantially as described. 22nd. In a printing telegraph, a private message box composed of two hinged portions, and having an opening in the lower part thereof, and means for guiding the messages through said opening, substantially as described. 23rd. In a printing telegraph, consisting of electrically connected typewriters having means, as shown for operating the same, a private message box adapted to receive a message as described, and a shield adapted to cover the printing cylinder while the message is printed, substantially as described. 24. The combination, with the arms 68, and vertically movable frame 73, of the shield 79, pivoted to the arms, and connected to the frames so as to be raised and lowered in unison therewith and cover the cylinder 55, substantially as shown and described and for the purpose set forth.

No. 40,191. Thrashing Machine.

(Machine à battre.)

Wilhelm Alpert, Brandenburg, Prussia, 1st September, 1892; 6 years.

Claim.—1st. In a threshing machine, the combination with a cylinder and grating, of a shaft, disks on the same, and connecting rods connecting said disks with the grating and means for turning said shaft, substantially as set forth. 2nd. In a threshing machine, the combination, with a threshing cylinder and grating of a shaft, disks on the same, connecting rods pivoted on the disks and connected with the upper and middle parts of the gearing, pivoted levers also connected with the disks and extending under the grating and a handle for turning said shaft, substantially as set forth.

No. 40,192. Air Heating Apparatus.

(Appareil de chauffage à air chaud.)

John A. Kirkpatrick, Anthony, Kansas, U. S. A., 1st September, 1892; 6 years.

Claim—1st. The combination of the base having the ash pit, the top plate covering the latter and having the central opening and concentric series of radial slots or draft openings, the radially slotted rings arranged to oscillate over the latter, and the central circular plate mounted upon cleats or flanges and arranged to slide in an outward direction, substantially as and for the purpose set forth. 2nd. The combination of the base having the ash pit, the top plate covering the latter and having the central opening and concentric series of radial slots or draft openings, the slotted oscillating rings covering the latter, the sliding centre plate, the fire pot, and the fire basket mounted upon the inner edge of the outer radially slotted annular oscillating ring, substantially as and for the purpose set forth. 3rd. The combination of the base having the ash pit, the top plate covering the latter and having the concentric series of radial slots or draft openings, and the oscillating fire basket provided at its lower edge with an outwardly extending radially slotted annular flange, substantially as and for the purpose set forth. 4th. The combination of the base having the ash pit, the top plate for latter, the fire pot, the fire basket and a hinged lid or cover for the latter, all arranged and operated, substantially as set forth. 5th. The combination of the fire pot, the fire basket, the hinged lid adapted to partially cover the latter, and mechanism operated by the furnace door for raising said lid by opening said door, substantially as and for the purpose set forth. 6th. The combination, of the base, the fire pot, the fire basket, the furnace casing, and the lid having pipes connected therewith and extended through the sides of the furnace casing to form hinges for the said lid, substantially as and for the purpose set forth. 7th. The combination, with the fire

basket, of the lid consisting of the upper and lower circular plates connected at their outer edges, said upper plate being provided with a dome having laterally extending pipes extending through the furnace casing to form hinges for the lid, substantially as and for the purpose set forth. 8th. The combination of the base, the fire pot, the fire basket, the furnace casing, the lid having pipes extending through the furnace casing, the lid having pipes extending through the furnace casing and forming hinges for the lid, and the counterbalance weights attached to one or both of said pipes outside the furnace casing, substantially as and for the purpose set forth. 9th. The combination of the base, the fire pot, the fire basket, the furnace casing having the fuel door, the lid having pipes extending through the furnace casing and forming hinges for said lid, an arm extending forwardly from one of said pipes, a bell crank lever pivoted to the furnace casing and having a horizontal arm bearing against the under side of said forwardly extending arm, and a hooked arm or rod swivelled to the upper end of the vertical arm of said bell crank lever, and having its outer hooked end connected with the inside of the fuel door of the furnace casing, substantially as and for the purpose set forth. 10th. The combination, of the base, the fire pot, the fire basket, the furnace casing having the fuel door, the lid having pipes extending through the furnace casing, and mechanism connecting said lid with the fuel door, whereby when the latter is opened the said lid shall be automatically raised for the admission of fuel, substantially as and for the purpose herein set forth. 11th. In an air heating apparatus, the combination, with a series of vertically arranged hot air flues, which are substantially rectangular in cross section and arranged parallel to each other, of cleaning mechanism for scraping soot and other obstructions from between said flues, and comprising a series of hinged rods connected with and adapted to be operated simultaneously by a single rock shaft, substantially as and for the purpose set forth. 12th. The combination, of the furnace casing, a series of vertically arranged hot air flues, arranged parallel to each other, a rock shaft arranged transversely in rear of the bases of said hot air flues, arms or rods hinged to the furnace casing in rear of the upper corners of the said hot air flues and intermediately between the latter, arms extending rearwardly from the rock shaft, and pivoted rods connecting the rear end of said arms with the lower ends of the hinged arms, substantially as and for the purpose herein set forth. 13th. The combination, with the furnace casing, of the vertically arranged hot air flues, the hinged arms arranged in rear of and intermediately between the said flues, the rods hinged to the outer free ends of said arms, and mechanism for manipulating the latter simultaneously, substantially as and for the purpose set forth. 14th. The combination, of the base, the fire pot, the furnace casing, the hot air flues arranged vertically in the latter in rear of the fire pot, the rock shaft arranged transversely in the furnace casing in rear of the lower ends of the hot air flues, the arms hinged in the furnace casing in rear of the upper corners of and intermediately between the hot air flues, the arms extending rearwardly from the rock shaft, the pivoted rods connecting said arms with the hinged arms, and the rods hinged to the free ends of the latter, whereby by a single manipulation of the rock shaft the soot and other obstructions shall be thrown from between the hot air flues forwardly into the fire pot, substantially as and for the purpose herein set forth.

No. 40,193. Cash Indicator and Register.

(Registre et indicateur de monnaie.

The National Cash Register Company, Dayton, Ohio, Assignee of Edward B. Parkhurst, Woburn, Massachusetts, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. In a cash register and indicator, the combination, with the tablet rods and tablets and their supporting bar and the operating keys, of a ratchet wheel actuated by said keys and arranged upon the operation, of a key to move the supporting bar to release the elevated tablet bar and permit the ascent of the newly operated one, substantially as and for the purpose described. 2nd. In a cash register and indicator, the combination, with the operating keys and the tablet rods and tablets, of the supporting bar E and the ratchet wheel w, with its operating mechanism, substantially as and for the purpose described. 3rd. In a cash register and indicator, the combination, with the tablet rods and tablets, their supporting bar E, the ratchet wheel w, arm j, pawl e^1, and link h, of the key lever c, plate f, and arm g, substantially as and for the purpose described. 4th. In a cash register and indicator, the combination, with the gong and its hammer, a series of operating keys, and a vibrating bar extending across and actuated by the operation of any one of said keys, of a ratchet wheel actuated by the movements of said bar upon the operation of any key to trip the gong hammer and sound the gong, substantially as and for the purpose subscribed. 5th. In a cash register and indicator, the combination, with the gong D, its hammer m, the wheel w^1, arm j^1, pawl e^1, and link p^1, of the key levers c, table f, and an arm g, substantially as and for the purpose described. 6th. A cash indicator having a ratchet, as w, for each bank of keys, mounted on a shaft, as k, and operated by pawl mechanism actuated from the key levers, in combination with a pivoted bell hammer lever adapted to engage with the teeth of one of said ratchets, and a tablet rod supporting bar, as E, in contact with another of said ratchets, whereby each time a key is depressed, moving the ratchets one tooth, the bell is rung, and a table rod is allowed to drop, substantially as shown and described. 7th. In a cash register and indicator, the combination, with an operating key provided with a rack, of a pawl arranged to engage said rack when the key is partially operated and to be disengaged therefrom when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key, substantially as and for the purpose described. 8th. In a cash register and indicator, the combination, with an operating key pivoted between its ends and provided with a rack, of a pawl arranged to engage said rack when the key is partially operated and to be disengaged therefrom when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key, substantially as and for the purpose described. 9th. In a cash register and indicator, the combination, with an operating key provided with a rack having a projection at one end, of a pawl arranged to engage said rack when the key is partially operated and to be disengaged therefrom by the projection at the end of the rack when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key to permit the re-engagement of the pawl with the rack, substantially as and for the purpose described. 10th. In a cash register and indicator, the combination, with a rack having a projection at its lower end, of a pawl arranged to engage said rack as the key is operated and the rack lifted and to be disengaged therefrom by the projection at the lower end of the rack when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key, substantially as and for the purpose described. 11th. In a cash register and indicator, the combination, with an operating key pivoted between its ends and provided with a rack having a projection at one end, of a pawl arranged to engage said rack when the key is partially operated and to be disengaged therefrom by the projection at the end of the rack when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key, substantially as and for the purpose described. 12th. In a cash register and indicator, the combination, with the pivoted key lever c, provided with the rack c^1, having the projection g^1, of the pawl e^1, the latch d^1, and the pivoted table f, arranged to trip said latch upon the resetting of the key, substantially as and for the purpose described. 13th. In a cash register and indicator, the combination, a series of operating keys, of a horizontal bar, extending across said keys and arranged to engage a partially operated key and prevent its being reset and to be disengaged therefrom when the key has been fully operated, a latch for holding said bar and key out of engagement while the latter is being reset, and a trip for said latch operating automatically to trip the latch upon the resetting of the key, substantially as and for the purpose described. 14th. In a cash register and indicator, the combination, with a series of operating keys, each provided with a rack, of a bar extending across the entire series of keys and arranged to engage and act as a pawl for each one of said racks to prevent any key of the series being reset when only partially operated and to be disengaged therefrom when the key has been fully operated, and a latch arranged to hold said bar and rack out of engagement while the key is being reset and to be released upon the resetting of the key, substantially as and for the purpose described. 15th. In a cash register and indicator, the combination, with a series of operating keys, each provided with a rack having a projection at one end, of a bar extending across the entire series of keys and arranged to engage and act as a pawl for each one of said racks to prevent any key of the series being reset when only partially operated and to be disengaged from said rack by the projection on the latter when the key has been fully operated, and a latch arranged to hold said bar and rack out of engagement while the key is being reset and to be released upon the resetting of the key, substantially as and for the purpose described. 16th. In a cash register and indicator, the combination, with the operating keys, each provided with a rack, of a pawl arranged to engage said rack when a key is partially operated and to be disengaged therefrom when the key has been fully operated, a latch for holding the pawl and rack out of engagement while the key is being reset, and a vibrating bar or table extending across and actuated by the operating keys and arranged to trip said latch upon the resetting of said key, substantially as and for the purpose described. 17th. In a cash register and indicator, the combination of the key levers c, each provided with a rack c^1, the pawl bar e^1 engaging said rack, means for automatically disengaging said bar from said rack upon the full operation of the key, the latch d^1, for holding the bar e^1, out of engagement with the rack c^1, while the key is being reset, and the table f, extending across the operating keys c, and arranged to trip the latch d^1 upon the resetting of the key, substantially as and for the purpose described. 18th. In a cash register and indicator, the combination of the key levers c, each provided with a rack c^1, having a projection g^1 at its lower end, the pawl bar e^1 engaging said rack, the pivoted latch d^1, and the table f, arranged to depress the front end of said latch and release the bar e^1 upon the resetting of an operated key, substantially as and for the purpose described.

No. 40,194. Graphophone. (*Graphophone.*)

The American Graphophone Company, assignee of John Howard White, all of Washington, Columbia, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. In a graphophone, and in combination with a suitable record surface, a travelling carriage and a recorder and a reproducer independently hinged to said carriage to swing into and out of their operative positions, whereby the machine is adapted for recording and reproducing sounds without disconnection of the parts. 2nd. In a graphophone, the combination with a suitable record surface of a travelling carriage, a fixed guide, a sliding sleeve revoluble about said guide, a recorder hinged to said sleeve to swing vertically; whereby the recorder is permitted a vertical motion independent of the sleeve when in action but caused to swing into and out of an operative position by the rotation of the sleeve. 3rd. In a graphophone, the combination of a tubular slotted guide, an internal feed screw, a travelling carriage encircling the guide, a sliding nut mounted on the carriage, a spring to cause its engagement with the screw, and a rotary sleeve acting upon the nut to effect the disengagement from the screw. 4th, In a graphophone, the tubular slotted guide and internal feed screw, in combination with the sliding carriage, its spring actuated nut to engage the screw, the rotary sleeve acting to control the nut, and the reproducer hinged to said sleeve; whereby the sleeve is caused to serve the two fold purpose of releasing the carriage and of throwing the reproducer into and out of its operative position. 5th. In a graphophone and in combination with a suitable record surface, a travelling carriage, a recorder hinged to the lower part of said carriage, and a reproducer hinged to the upper part of the carriage to turn downward over the recorder to an operative position. 6th. In a graphophone, and in combination with a suitable recording surface, a graviating recorder, a speaking tube, and a tube support independent of the recorder. 7th. In a graphophone, the hinged gravitating recorder, in combination with the speaking tube, the hinged support for said tube and a stop to limit the descent of said support. 8th. In a graphophone, the combination of the recorder and the independent tube support, the two mounted on a common axis and having a telescopic connection. 9th. In a graphophone, the graviating recorder, the independent tube support having telescopic connection therewith, and an intermediate packing to prevent the leakage of air between them. 10. In a graphophone, the combination with a suitable record surface and style of a diagram constructed from aluminium as distinguished from other materials. 11th. In a graphophone, and in combination with a style, a sheet metal diagram peripherally sustained and provided at or near its margin with one or more annular ribs or corrugations, substantially as described. 12th. In a graphophone, the combination of an annular frame, an aluminium diaphragm peripherally secured therein and provided with an annular rib or corrugation and style rigidly secured to the centre of said diapragm. 13th. In a graphophone, the combination of a diaphragm, a style having shoulders seated against a tenon inserted through said diaphragm, a pin passed through said tennon, and wax or like adhesive material applied over and around said parts, substantially as described. 14th. In combination with the gravitating recorder frame and the underlying recording cylinder, the recorder support consisting of the lever pivoted at one end to recorder frame and provided with a rounded surface to bear upon the record cylinder, and an adjusting screw mounted in the frame and acting upon the opposite end of the lever. 15th. In combination with a tubular reproducer arm having the cylindrical journal or axis, h^3, at its upper end, the supporting arm h, enclosing said journal provided with tube h^1, communicating through the tubular arm. 16th. In a graphophone, and in combination with the carriage having the recorder and the reproducer connected respectively to its upper and lower ends, the tubular guide passing through the upper part of the carriage, and the guide c^4 embraced by the lower part of the carriage.

No. 40,195. Churn. (*Baratte.*)

Olivier Linebarger and George Ouderkirk, both of Council Bluffs, Iowa, U.S.A., 1st September, 1892; 6 years.

Claim.—In a churn, the combination of the dasher shafts N, extended in width at the lower ends to form walls R, and the inverted V-shaped perforated dasher blades O, having open ends k, and extending from the inner sides only of the shafts, substantially as and for the purpose set forth.

No. 40,196. Hydrocarbon Oil Burner.

(*Foyer à hydrocarbures.*)

Byron H. Elwood, assignee of Charles Reamon, both of Fort Plain, New York, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. A hydrocarbon oil burner, in which is comprised a casing, having an air inlet provided with a regulating valve, a burning device consisting of a tube connected at one end to said casing, and held in place in a perforated lining extending from the casing by means of a ring near each extremity, an oil supply pipe provided with a regulating valve entering said casing, and extending into the above mentioned tube, the said oil supply pipe being provided with an oil outlet at its upper side near the inner end, and bearing a series of rods extending to the flaring portion of the lining, the whole combined and arranged, substantially as shown and described. 2nd. A hydrocarbon oil burner, in which is comprised a casing having an air inlet pipe provided with a regulating valve, a burning device consisting of a tube held in place in a fire brick lining connected at one end with said casing, an oil supply pipe passing through the casing and extending into the tube in said lining, and carrying a series of distributing rods extending to the flaring opening in the lining, the whole combined and arranged, substantially as set forth. 3rd. In a hydrocarbon oil burner, the combination with a burning device consisting of a tube seated in a perforated lining, the opening in said lining having a flaring mouth, of an oil supply pipe having a perforation in its upper side, and bearing a series of oil distributing rods extending from the oil supply pipe to the flaring mouth of the lining, substantially as shown and described.

No. 40,197. Mop Wringer. (*Essoreuse de torchon.*)

Cassius A. White and Olin N. Wardwell, Jamaica, Vermont, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. In a wringer of the class described, the combination, with opposite clamping side walls loosely coupled at their lower ends, and walls connected to the opposite edges of the inner clamping side wall and embracing the outer wall, and provided with bearings and pail embracing legs located at the outer edges of the end walls, of a shaft mounted in said bearings and provided with a cam adapted to operate against the adjacent wall, and a lever for operating the shaft, substantially as specified. 2nd. In a wringer of the class described, the combination, with opposite walls loosely connected at their lower ends, one of said walls being provided near its lower end with a series of laterally disposed rods or pins passing through and beyond openings in the opposite wall and forming a bottom between the walls, of means for compressing the walls, substantially as specified. 3rd. In a wringer of the class described, the opposite walls loosely coupled at their lower ends, in combination, with a spring interposed between the walls, and means for compressing the walls against the spring, substantially as specified. 4th. In a wringer of the class described, the combination, with a fixed wall having a series of perforations, pins projecting laterally from the wall, a transverse cleat secured to the lower end of the same, opposite side walls perforated and secured to the fixed wall and terminating at their outer ends in depending pail embracing legs and provided at one side of the same with bearings, of a movable wall having countersunk openings in its lower end, screws passed through the same and into the cleat of the fixed wall, a stop cleat secured to the inner face of the outer wall above the cleat of the inner wall, a V-shaped spring interposed between the two walls, a shaft mounted in the bearings of the end walls and provided with a cam extending therefrom and bearing against the adjacent movable wall, said shaft extending beyond one of its bearings, a lever mounted upon the shaft and rigidly connected therewith, and a transverse cleat secured to the cam and to the lever, substantially as specified. 5th. In a wringer of the class described, the combination, with oppositely flat walls loosely coupled together at their lower ends and provided with a spring for keeping the walls normally separated at their upper ends, of an operating hand lever provided with a cam for closing the walls together at their upper ends, said walls being oppositely perforated, substantially as described. 6th. In a wringer of the class described, the combination, with opposite flat walls loosely coupled together at their lower ends and provided with a spring for keeping the walls normally separated at their upper ends, of an operating hand lever provided with a cam for closing the walls together at their upper ends, said walls being oppositely perforated, and a series of rods or pins 4, rigidly secured to one wall and passing through openings of the other wall and the pail embracing means, substantially as specified.

No. 40,198. Camera. (*Camera.*)

The Blair Camera Company, assignee of Thomas Henry Blair, Boston, and John Howland Crowell, Vineyard Haven, all in Massachusetts, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. A camera shutter having a perforation for exposing the camera lens opening, and solid portions on two opposite sides thereof for closing the same and adapted to be moved in two opposite directions for the purpose of exposing and closing the lens opening during each of its opposite movements, substantially as set forth. 2nd. A camera shutter having a perforation for exposing the camera lens opening, and solid portions on two opposite sides thereof for closing the same, and a double acting spring connected to said shutter and adapted to move the latter in two opposite directions, substantially as specified. 3rd. A camera shutter having a perforation for exposing the camera lens opening, and solid portions on two opposite sides thereof for closing the same, a double acting spring for moving the shutter in two opposite directions, a notched locking bar connected to said spring and shutter, and a spring pressed releasing trigger, substantially as and for the purpose set forth. 4th. A camera shutter having a perforation for exposing the camera lens opening, and solid portions in two opposite sides thereof for closing the same, a double acting spring for moving the shutter in two opposite directions, a notched locking bar connected to said spring and shutter, and a yielding stop lever adapted to rest against one of two projections on the shutter for making time exposures, substantially as specified. 5th. A camera shutter adapted to be moved in two opposite directions and having a double acting spring, a locking device and a trigger for its operation, combined with a rotary disk,

and a reciprocating slide actuated by it and connected to the double acting spring for the purpose of bending the latter in either of its two opposite directions by rotating said disk in one and the same direction, substantially as specified. 6th. A camera shutter adapted to be moved in two opposite directions and having a double acting spring, a locking device and a trigger for its operation, combined with a rotary disk, a slide operated by the latter and connected to the spring, and a clutch or binder for preventing the said disk from being rotated in more than one direction, substantially as and for the purpose set forth. 7th. A camera shutter adapted to be moved in two opposite directions and having a double acting spring, a locking device and a trigger for its operation, a rotary disk and a reciprocating slide for actuating said spring, combined with a perforation in the camera wall, and a perforated slide or gate adapted to be closed by the release of the trigger, substantially as specified. 8th. A camera shutter adapted to be moved in two opposite directions and having a double acting spring, a locking device and a spring pressed trigger for its operation, and a rotary indexed disk and connecting mechanism to the shutter as described, combined with a camera wall perforation, a sliding perforated gate adapted to be opened by the movement of the rotary index disk, and to be held in such open position by means of a spring pressed locking bar, and returned to its closed position by the release of the trigger, substantially as and for the purpose set forth. 9th. In a camera, a shutter releasing device and a marking or punching device actuated by the former for the purpose of automatically marking or punching the sensitive paper or film, substantially in a manner as specified. 10th. In a camera, a shutter releasing device and a trigger for releasing the shutter, combined with a sensitive film or paper marking or punching device, having a punch or marker automatically operated in one direction by the shutter releasing device, and in the opposite direction by means of a spring, substantially as specified. 11th. In a camera, a reciprocating or oscillating shutter, an adjustable spring for setting and actuating it, and a locking device for securing it in a closed position, combined with a releasing trigger or shutter releasing device, and a sensitive film or paper marking device, automatically operated by the shutter releasing device, substantially as specified. 12th. A camera having its rear end provided with a light excluding lining of cloth or its equivalent, combined with a cover having a similar lining for the purpose of guiding the sensitive film or paper beneath such linings without light exposure, substantially as set forth. 13th. In a camera, a shutter releasing device and a film marking device actuated by said releasing device, combined with the end plate or cover P^{11}, having a cut away portion P^{1}, for exposing the marked part of the film or paper, substantially as set forth. 14th. In a camera, a shutter releasing device and a film or paper marking device actuated by the former, combined with a yielding pressed tension device for guiding and holding the sensitive paper of film in proper position relative to the marking device, substantially as and for the purpose set forth. 15th. A camera having a plate or cover at its rear end, and a cut away portion thereon for the purpose of exposing a portion of the sensitive paper or film, substantially as and for the purpose set forth.

No. 40,199. Time Signal for Railways.

(Signal horaire pour chemins de fer.)

The Fontaine Safety Signal Company, Detroit, Michigan, assignee of Eugene Fontaine, Auburndale, Ohio, U. S. A., 1st September, 1892; 6 years.

Claim.—1st. A railway time signal of the kind described, comprising an air compressing device operated by a passing train, an air receiver chamber communicating therewith and provided with a rising and falling diaphragm, a signal dial mounted on the post, actuating clock mechanism for operating the index hand of said dial, a clutch in the actuating shaft of the clock mechanism controlled by the rising and falling diaphragm of the air receiving chamber to engage and disengage said clutch, and a retracting weight or its equivalent for the index hand, substantially as described. 2nd. In a time signal, the combination, with an air compressing device and its actuating lever operated by a passing train, of a signal dial mounted on a hollow post, actuating clock mechanism mounted in the base of said post, a shaft operated by said clock mechanism and provided with an extension into the top of the post and operating the index hand of the dial, an intermediate clutch mechanism consisting of the notched disk revolving with the shaft of the clock mechanism, and the hinged dog on the extension of said shaft, a rising and falling guide rail on which said dog is adapted to travel, an air receiving chamber provided with a rising and falling diaphragm, and an actuating connection of said diaphragm with the rising and falling guide rail, substantially as described. 3rd. The combination, with the hollow signal post, of the clock mechanism mounted in the base thereof, and with the actuating shaft in line with axis of the post, a stop formed on the upper end of said shaft, an extension of said shaft into the top of the post and supported on said top, the clutch mechanism between said shaft and its extension, the bevelled pinion secured to the upper end of said shaft extension, the transverse shaft carrying the bevelled pinions engaging with the bevelled pinion on the extension of the shaft, the index hands secured to said transverse shaft, and the dials mounted on top of the post, substantially as described. 4th. The combination, with the lever E, operated by a passing train to control the time signal, of the box B, inclosing such lever and provided with an aperture through which the inner end of said lever projects into proximity to the rail, and the rail clip C, securing the inner end of such box to the rail, substantially as described. 5th. The combination, with the lever operated by a passing train to control the time signal, of the box B inclosing such lever, the rail clip C, securing the box to the rail, the piston F carried by the free end of the lever, and the air cylinder G secured in the aperture of the box, substantially as described. 6th. The combination, with the shaft O, of the actuating clock mechanism of the signal, of the notched disk P secured thereto, the step Q formed thereon, the shaft extension R supported thereon, the hinged dog S adapted to engage with the notched disk P, the fixed zero stop *p*, the fixed disengaging stop *o*, and the back stop *r*, substantially as described. 7th. The combination, with the shaft O of the clock mechanism, of the signal of the notched disk P revolving therewith, the step Q formed on said shaft, the shaft extension R supported thereon, and operating the index hand of the signal dial, the hinged dog S adapted to engage with the notched disk, the rising and falling guide rail U, the fixed zero stop *p*, and the weight *l*, and its connection with the shaft R to retract the index hand, substantially as described. 8th. The combination, of the shaft O of the clock mechanism of the signal, the notched disk P revolving therewith, the step Q formed on said shaft, the shaft extension R supported thereon and operating the index hand of the signal dial, the hinged dog S adapted to engage with the notched disk, the rising and falling guide rail U, the fixed zero stop *p*, the fixed disengaging stop *o*, the back stop *r*, and the weight *l*, and its connection with the shaft R to retract the index hand, substantially as described. 9th. The combination, with the shaft O, of the actuating clock mechanism of the signal, of the notched disk P secured thereto, the shaft extension R adapted to revolve independently of the shaft of the clock mechanism, the dog S secured to said shaft and adapted to engage with the notched disk, the rising and falling guide rail U on which said dog is adapted to travel, the vertical frame V carrying said guide rail, the air receiving chamber W, the rising and falling diaphragm Y, and the lever Z bearing upon the centre of said diaphragm and operating the frame V, substantially as described.

No. 40,200. Time Signal for Railways.

(Signal horaire pour chemins de fer.)

The Fontaine Safety Signal Company, Detroit, Michigan, Assignee of Eugene Fontaine, Auburndale, Ohio, U.S.A., 1st September, 1892; 6 years.

Claim.—In an automatic railway time signal, a signal actuating lever pivotally fulcrumed, and having a short arm extending into proximity to the rail and a resiliently-jointed long-arm connected to the signaling devices, substantially as described. 2nd. In an automatic railway time signal, the lever B, having a jointed long arm and actuated by a passing train on its short arm, and provided with the elastic cushion *j* in its long arm, substantially as described. 3rd. The combination with the rail of the signal actuating lever B provided with the cross head G arranged parallel to the rail, and with the resiliently-jointed arm consisting of the integral arm I, the arm H, fulcrumed thereon, and the elastic cushion J, secured between, substantially as described. 4th. The combination with the rail, of the signal actuating lever B, the housing C, in which said lever is fulcrumed and the clip E securing the housing to the rail, substantially as described. 5th. The combination, with the signal actuating lever operated by a passing train and consisting of two parts resiliently jointed together of an air-compressing device consisting of a cylinder and a piston operated by said lever, and of induction and eduction ports upon opposite ends of the cylinder, whereby the device operates as a dash pot, substantially as described. 6th. The combination, with the signal actuating lever operated by the passing train, of the air-cylinder K, the piston L, actuated by said lever and operating non-air-tight in said piston, the induction valve communicating with one end of said cylinder, and the eduction valve S communicating with the opposite end of the piston, substantially as described. 7th. The combination of the signal actuating level B, provided with the cross head G and the arm H, the housing C inclosing said lever, and provided with the abutment D. the clamp bolts E, securing said housing to the rail, the air compressing cylinder K, secured to the housing and the piston L connected to the lever, substantially as described. 8th. The combination with the rail, of the lever B provided with the cross head G, and the resiliently-jointed arm H, the housing C in which said lever is fulcrumed, the abutment D of the housing fitted on to the rail, the clips E securing the housing to the rail, the spring T, the air cylinder K secured to the housing, the piston L, the link M, connecting the piston rod and the arm H of the lever, the induction port N, the induction valve P, the induction pipe O, the eduction port Q, the eduction valve S, and the eduction pipe R all combined and arranged to operate substantially as described. 9th. The combination with the lever, consisting of two parts resiliently jointed together and the air-compressing device actuated by the passing train, of the air-receiving cylinder, the rising and falling piston in said cylinder, the gear mechanism connecting it with the index hand, the ventand automatically operating valve for the escape of the compressed air from the cylinder after the cylinder is forced up, and the air relief for the receding piston, substantially as described. 10th. The combination, of the air receiving cylinder *e*, the piston *f*, operated by the passing train, the piston rod *g*, provided with a rack bar, the clock

mechanism provided with the actuating spring and adaped to wind on its arbor, the gear wheel *j*, engaging with the rack bar, the gear mechanism connecting the index with the arbor of the clock mechanism, and the clutch *t*, on the arbor, substantially as described. 11th. The combination, of the index hands *s*, on opposite sides of the signal dial, the shaft r^{11}, the bevel pinions *r*, r^1, journalled upon said shaft, and carrying the index hands, the intermeshing bevel pinion *q*, the vertical shaft *o*, carrying the said pinion, the bevel pinion *n*, on the lower end of said shaft, the clock mechanism, the arbor *k*, of the clock mechanism, and the bevel pinion *m*, on said arbor, engaging with the bevel pinion *n*, substantially as described. 19th. The combination, with the actuating lever, operated by a passing train, and its air compressing device actuated by said lever, of the hollow post *a*, provided with the box *c*, the time signal mounted on the top of said post, the air receiving cylinder *e*, provided with the piston *f*, the pipe R, connecting the air receiving cylinder with the air compressing device, the clock mechanism mounted in the box *c*, the gear mechanism connecting the arbor *k*, of said clock mechanism with the piston of the air receiving cylinder, and the signal staff and gear mechanism connecting said arbor with the index hands, substantially as described.

No. 40,201. Apparatus for Ordering Tobacco.

(*Appareil pour traiter le tabac.*)

Samuel Pleasants Mayo and Gustavus Adolphus Peple, both of Richmond, Virginia, U.S.A., 1st September, 1892; 6 years.

Claim.—1st. The combination, with a fan and moistening channels, of an ordering room an air supply pipe leading from the moistening channels, pipes leading from this air supply pipe and located in the room, said pipes having discharge openings therein, means for regulating the amount of discharge, and pipe or pipes for withdrawing the air from the ordering room, substantially as set forth. 2nd. The combination, with a fan, and ordering room, of successive channels with endless cloths of any material in said channels, sprinkling pipes leading inside of the cloths and having valves to regulate the discharge, and a heater for discharging heat into the channels, substantially as set forth.

No. 40,202. Machine for Making Clay Conduits.

(*Machine pour faire des conduits en argile.*)

James J. Powers and Robert Van Buren, both of Brooklyn, New York, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. In a machine for making clay conduits, a moulding cylinder provided with a removable head furnished with rigid rods extending down into the cylinder and forming cores for the longitudinal openings of the conduits, substantially as specified. 2nd. In a machine for making clay conduits, the combination, with the moulding cylinder, of rods forming the cores of the conduits, and fixed and movable heads provided with projections and recesses for recessing and tubulating the ends of the conduit sections, substantially as specified. 3rd. In a machine for making clay conduits, the combination, with the moulding cylinder C, provided with angled slots at the lower end thereof, of the head supporting spider *m*, provided with the arms *l* projecting through the angled slots of the moulding cylinder and provided with bevelled surfaces *n*, and wedges n^1 operated by the propelling power of the moulding cylinder for releasing the spider, substantially as specified. 4th. In a machine for making clay conduits, the combination of the power cylinder, the moulding cylinder, an intermediate head carrying core rods, the moulding piston, the resistance head, the spider support, and means, substantially as described, for elevating and lowering the spider. 5th. The combination, with the moulding cylinder, of a lateral power filling cylinder, substantially as specified.

No. 40,203. Spring Motor. (*Moteur à ressort.*)

Swan Peterson, Gibson City, Illinois, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. In a motor of the class described, the combination, with the framework, the walking beam fulcrumed therein and provided with opposite counterbalancing weights, and a connecting rod extending from the beam and adapted to be connected with devices to be operated, of a train of spring actuated speed increasing gearing terminating in a crank disk, a wrist pin extending from the crank disk, a lever fulcrumed at its upper end between the beam and crank disk, an arm extending from the fulcrum of the beam and moving with the latter, a link pivotally connecting the outer end of the lever with the aforesaid crank disk, substantially as specified. 2nd. In a motor of the class described, the combination, with the suitable framework comprising the uprights 3, 14 and 15, the shaft 1, mounted in the uprights 3, the walking beam fulcrumed at its centre upon the shaft, the arm 9 the connecting rod 32, loosely connected at its upper end to the walking beam at one side of the fulcrum, the sleeves 6, mounted on the beam at opposite sides of the fulcrum and terminating in hooks 7, the weights loosely hung upon the sleeves, the set screws 35, passing the sleeves and bearing on the beam, the winding shaft 16, terminating at one end in a crank key, journalled in the uprights 14, the gear 17 on the shaft, the coiled spring 18, secured to and wound upon the shaft, and having its outer end connected to the uprights 14, the upper and lower shafts 20 and 21, the gear 23, mounted on the shaft 21, the small gear 25, mounted on the shaft 21 and engaged by the gear 17, the crank disk 22, having slot 26 mounted on the shaft 20, and the small gear 24, mounted on the shaft 20 at one side of the gear 22, and engaged and driven by the large gear 23, of the lever 11, located between the disk 22 and the inner end of the beam 4, and havin its inner end pivoted as at 10, to the standards 3, the link 12 loosely connected as at 13, to the lever 11 and to the free end of the arm 9, and the link 28, loosely connected to the outer end of the lever 11 and to the wrist pin 27, loosely and adjustably mounted in the slot 26 of the disk, substantially as specified. 3rd. In a motor of the class described, the combination, with the shaft 1 and its bearings, of the walking beam fulcrumed at its centre thereon, a rock arm mounted on the fulcrum and adapted to move with the beam, a connecting rod connected with the outer end of the beam and adapted to be connected with the device to be operated, a train of speed increasing gears terminating in a crank disk, a spring for actuating the same, the lever pivoted at its inner end, a link between the lever and rock arm, and a link between the crank disk and the outer end of the lever, substantially as specified

No. 40,204. Valve Gear. (*Mécanisme de soupape.*)

The Bruno Nordberg Company, assignee of Bruno V. Nordberg, all of Milwaukee, Wisconsin, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. In a valve mechanism, the combination, with the triangular oscillating or rocking wrist lever, and means for moving the same, of links H, H, extending from the apex of the wrist lever to steam arms, and links E, E, extending from the lower corners of the wrist lever to the exhaust arms. 2nd. In a valve mechanism, the combination, with a valve and its arm, of an actuating lever, a link connecting the arm and lever, and means, substantially such as shown, for varying the lap of the valve without changing the throw of the arm. 3rd. In a valve mechanism, the combination, with a valve, of an arm, means for adjusting the valve relatively to the arm to vary the lap of the valve, an actuating lever, and a non-adjustable connection between the arm and lever. 4th. In a valve mechanism, the combination, with a lever, of a valve provided with a valve stem G, a sleeve secured to the stem, an arm adjustably mounted on the sleeve, and a link connecting the arm and lever. 5th. In a valve mechanism, the combination, with a lever, of a valve provided with a valve stem G, a sleeve secured to the stem and provided with shoulders *u*, an arm mounted upon the sleeve, a set screw or screws carried by the arm and bearing against the shoulder, and a link connecting the arm and lever. 6th. In a valve mechanism, the combination, with a cylinder provided with suitable valves, of a wrist lever or frame, a steam arm, a drop lever, means for actuating the arm and releasing the lever, a vacuum pot pivoted to the bonnet of the exhaust valve, and a connection between the drop lever and the moving part of the vacuum pot. 7th. In a valve mechanism, the combination, with a cylinder provided with suitable valves and with bonnets for the latter, of a dash pot mounted upon the bonnet of one of the valves, and a drop lever connected with the dash pot and serving to actuate the other valve. 8th. In a valve mechanism, the combination, with inlet and exhaust valves and bonnets therefor, of a dash pot mounted upon the exhaust valve bonnet and connected with the inlet valve. 9th. In a valve mechanism, the dash pot comprising two parts *m* and *n*, one part (*m*) serving to actuate the steam valve, and the other part (*n*) being provided with a hub *o* to fit upon the bonnet Q of the exhaust valve. 10th. In combination with a bonnet Q, cylinder *n*, provided with hub *o* to fit upon the bonnet, a plunger *m*, provided with a rod *o*, and a drop lever connected with the rod O and with the steam valve. 11th. In combination, with the cylinder *n*, of a dash pot, a plunger *m*, provided with a threaded neck *x*, and a connecting rod O provided with a threaded stem *w*. 12th. In combination with valve stem K, drop lever N secured thereto, arm I mounted on the bonnet, and bearing on the bonnet each side of the lever N, and means for releasing the drop lever. 13th. In combination with a valve stem K, and a bonnet J, a drop lever secured to the stem and projecting out through the side of the side of the bonnet, an arm I mounted on the bonnet each side of the drop lever, and provided with a slotted or cut away hub to receive the lever, and means for releasing the lever. 14th. In combination with the drop lever, rocking pin, and cam, an arm I having its hub *i*, cut away as at *r*, so as to force the drop lever down should its dash pot fail to act. 15th. In combination with the drop lever, rocking pin, and cam, arm I provided with an extension *a* and lugs *c*, bar or plate *c* carried by the pin, and a spring *f*. 16th. In combination, with a bonnet having a removable end cap and an opening in one side, a valve stem supported by the cap, and a drop lever carried by the stem and projecting through the side of the bonnet. 17th. In combination, with a bonnet having a lateral opening, a valve stem, and a drop lever carried by the stem and projecting through the lateral opening. 18th. In combination, with a bonnet having an internal bearing J^2, a cap plate J^1, and a valve stem supported in the bearing J^2, and cap plate. 19th. The combination, with a bonnet having a cap J^1, of a valve stem, and an adjustable stem carried by the cap plate to take up the end thrust on the valve stem. 20th. The circular knock off plate L provided with a cam block l^1. 21st. In combination, with the bonnet of a stem valve, a cap J^1, and a knock off plate journalled upon the outer face of the cap, substantially as and for the purpose set forth. 22nd. In combination, with lever I, a knock off plate L, a drop lever N, a rocking pin *b*, provided with a bar or plate *c*, and a long spring *f* having its free end nearer the centre of the pin *b*, than is the fixed end.

No. 40,205. Method of Electrical Metal Working.

(Méthode de travailler les métaux par l'électricité.)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. The herein described method of metal working, consisting in creating electric stress or resistance in a continuous metal bar or blank by subjecting the blank at or near the part to be worked to magnetism and simultaneously therewith passing through the blank, including the said part, an electric current of sufficient volume to soften the said part, and then bending, shaping, or otherwise working or treating the part. 2nd. The herein described method of metal working, consisting in subjecting the blank at or near the part to be worked to the action of a magnetic field and simultaneously therewith subjecting a portion of the blank, including the said part, to the heating action of an electric current of sufficient volume to heat the said part, removing the source of magnetism when its effect is nil, and continuing to supply said current until the part is sufficiently softened, and then working or treating the said part as desired. 3rd. The method of metal working, consisting in creating electric stress or resistance in a metal bar or blank connected in circuit by subjecting the part of a blank to be heated and worked or otherwise treated to magnetism and simultaneously therewith passing through said blank, including the said part, an electric current of suitable volume, and then working or treating the said part as desired. 4th. The method of metal working, consisting in subjecting the part of a blank to be worked or otherwise treated to a magnetic field and simultaneously therewith subjecting the bland, including the said part, to the heating action of an electric current of suitable volume flowing in a direction different from the direction of the lines of force in the said magnetic field, and then working or treating the said part as desired. 5th. The method of metal working, consisting in subjecting the part of a blank to be worked or otherwise treated to a magnetic field and simultaneously therewith subjecting the blank, including the said part, to the heating action of an electric current of suitable volume, having its direction at angles, or substantially at right angles to the direction of the lines of forces in the said magnetic field, and then working or treating the said blank as desired. 6th. The method of metal working consisting in subjecting the entire cross section of a blank at or near the part to be heated and worked or otherwise treated to a magnetic field and simultaneously therewith subjecting the blank, including the said part, to the heating action of an electric current of suitable volume having its direction at right angles, or substantially at right angles, to the direction of the lines of force in the said magnetic field, and then working or treating the said blank as desired. 7th. The method of metal working, consisting in creating electric stress or resistance in a metal bar or blank by subjecting the entire cross section of a blank to a magnetic field of uniform strength and simultaneously therewith passing through the blank, including the magnetized part, an electric current of sufficient volume to soften the said part, and then working or treating the part desired. 8th. The method of metal working, consisting in connecting the blank to be heated and worked in a circuit by independent universally movable connections, passing an electric current through the circuit of sufficient volume to heat or soften the blank, and then moving said connections and handling and working the blank as desired. 9th. The method of metal working, consisting in clamping, by independent universally movable clamps, the bar or blank of metal at the points, leaving a section of the metal between the clamps connecting the clamps by flexible low resistance conductors with the source of heating current, passing an electric current through the flexible conductors, clamps, and section of metal between them, so as to soften the metal, and then moving said clamps and handling and working or treating the blank as described. 10th. The method of metal working, consisting in clamping the bar or blank of metal at two points, leaving a section of the metal between the clamps, flexibly connecting the clamps by flexible low resistance conductors with the source of heating current, subjecting the metal between the clamps to magnetism, and simultaneously therewith passing an electric current through the flexible conductors, clamps, and section of metal between them, so as to soften the metal, and then handling and working or treating the blank as desired. 11th. The method of metal working, consisting in creating resistance to the electric current in a metal bar or blank at or near the part to be heated and worked, passing an electric current through the bar or blank of sufficient volume to soften the same at the part wherein the resistance is created, and then working the blank as desired. 15th. The method of metal working, consisting in flexibly connecting the bar or blank to be heated and worked in an electric circuit, creating resistance to the electric current in the bar or blank at or near the part to be heated and worked, and passing an electric current through the said bar or blank of sufficient volume to soften the same at the part wherein the resistance is created, and then handling and working the blank as described.

No. 40,206. Method of Magnetically Reducing Friction. (*Méthode de reduire magnetiquement la friction.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. The method of decreasing friction between the bearings of two magnetic parts, consisting in subjecting the bearing parts to magnetism of like polarity to separate the parts or reduce the pressure between the bearings. 2nd. The method of decreasing friction between the bearings of two paramagnetic parts, consisting in subjecting the bearing parts to magnetism of like polarity, and subjecting to magnetism of unlike polarity another paramagnetic part in proximity to one of the said parts and diametrically opposite the other of said parts to separate the parts or reduce the pressure between their bearings. 3rd. The method of decreasing friction between the bearings of a magnetic part upon a non-magnetic part, consisting in subjecting to magnetism of a certain polarity, another part in proximity to the magnetic part and diametrically opposite the non-magnetic part to separate the latter two parts, and reduce the pressure between their bearings. 4th. The method of decreasing friction between the bearing parts of a vehicle, consisting in establishing an electric circuit on the vehicle, including the coils of electro-magnets, and subjecting the bearing parts to magnetic force tending to separate the bearings or reduce the pressure between them. 5th. The method of decreasing friction between the bearing parts of a vehicle, consisting in establishing an electric circuit on the vehicle, including the coils of electro-magnets wound to produce in the bearing parts magnetism of like polarity to separate the bearings or reduce the pressure between them. 6th. The method of decreasing friction between the bearing parts of an electrically propelled vehicle, consisting in establishing a shunt circuit around the electric motor on the vehicle, including the coils of electro-magnets, and subjecting the aforesaid bearing parts to magnetic force tending to separate the bearings or reduce the pressure between them. 7th. The method of decreasing friction between the bearing parts of an electrically propelled vehicle having line working conductors along its path and a conductor passing through the motor, with its terminals in movable contact with the line conductors, consisting in establishing a shunt circuit around the motor on the vehicle, including the coils of electro-magnets, and subjecting the aforesaid bearing parts to magnetic force tending to separate the bearings or reduce the pressure between them. 8th. The method of decreasing friction between the bearing parts of a vehicle, consisting in establishing an electric circuit on the vehicle, including the coils of electro-magnets, subjecting the bearing parts to magnetic force tending to separate the bearings or reduce the pressure between them during the movement of the vehicle, and arresting said force when the vehicle is at rest. 9th. The method of decreasing friction between the bearing parts of a vehicle, consisting in establishing an electric circuit on the vehicle, including the coils of electro-magnets, and subjecting the bearing parts to variable magnetic force tending to separate the bearings or reduce the pressure between them. 10th. The method of decreasing friction between the bearing parts of a vehicle, consisting in establishing an electric circuit on the vehicle, including the coils of electro-magnets, subjecting the bearing parts to variable magnetic force tending to separate the bearings or reduce the pressure between them during the movement of the vehicle, and arresting said force when the vehicle is at rest. 11th. The method of decreasing friction between the bearing parts of an electrically propelled vehicle having line working conductors along its path and a conductor passing through the motor, with its terminals in movable contact with the line conductors, consisting in establishing a shut circuit around the motor on the vehicle, including the coils of electro-magnets, subjecting the aforesaid bearing parts to magnetic force tending to separate the bearings or reduce the pressure between them during the movement of the vehicle, and arresting said force when the vehicle is at rest. 12th. The method of decreasing friction between the bearing parts of an electrically propelled vehicle having line working conductors along its path and a conductor passing through the motor, with its terminals in movable contact with the line conductors, consisting in establishing a shunt circuit around the motor on the vehicle, including the coils of electro-magnets, subjecting the aforesaid bearing parts to variable magnetic force tending to separate the bearings or reduce the pressure between them during the movement of the vehicle, and arresting said force when the vehicle is at rest.

No. 40,207. Car Step. (*Marche-pied de chars.*)

Francis W. Jones, Perryville, Maryland, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. Steps for a railway carriage, comprising a fixed frame and movable treads adapted to be folded so as to present a substantially plane surface, or opened to offer a foothold, the frame and treads constituting a close or tight surface in either position, whereby the circulation of air currents through the steps is prevented. 2nd. Steps for a railway carriage, comprising a fixed frame and a series of treads pivotally mounted so as to rock therein, fixed stops on the frame to limit the movement of the treads in either direction, and a shifting lever accessible to an operator on the platform, adapted to rock all of the treads simultaneously in either direction. 3rd. Steps for a railway carriage, comprising a fixed frame, a series of treads pivotally mounted so as to rock therein, dust bars or walls between the treads shaped to permit an opening and closing movement of the treads, the surface of the steps being closed at all points to prevent air currents passing through in either position, and a controlling lever for shifting the treads. 4th. Steps for a railway carriage, comprising a fixed frame having a series of pivoted treads, as 4, a series of dust bars and stops, as 11, 14, between the treads, a controlling lever, as 9, connecting rods, as 7, and a lock piece for the lever in its extreme positions. 5th. Steps for a railway carriage, comprising a

fixed frame, a series of treads pivotally mounted so as to rock therein, the frame and treads forming a substantially plane surface when closed and offering a foothold when opened, a gate on the platform leading to the steps, and a controlling device for simultaneously opening or closing the gate and the treads, as and for the purpose set forth.

No. 40,208, Salt Cellar and Sprinkler. (*Salière.*)

Frederick Norman Dixon, Philadelphia, Pennsylvania, U. S. A., 3rd September, 1892; 6 years.

Claim.—1st. The combination, with a salt containing receptacle, a cap, secured in place therein and adapted to be rotated, and means for forcing contained salt into contact with said cap, substantially as set forth. 2nd. In combination, with a salt containing receptacle, a cap, provided with perforations and embodying slots and knife edges, secured in place on said receptacle and adapted to be rotated with reference thereto, and means for forcing contained salt into contact with said cap, substantially as set forth. 3rd. In combination, with a salt containing receptacle, a cap, and a spring actuated follower, substantially as set forth. 4th. The combination to form a salt container and sprinkler, of a body, a cap, embodying openings, secured in a place thereon and adapted to be rotated, a removable bottom, a follower, and a spring, substantially as set forth. 5th. The combination to form a salt containing receptacle, of a body, a cap embodying perforations, slots and knife edges, and secured in place on said body and adapted to be rotated with reference thereto, a removable bottom, a follower, and a spring, substantially as set forth. 6th. The combination to form a salt containing receptacle, of a body, a cap secured in place on said body and adapted to be rotated with reference thereto, a removable bottom, a follower provided with a guide flange, and a spring, substantially as set forth. 7th. The combination to form a salt containing receptacle, of a body provided with an outwardly flaring lip and a removable bottom, a cap, embodying perforations and knife edges, the outer edge of which cap is bent downwardly and inwardly to enclose said lip, and means for forcing contained salt against said cap, substantially as set forth. 8th. The combination to form a salt containing receptacle, of a body, a cap, provided with perforations and secured in place thereon and adapted to be rotated, and also free for limited vertical movement with reference to said body, a follower and means for occasioning the travel of said follower, substantially as set forth. 9th. The combination to form a salt containing receptacle, of a body provided with a flaring lip, a cap, provided with a downwardly extended flange the lower end of which is inturned beneath the lip of the body, said cap being free for rotary and limited vertical movement with reference to the body, a follower, a spring, and a bottom, substantially as set forth. 10th. The combination to form a salt container and sprinkler, a body, a cap, a removable bottom, a follower, and a spring, the arrangement being such that the salt contained in the container, and the top, are pressed against and may be rotated with reference to each other, substantially as set forth. 11th. In combination, the body, the cap, the bottom, the follower, and the spring, substantially as set forth.

No. 40,209. Car Coupler. (*Attelage de chars.*)

Aaron Lougheed, Port Arthur, Ontario, Canada, 3rd September, 1892; 6 years.

Claim.—1st. A car coupler, consisting essentially of a draw head having a flaring mouth and a longitudinal recess, extending rearwardly from the mouth, a vertical tubular recess extending from top to bottom of the frame near the mouth thereof, a coupling pin vertically movable in said vertical recess, a sleeve with a slide rod therein adapted to move in said longitudinal recess, and a spring actuated pronged lever pivoted below the frame, one arm of which projects through a recess of the draw head and engages the sleeve and slide rod therein, and another arm of which engages the lower end of the coupling pin through a slot in the draw head, whereby by turning said lever the sleeve and slide rod may be moved in the longitudinal recess and the coupling pin in the vertical recess of the coupling frame, substantially as described. 2nd. A draw head having a lower projection near its mouth, and a vertical aperture extending therethrough and adapted to receive a coupling pin therein, and having said recess closed at the top by a removable plug or cover, substantially as described. 3rd. In a car coupler, the combination, with a draw head having a longitudinal and a vertical recess, of a sleeve adapted to slide in the longitudinal recess, a coupling pin adapted to move in the vertical recess, and a spring actuated forked lever engaging with one arm the said sleeve, and with another arm the coupling pin, substantially as shown and described. 4th. In a car coupler, the combination, with a draw head provided with a longitudinal recess having a shoulder *i*, of the sleeve J, the rod K, having the incline *h*, and the spring actuated lever H, engaging said sleeve and rod, substantially as shown and described. 5th. A car coupler, consisting substantially of a draw head having a flaring mouth C, longitudinal recess B, and shoulder *i*, and pin aperture D therin, the coupling pin E, adapted to move in said pin aperture, a guide rod F, pivoted below the mouth C, and having means as spring *d*, for holding it in extended position, the sliding sleeve J, having slide rod K therein, and a shoulder *h*, to engage the shoulder *i*, and hold the coupler in uncoupled position, and the four armed lever H, pivoted to the lower part of the coupler frame, having means as spring L and chain M, to actuate the same and having an arm, as 1, projecting through a slot in the draw-head to engage the sleeve J and slide rod K, and an arm extending through a slot in the wall of the tubular projection D^1 into aperture D, to engage the coupling pin E, whereby by turning said lever it will actuate the sleeve J, slide rod K, and pin E, substantially as described. 6th. The combination, with the drawhead A, of the guide rod F, pivoted below the mouth thereof, and having means, as spring *d* and coupling pin E, to hold it in extended position, and means, as prolonged upper end P^1 and arm 1, of spring actuated lever H, to hold it inwardly, substantially as described. 7th. In a car coupler, the pin E, adapted to move vertically in the drawhead, having its upper end rearwardly inclined so as to draw a coupling link, and its lower end provided with a horizontal slot *g*, to receive the end of the arm of a lever, substantially as described. 8th. The combination, with the drawhead A, having longitudinal recess B, pin aperture D, and recess *l* therein, and the pin E, adapted to move in the aperture D, of the sleeve J, and slide rod K, therein, said sleeve having a shoulder *h*, to engage a shoulder *i*, of the drawhead, and said slide rod having an inclined tongue K^1, to engage shoulder *i* and release said shoulders *h* and *i* from engagement, the pronged lever H, pivoted below said drawhead, having arms 1 and 2 to engage the sleeve J, slide rod K and pin E, and the spring L, attached to an arm 3 of the lever H and adapted to actuate said lever and coupler parts, substantially as described. 9th. The combination, with the frame A and sleeve J, having means, as shown, for moving it in the recess B and having a shoulder *h*, to engage the shoulder *i*, of the coupler frame, of the slide rod K, adapted to slide in said sleeve, having means, as spring *l*, for pressing it forward in said sleeve, and having a depending tongue K^1, with an inclined rear edge adapted to engage the shoulder *i* of the coupler frame and raise said rod and sleeve in the recess B, substantially as shown and for the purpose described. 10th. The combination, with the lever H, pivoted to the lower side of the coupler frame and having arms 1 and 2, to engage the coupler parts as described, and an arm 4, for connection with a suitable operating lever, of the spring L, having one end attached to the arm 3 of the lever H and the other end to the lower face of the drawhead, and adapted by pressure to turn the lever H and actuate the coupler parts, substantially as shown and described.

No. 40,210. Shoe Sewing Machine.

(*Machine à coudre pour chaussures.*)

Andrew Eppler, Boston, Massachusetts, U. S. A., 3rd September, 1892; 6 years.

Claim.—1st. In a curved needle sewing machine, the combination, with the needle, looper and work holding devices, of the cast off, the rock shaft supporting the same, a spring and connecting devices between the same and the said rock shaft whereby a yielding pressure is imparted to said rock shaft and cast off in one direction, and means substantially as described, whereby the rock shaft and cast off are positively impelled in the opposite direction, as set forth. 2nd. In a curved needle sewing machine, the combination, with the needle, looper and work holding devices, of the cast off, the rock shaft supporting the same, a cam as *o*, the slide reciprocated by said cam, means for connecting said slide and rock shaft, and a spring and devices connecting the same with the rock shaft whereby a yielding pressure is imparted to said slide, rock shaft and cast off, as set forth. 3rd. In a curved needle sewing machine, the combination, with the needle, looper and work holding devices, of the cast off, the rock shaft *i* supporting the same, the cam *o*, the slide I engaged with said cam, the rod *k* connecting the slide with an arm *l* on the rock shaft, and a spring and devices connecting the same with the rock shaft whereby a yielding pressure is exerted on the slide, the cast off and the intermediate devices, as set forth. 4th. In a curved needle sewing machine, the combination, with the needle, looper and work holding devices, of the cast off, the rock shaft *i* supporting the same, the cam *o*, the slide I engaged with said cam, the rod *k* connecting the slide with an arm *l* on the rock shaft, a pivoted arm *u* bearing at its free end on the rod *k*, and a spring *r* bearing upon the arm *u* whereby said arm is pressed downwardly upon the rod, as set forth. 5th. The combination, with the needle, looper and work holding devices, of the cast off, a rock shaft upon which it is mounted, a cam, and loose connections between the rock shaft and cam, a spring interposed in such loose connections to impart a yielding pressure to the rock shaft and cast off, a stud *s* supporting the spring, and the plate *t* engaged with one end of the spring and provided with means for holding it in different positions, substantially as set forth. 6th. The combination of the fixed channel gauges and the oscillating looper arranged at one side of the material, and the curved needle, the back gauge and the oscillating cast off arranged on the other side, loose connections for said cast off and its source of motion, and a spring interposed therein to impart to said cast off a yielding pressure toward the point of the needle, substantially as and for the purposes set forth.

No. 40,211. Check Controlled Lock.

(*Serrure actionnée par un ticket.*)

James Raguet Buckingham, Mount Vernon, Ohio, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. A lock of the character described, comprising a case having a forwardly extending recessed arm thereon, a letter pivoted

in the case and having a curved arm extending forward parallel with the recessed arm, a chute at one end of the case, said chute having an opening at the top and also at the bottom near one side of the case, a locking lever pivoted in the case, said lever having one end extending into the chute and having a shoulder adapted to engage the crooked lever, a swinging catch pivoted in the case and extending into the chute adjacent to the locking lever, and an arm pivoted to the catch and extending through the wall of the case, substantially as described. 2nd. A lock of the character described, comprising a case having a forwardly extending recessed arm thereon, a crooked lever pivoted in the case having an arm extending parallel with the recessed arm, a chute produced at one end of the case and having a top and side opening, a locking lever pivoted in the case, said lever having one end extending into the chute and having a shoulder to engage the crooked lever, an inclined way in the chute leading to the side opening thereof, and a manually operated catch pivoted in the case, and extending into the chute above the inclined way, substantially as described. 3rd. In a lock of the ch racter described, the combination, with the main case and the chute at one side of the case, of the swinging crooked lever pivoted in the case and having an extending arm adapted to fit upon an article to be locked up, a locking lever pivoted in the case and extending into the chute, said lever having a shoulder to engage the crooked lever, an inclined way produced in the bottom of the chute, and extending to one side thereof, and a releasing catch at one side of the lever, adapted to release a check held thereupon, substantially as described.

No. 42,212. Steam Engine. (*Machine à vapeur.*)

Dexter D. Hardy, Ernest Dale Owen, Mark T. Leonard and Franklin D. Hardy, all of Chicago, Illinois, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. The combination, in an engine, of a crank shaft, two cylinders of unequal diameters, located axially in line with each other on opposite sides of the crank shaft, radially thereto, having their outer ends closed, two connected pistons in said cylinders, a steam pipe for constantly supplying steam to the smaller cylinder, a steam pipe communicating with the large cylinder, and a valve mechanism for alternately admitting steam to and exhausting steam from the larger cylinder. 2nd. In an engine, substantially as described, cylinders of unequal diameters, placed axially in line with each other and having their outer ends closed, a frame connecting said cylinders and forming a crank chamber between them, adapted to retain oil and provided with an opening in its top, a cover for said opening, shaft bearings on the frame at right angles to the line of the cylinders, a crank shaft mounted on said bearings and having its crank within the chambers connected pistons working in the cylinders, a rod connecting the pistons with the crank of the shaft a pipe admitting steam constantly to the outer end of the smaller cylinder, a steam chest communicating with the larger cylinder, and a valve mechanism for admitting steam to and discharging steam from said cylinder. 3rd. In a steam engine wherein steam is exhausted from but one end of the piston, only connected pistons of unequal diameter axially in line with each other and placed on opposite sides of the crank shaft, and connected to said crank by a suitable connecting rod, and working within oppositely arranged cylinders of unequal diameter, the larger cylinder being provided with valve mechanism for admitting steam to and exhausting steam from said larger cylinder only, the smaller cylinder being in direct communication with the steam in the boiler, by means of a steam pipe connected in its head. 4th. The combination of a centrally chambered frame, cylinders of unequal diameter arranged axially in line with each other, on opposite sides of the chambers the crank shaft transverse to the axis of the cylinders, connected pistons of unequal areas, the connecting part of which is provided with an elongated opening, through which the shaft p asses, and being provided with openings to permit of the free rotation of the crank and its connections, a head on the outer end of the smaller cylinder provided with a steam pipe for constantly supplying steam to the smaller cylinder, a head on the outer end of the larger cylinder provided with a steam chest, and a valve for admitting steam to and exhausting steam from the larger cylinder only. 5th. The combination of a centrally chambered frame, supporting oppositely placed cylinders of unequal diameter, which stand axially in line with each other, a crank shaft at right angles to the line of the cylinders, connected pistons working in the cylinders actuating the crank shaft, a steam chest communicating with the larger cylinder by means of a valve and suitable arrangement of ports, said valve being operated by means of any suitable mechanism connected to the eccentric on the crank shaft.

No. 40,213. Axle. (*Essieu*).

James T. Miller and Clifford A. Stiles, Atlanta, Georgia, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. As a new article of manufacture, an axle made of a single plate of regular thickness formed into a main channel-shaped portion A, with the integral conical spindle portions B B^1 at each end thereof and a screw threaded cylindrical portion at each of said spindle portions, for the purpose set forth, substantially as described. 2nd. As a new article of manufacture an axle provided with conical hollow spindles, a removable bearing *g* in each spindle, and a retaining ring *i* over each bearing portion for the purposes set forth. 3rd. The combination of the axle A, integral spindles at each end thereof the core J^1 or blocks inside of said axle, and metallic hardened blocks at each end of the core J^1 for the purpose set forth, substantially as described. 4th. The combination of the axle A, spindles B B^1, made integral therewith, the core *j* or blocks within said axle, block *l* at each end of said core, ears *m m* on said block, and adjusting screws *n n*, passing through such ears, for the purpose set forth substantially as described. 5th. The combination of the axle A, integral spindles B B^1 at each end thereof and provided with lips *f f* the bearing piece *g* provided with a similar lip *h*, and the ring *i*, all combined and arranged substantially as and for the purpose set forth.

No. 40,214. Method and Apparatus for the Manufacture of Rails, Girders and Rolled Bars of Various Sections, and Similar Objects. (*Méthod et appareil pour la fabrication des rails, etc.*)

Toussaint Bicheroux, Dusseldolf, Prussia, German Empire, 3rd September, 1892; 6 years.

Claim.—1st. The method of manufacturing rails, girders and rolled bars or the like of various projectiles and dimensions, consisting in first producing blanks of suitable size approximately rectangular in section by rolling, forging or the like, in giving this blank a groove corresponding to the profile to be produced by one pair or several pairs of rollers or otherwise, in drawing out by successive rollers the grooved blank until the profile is approximately of the shape desired, with the flanges pressed together, in spreading the flanges apart and finally finishing the rails or other objects by rolling. 2nd. For bending out the sides of the grooves above referred to, the arrangement consisting of a combination of hydraulic presses with a pair of rollers, such that the rolled bar is pressed into a guide by the first press, a wedge is forced between the flanges by the second press, and the bar is pushed by the third press between the rollers, by which it is finished. 3rd. In the process referred to in claim 1, the use of rollers having recesses for producing rails having their bases locally widened where resting on sleepers.

No. 40,215. Storm or other Lanterns, Lamps, Stoves, etc. (*Fanal, lampe et poêle à l'epreuve du vent.*)

John Thomson Paul and James Paul, both of Edinburgh, Scotland, 3rd September, 1892; 6 years.

Claim.—1st. In a lantern, the combination of a carrying handle cowl B^1, cone C, oil fount D, burner E, glass funnel X, glass globe Y, protected by guard *k*, k^1, k^2, perforated casing e^1, wind guard e^2, guide rods G, vertically movable ventilator plate or globe holder e^3, and lever mechanism for operating same as shown and described. 2nd. In a lantern, lamp or stove, the combination with the frame and the burner portion, of the perforated casing e^1, and wind guard e^2, substantially as and for the purposes hereinbefore described and shown. 3rd. In a lantern, lamp or stove, the combination with the globe holder in the form of a perforated ventilator plate e^3, of air channels or ducts through the sides of the burner operating in conjunction with the perforations in said plate, for the purpose set forth. 4th. In a lantern lamp or stove, the combination with the globe holder in the form of a ventilator plate e^3, of chamber e^4, substantially as and for the purposes hereinbefore described and shown. 5th. The combination of a perforated casing such as e^1, and a ventilator plate such as e^3, substantially as hereinbefore described and shown. 6th. In a lantern, lamp or stove, the combination with the frame or base, of vertical guides, the ventilator plate e^3, adapted to travel upon same, and means for elevating such parts, substantially as and for the purposes hereinbefore described and shown. 7th, In a lantern, lamp or stove, the combination of the globe and funnel mounted upon the movable ventilator plate e^3, and guide rods or uprights 6, substantially as hereinbefore described and shown. 8th. A combined ventilator plate and globe holder, substantially as hereinbefore described and shown. 9th. The flexible globe protector, substantially as and for the purposes hereinbefore described and shown. 10th. The tippet H, substantially as and for the purposes hereinbefore described and shown. 11th. The cop for the oil feeder having a pin and curved recess connection with the neck of the tank aperture, substantially as hereinbefore described and shown.

No. 40,216. Hammer. (*Marteau.*)

Robie Blake, Cornish, Maine, U.S.A., 3rd September, 1892; 6 years.

Claim. 1st. A hammer having a face as *a*, a fixed claw recessed or curved lines across its face, in combination with a movable claw also recessed to fit the fixed claw, the said movable claw being formed with a gripping jaw 1, corresponding to the jaw 2 of the fixed claw, and being also provided with a curved tail *a*, and combined with a spring *u*, bearing upon the tail piece as substantially described. 2nd. In combination with the hammer, a recessed fixed claw, the movable claw recessed to fit the recess in the fixed claw, said movable claw having a curved jaw 1, corresponding with the curved jaw 2 of the fixed claw, and having also curved tail piece reduced to an edge and notched, as and for the purpose set forth. 3rd. In combination with the movable claw recessed and pivoted in the fixed claw, a coil spring inserted in said recess as described and for the purpose set forth.

No. 40,217. Magazine Gun. (*Fusil à magasin.*)

Frank Milton Garland, New Haven, Connecticut, U. S. A., 3rd September, 1892 ; 6 years.

Claim.—1st. In a machine gun, in combination, the barrels, a frame with which the barrels are connected, feeding mechanism, loading mechanism, and firing mechanism, by which the cartridges are fed, loaded and fired, said mechanism being mounted on the frame, a vibrating breech block provided with a loading opening and with a firing pin, mechanism for vibrating the breech block to bring the loading opening and firing pin into and out of line with the barrels alternately, substantially as described. 2nd. In a machine gun, and in combination, the barrels and the reciprocating feeding and loading mechanism carried upon the frame in line with the barrels, mechanism arranged to move a chain of cartridges in rear of the barrels and in a lower plane, vertically reciprocating bars carrying forceps in line with the cartridges, and arranged to grasp a cartridge from the feed chain and to raise it into line with a barrel, and mechanism for alternately reciprocating said bars, substantially as described. 3rd. In a machine gun, and in combination, the barrels and the reciprocating feeding and loading mechanism, carried upon the frame in line with the barrels, mechanism arranged to move a chain of cartridges in rear of the barrels and in a lower plane vertically reciprocating bars carrying spring arm friction forceps in line with the cartridges, and arranged to grasp a cartridge from the feed chain and to raise it into line with a barrel and mechanism for alternately reciprocating said bars, substantially as described. 4th. In a machine gun, and in combination, the barrels and reciprocating, feeding and loading mechanism arranged in line with the barrels, mechanism arranged to move a chain of cartridges in rear of the barrels and in a lower plane, vertically reciprocating bars bearing grasping forceps which are made independently adjustable whereby either may be rendered inoperative, said forceps being also arranged to grasp and raise a cartridge into line with the barrel and mechanism for alternately reciprocating the bars, substantially as described. 5th. In a machine gun, and in combination, with a pair of vertically reciprocating bars bearing forceps, and mechanism for feeding a chain of cartridges into line with the said forceps, mechanism for reciprocating said bars alternately, and a cartridge chain separator supported above and into line with the said chain, substantially as described, whereby the chain is severed by the movement of the separator. 6th. In a machine gun, and in combination, the barrels, the feeding and loading mechanism reciprocating in line with the barrels, mechanism for feeding a cartridge chain in rear of the barrels and below the plane thereof, reciprocating forceps arranged to grasp and raise a cartridge alternately and first to one barrel and then to another, and a rotary cartridge separator consisting of radial cutters arranged to rotate on a shaft by the movement of the feed chain and separate the cartridges from the band, substantially as described. 7th. In a machine gun, in combination with the barrels and the loading and firing mechanism, feed mechanism consisting of a cam, a lever oscillated by the cam, a ratchet driven by the lever, a shaft rotated by the ratchet bearing a sprocket wheel, a parallel shaft bearing a wheel and a feed chain encircling the said wheels, substantially as described. 8th. In a machine gun, in combination with the barrels and the loading and firing mechanism, feed mechanism consisting of a cam, a lever oscillated by the cam, a rod adapted to limit the oscillation of the lever, a ratchet driven by the lever, a shaft bearing a sprocket wheel rotated by the ratchet, a feed wheel on a shaft parallel with the shaft connected with the ratchet, and a feed chain encircling the wheels, substantially as described. 9th. In a machine gun, in combination with the barrels and the loading and firing mechanism, feed mechanism consisting of a cam, a lever oscillated by the cam, a ratchet driven by the lever on a shaft bearing a feed wheel and a retard ratchet on one side of the gun, a wheel on the opposite side and a chain with outwardly projecting arms encircling both of the said wheels, the upper surface of said chain being below the level of the barrels, substantially as specified. 10th In a machine gun and in combination, a barrel and mechanism to feed the cartridges into line with said barrel alternately, a reciprocating spindle having a bolt in line with the barrel and arranged to thrust a cartridge into the barrel in its forward movement, the firing pin, mechanism operated by the backward movement to retract the firing pin, means for forcing forward the firing pin, and trigger mechanism operated by the movement of the plunger, substantially as described. 11th. In a machine gun and in combination with the barrels, a feeding mechanism therefor, whereby the cartridges are brought into line with the barrels, a pair of spindles arranged to reciprocate alternately, independently movable bolts in said spindles, a spring adapted to thrust the bolts forward, mechanism for drawing back the bolts and compressing the spring near the limit of the backward movement of the spindles and a trigger arranged to release the bolt at the beginning of the backward movement of the spindle, substantially as described. 12th. In a machine gun and in combination with the barrels, a feeding mechanism therefor, whereby the cartridges are brought into line with the barrels, a pair of spindles arranged to reciprocate alternately, independently movable bolts in said spindles, a spring adapted to thrust the bolts forward, mechanism for drawing back the bolts and compressing the spring near the limit of the backward movement of the spindles, and a trigger arranged to release the bolt at the beginning of the backward movement of the spindle and to pass over its trip when the spindle moves forward, substantially as described. 13th. In a machine gun and in combination with the barrels and the feeding mechanism therefor, a loading and firing mechanism consisting of a pair of spindles, loading and firing bolts in said spindles operated in one direction by a spring, mechanism for retracting the bolts at the backward movement of the spindles, trigger mechanism operated by the movement of the spindles, a pair of oscillating levers having segmental heads in gear with the spindles and mechanism for oscillating the levers, substantially as described. 14th. In a machine gun and in combination with the barrels and feeding mechanism for the cartridges, alternately reciprocating spindles each bearing a loading and firing bolt and a trigger provided between the lugs on the spindle, one end of the trigger being in contact with a sliding pin adapted to engage a shoulder on the bolt, and the other end having a pivoted pull held rigidly upright on the other side by a spring, substantially as specified. 15th. In a machine gun and in combination with the barrels and mechanism to feed the cartridges, spindles arranged to reciprocate alternately in line with the barrels, loading and firing bolts in said spindles, a trigger and cocking lever pivoted to projections on the spindles, a sear to lock the firing bolts, and a stop on the frame in line with the trigger, said bolt being operated by the cocking lever and having an upper forked end arranged to come in contact with the step on the frame, substantially as described. 16th. In a machine gun and in combination with the barrels and feeding mechanism for the cartridges, alternately reciprocating spindles bearing loading and firing bolts, mechanism operating said spindles and bolt, a lever and a removable upper plate, said spindles being held in ways between said plates, the upper plate being removable when the cover of the frame is opened whereby the spindles may be readily lifted out and removed, substantially as described. 17th. In a machine gun and in combination, two barrels united to a frame which carries feeding, loading and firing mechanism, a vibrating breech block having two loading openings and firing pins, said block being arranged to vibrate to bring alternately a loading opening and a firing pin opposite the breech of the barrel, and mechanism for vibrating the breech block, substantially as and for the purpose set forth. 18th. In a machine gun and in combination, a pair of barrels fixed to the frame, a pair of loading and firing bolts arranged to reciprocate one in line with each barrel, a shaft, and connections between said shaft and the said bolts arranged to operate forward and backward alternately, feeding mechanism having a pair of forceps arranged to operate alternately to bring the cartridges into line with the barrel and connections between said feeding mechanism and the shaft, all substantially as described.

No. 40,218. Rack for Waggon Beds.

(*Ratelier pour wagon-lit.*)

Mathew C. Craig, Boyd, Wisconsin, U.S.A., 3rd September, 1892; 6 years.

Claim.—1st. The combination, with a waggon bed, of racks detachably placed therein in a vertical position, braces secured thereto having their lower ends extending below the said racks, and having their lower ends cut at an angle, and sockets secured to the side boards having open sides and inclined bottoms, whereby the lower edges of the braces rest thereon, with angular ends of the braces firmly against the side boards and brace, the racks in an inclined position, and chains secured to the outer edges of the racks and waggon bed for holding the outer ends of the racks, substantially as shown and described. 2nd. The combination, with the waggon bed, of racks which are supported upon the upper ends of the side boards thereof when in a vertical position, braces secured to the racks having their lower ends extending below the said racks, open sided sockets secured to the side boards for the reception of the lower ends of the braces, the bottoms of said sockets being below the lower ends of the braces when the racks are in a vertical position, eyes secured to the side boards, and guiding hooks secured at their upper ends to the said racks, and their lower ends curved outward and extending into the said eyes, whereby the racks are held against detachment when turned from a vertical to an inclined position and guided in their proper position, substantially as described.

No. 40,219. Mute for Musical Instruments.

(*Sourdine pour instruments de musique.*)

David Genese, Baltimore, Maryland, U.S.A., 3rd September, 1892 ; 6 years.

Claim.—1st. A tubular mute for stringed instruments, substantially as described. 2nd. A mute composed of connected tubes adapted to engage the bridges of a musical instrument, substantially as described. 3rd. A mute for a stringed musical instrument, composed of a sound distributing tube, and sound conducting tubes connected therewith, substantially as described. 4th. A mute for a stringed musical instrument, composed of a sound distributing tube, and pairs of sound conducting tubes secured to opposite sides of the sound distributing tube and adapted to be applied to a bridge, substantially as described. 5th. A mute for a stringed musical instrument, composed of a sound distributing tube, sound conducting tubes, and a cross piece interposed between the sound conducting tubes, substantially as described. 6th. A mute for a stringed musical instrument, composed of a sound distributing tube, sound conducting tubes connected therewith, and a tubular cross piece interposed between the sound conducting tubes, substantially as described.

No. 40,220. Ventilating Heater.

(Chauffeur à ventilation.)

Riverius Marsh, New Brunswick, New Jersey, U. S. A., 5th September, 1892; 6 years.

Claim.—1st. A heater for fire places. having the entire vertical body thereof formed of a continuous piece of sheet metal, so as to provide air spaces at the sides, and having in the front of said air spaces and at the bottom and top of the same openings F and F^1, substantially as herein set forth. 2nd. A heater for fire places, having its entire vertical body formed by a continuous piece of sheet metal, bent up so as to provide air spaces on the sides and rear of the combination chamber, substantially as herein set forth. 3rd. A heater for fire places, having its entire vertical body formed of a continuous piece of sheet metal so as to provide air spaces at the side and rear, in combination with sheet metal base and cap plates, substantially as herein set forth. 4th. A heater for fire places, having its entire vertical body formed of a continuous piece of sheet metal, and provided with air spaces on the sides and rear of the combustion chamber, in combination with the metal base and top, substantially as herein set forth. 5th. A heater having its body formed of a continuous piece of metal bent so as to provide air spaces on the sides and rear, and having at the base air openings into said spaces, and provided with suitable base and top plates, substantially as set forth. 6th. A heater having its body composed of a continuous piece of sheet metal, provided with air space on the side and back, as set forth, and having air openings into said spaces and air escapes G^1 and H^1, from said spaces, in combination with a door K, whereby a ventilated oven is formed, substantially as described.

No. 40,221. Steam Joint for Rotary Pipes.

(Joint de tuyau rotatoire à vapeur.)

John Brainard Morgan, Rockland, and Horatio Adams, Boston, both in Massachusetts. U. S. A., 5th September, 1892; 6 years.

Claim.—1st. In a joint for rotary steam shaft or pipes, a cylinder provided with a supply port, in combination with a pipe having an annular flange, a screw cap on said cylinder, packing and a spring pushed follower bearing against said flange, substantially as described. 2nd. In a device of the character described, a cylinder closed at one end and provided with a supply port, a nut secured in the opposite cylinder end, a rotary pipe having an annular flange for entering said cylinder, packing for said flange, a screw cap for closing said cylinder, and a spring pushed follower engaging said packing, substantially as described. 3rd. In a device of the character described, the cylinder *b*, having the port *d*, and head *g*, in combination with the flanged pipe fitted to rotate therein, the nut, packing, and spring pushed follower, and the screw cap C, all being arranged to operate, substantially as described. 4th. The cylinder, serrated screw cap and locking mechanism, in combination with the flanged rotary pipe and mechanism for packing it in said cylinder, substantially as described. 5th. The steam cylinder and serrated cap closing an end thereof, in combination with locking mechanism for said cap, the flanged pipe B fitted to rotate in said cylinder, a nut secured in said cylinder, packing for said pipe, and a spring pushed follower disposed between said packing and cap, substantially as described. 6th. The cylinder in combination, with the flanged pipe B fitted to rotate therein, and provided with port *w* opening into the cylinder, and the tapped and socketed head *r*, the screw head D, and mechanism for locking it to the pipe head, the cap C, on the cylinder and locking mechanism therefor, packing for said pipe, and the spring pushed follower interposed between said cap and packing, substantially as described. 7th. The combination of the cylinder A, with the pipe B, having the flange *i*, the screw cap C and locking mechanism, the nut *f*, packing rings *h*, *i*, the spring pushed follower *k*, all being arranged to operate, substantially as described.

No. 40,222. Calculator. (*Calculateur.*)

William James Clayton, Robert Stanford and Edward Clayton, all of Halifax, Nova Scotia, Canada, 5th September, 1892; 6 years.

Claim.—1st. A calculator provided with a table having columns indicating the sums total of amount and percentage in cents, and a slide held movably on the said table and provided with transverse slots for viewing the sums total in the colums, the said slide being also provided with columns indicating sums total for dollars of corresponding percentage to that of the table, substantially as shown and described. 2nd. A calculator provided with a table containing a column having consecutive numerals indicating cents, rows of columns indicating sums total for the corresponding amount given in the first column, and percentage headings for each of the columns indicating sums total for the corresponding amount given in the first column, and percentage headings for each of the said columns containing the sums total, substantially as shown and described. 3rd. A calculator provided with a slide containing a column having consecutive numerals indicating dollars, a series of columns arranged next to the first named column, and containing sums total for the amounts given in the first named column, and percentage headings for the said series of columns, substantially as shown and described.

No. 40,223. Cartridge Loader. (*Charge-cartouche.*)

Frank Ruel Baldwin, Jersey City, New Jersey, U.S.A., 5th September, 1892; 6 years.

Claim.—1st. A cartridge loader having a concentric inward projection near its upper end, and provided with vertical flexible fingers in planes coincident with the body of the loader and extending below said projection. 2nd. A cartridge loader having a concentric seat near its upper end, and an annular chamber below said seat provided with parallel walls. 3rd. A cartridge loader having a concentric inward projection near its upper end, and an annular chamber below said projection provided with parallel walls, the inner one of which is resilient. 4th. A cartridge loader having flexible fingers provided with rounded and inwardly bent ends to embrace and protect the broken end of a cartridge while loading. 5th. A cartridge loader having a bell-mouth terminating in an annular contraction forming a throat of a diameter about equal to the inside of the cartridge, a concentric collar forming a seat for the end of a cartridge, and a flexible guard for the upper end of the cartridge. 6th. A cartridge loader having a bell-mouth and a chamber having a shoulder or seat, and vertical and parallel walls to receive the end of a cartridge, the inner one of said walls being flexible.

No. 40,224. Pipe Joint. (*Jo nt de tuyan*).

William Sykes, Walham Green, Middlesex, England, 5th September, 1892; 6 years.

Claim.—1st. A pipe joint comprising a spigot and socket formed of material of the kind herein referred to and provided with corresponding male and female screw threads respectively, and a washer of elastic or flexible material arranged to be compressed between the pipe ends substantially as herein described. 2nd. A pipe joint comprising a spigot and socket formed of material of the kind herein referred to, corresponding male and female screw threaded tubular parts formed of material applied to the spigot and socket respecively and a washer arranged to be compressed between the pipe ends and form a fluid tight joint therewith substantially as herein described. 3rd. A pipe joint comprising a spigot and socket formed of material of the kind herein referred to, corresponding male and female screw threaded tubular parts fixed to the spigot and socket respectively, a collar formed on the spigot, and a washer arranged to be compressed said collar and the adjacent end of said socket substantially as herein described. 4th. A pipe joint comprising a spigot and socket formed of material of the kind herein referred to and having notched or uneven external and internal surfaces respectively, corresponding male and female screw threaded parts fixed to said notched or uneven surfaces of the spigot and socket respectively, and formed of material capable of being moulded in place, and a washer or washers arranged to be compressed between said spigot and socket substantially as herein described.

No. 40,225. Tire for Vhicles. (*Bandage de véhicule.*)

Walter Swain and William Philipson, both of Hilford Mill, Astley Bridge, Lancaster, England, 5th September, 1892; 6 years.

Claim.—1st. The combination, with the inflatable tire or tube and the canvas or other bag or cover of a pneumatic tire, of the steel or other metallic tape or tapes wrapped round same in a spiral form, as and for the purpose herein set forth. 2nd. The combination, with the inflatable tire or tube, canvas or other bag or cover, and wrapped with steel or other metallic tape or tapes in a spiral form, of a steel or other metallic tape placed under same and bound round the outer periphery of the inflated tire or tube, as and for the purpose herein set forth. 3rd. The combination, with the inflatable tire or tube and the canvas or other bag or cover of a pneumatic tire, of a pliable metallic cover composed of steel or other metallic strips or tapes, as and for the purpose herein set forth.

No. 40,226. Envelope Seal. (*Cachet pour enveloppes.*)

Henry Denis, New Orleans, Louisana, U.S.A., 5th September, 1892; 6 years.

Claim.—A permanent fastening for envelopes and wrappers, consisting of an outer member constructed of thin metal, in the form of a single disk or plate having peripheral prongs or clips and a stud formed with a shank or stem and a head or knob or plano convex shape, and the inner member constructed of thin metal in the form of a single disk or plate having peripheral prongs or clips, a hole or orifice registering with the stud, slots or slits, and inbent flexible lips by which the head or knob of the stud is guided into position and permanently held from withdrawal, substantially as described.

No. 40,227. Wrench. (*Clé à écrou.*)

Braxton Bragg Lowe, Key West, Florida, U.S.A., 5th September, 1892; 6 years.

Claim.—The combination of a ratchet and a wrench, the latter provided with a bar having a vertical extension secured to the ratchet wheel, lateral arms having angular portions and right and left screw threaded extensions, jaws engaging said bar and provided with vertical lugs, and nuts between said lugs and shoulders on the jaws.

No. 40,228. Pneumatic Door Check and Closer.

(Fermeture pneumatique de porte.)

John Schrack Shrunder, Norristown, Pennsylvania, U.S.A., 5th September, 1892; 6 years.

Claim. 1st. A pneumatic door check and closer comprising a cylinder provided with an air inlet valve or valves, a piston provided with a rod having a spring mounted thereon and means for connecting the device with a door, the construction being such that strain on the working parts will not exceed the pressure of the atmosphere on the face of the piston partially counterbalanced by a vacuum created in rear whereby door is permitted to close gently under the influence of the spring. 2nd. A pneumatic door check and closer compressing a cylinder, a piston movable in said cylinder and having its face exposed to atmospheric pressure, an inlet at the head of the cylinder communicating with the atmosphere and controlling the extent of vacuum created in rear of the piston and means for connecting the device with a door, the construction being such that strain on the working parts thereof will not at any time exceed the pressure on the face of the piston partially counterbalanced by the vacuum in rear, whereby the door is permitted to close gently under the influence of a spring. 3rd. A pneumatic door check and closer comprising a cylinder, a piston movable in said cylinder and having its face exposed to atmospheric pressure, means for permitting air to escape into the atmosphere from the head of the cylinder during movement of the piston therein, an air inlet communicating with the atmosphere and controlling the extent of vacuum created at the head of the cylinder by the withdrawal of the piston, and mechanism for connecting the piston and door, whereby pressure on the working parts of the device will not exceed the pressure of the atmosphere irrespective of any pressure manually brought to bear against the door in the opening or closing thereof. 4th. A pneumatic door check and closer, comprising a cylinder, a piston provided with a rod having a coiled spring mounted thereon and connected with the cylinder, means connected with the pistion to permit of the escape of air from the cylinder past the piston, a vent for slowly admitting air to the cylinder in rear of the piston and mechanism interposed between the piston-rod and the door for closing the latter.

No. 40,229. Sewing Machine.

(Machine à coudre.)

Vaclav Tomsa, Prague, Bohemia, 5th September. 1892; 6 years.

Claim. 1st. In sewing machines, an oscillating shuttle *w*, which may be of various forms, but is pointed at both ends, for the purpose of producing in conjunction with the action of the needle bar, which travels up and down twice two complete stitches for each revolution of the driving wheel, one stitch being produced at the forward movement of the shuttle and one at the backward movement, substantially as hereinbefore set forth. 2nd. In sewing machines, a horizontal driving shaft made in two parts *a*, *c*, which act independently of each other, the part *c* having on it a sleeve, in which one end of the part *a* revolves, substantially as hereinbefore described and shown on the drawings annexed. 3rd. The combination with the shaft *a*, of the fixed eccentric D, and loose eccentric C, and the tappets E and F, substantially as and for the purposes hereinbefore set forth. 4th. The combination of the oscillating forked lever G, cam *o*, sewing lever c^1, spring c^1, and intermediate lever for the purpose of actuating the plate B, substantially as hereinbefore described and shown on the annexed drawings. 5th. The combination of the oscillating forked lever H, toothed sector R, and pinion S connected with the shuttle W, for the purpose of giving said shuttle reciprocatory movement in a circular path, substantially as hereinbefore described with reference to the drawings annexed. 6th. The combination of the oscillating forked lever H, pin V, fitted in said lever, toothed sector Z, and cog wheel *r*, attached to the sleeve *b*, of the shaft *c*, for the purpose of giving an oscillating motion to said shaft *c*, substantially as hereinbefore described and shown on the drawings annexed. 7th. The combination with the oscillating shaft *c*, of the disc *h* fixed thereto, peg *i* on said disc, and wave-shaped groove *m*, in which said peg works, made in the part *l* of the needle bar, for the purpose of causing the needle bar to rise and fall twice during each revolution of the driving wheel, substantially as hereinbefore described and shown on the drawings annexed. 8th. The tension device, consisting of the lever *q*, spiral springs *s*, pin *o*, discs or plates l^2, forming tension *r*, screw *x*, springs y^1 and y^2, and the saddle y^2, substantially as hereinbefore described and shown on the drawings annexed.

No. 40,230. Churn. (*Baratte.*)

Nestor Rolland, Brussels, Belgium, 5th September, 1892; 6 years.

Claim. 1st. A churn for the production of butter by air current, having an air forcing device, a removable tube for conducting the air into the bottom of said churn, a receptacle mounted between two parts of said tube and containing wadding for the purification of the air, an opening in the cover for the regulation of the air, a perforated bottom completed by an upwards extending perforated annular extension and a downwardly projected non-perforated annular extension, substantially as described and for the purpose specified. 2nd. In combination with the arrangements above described, a second non-perforated bottom corresponding to the first one by means of an annular rim and which may be provided or not with bolts, such as described and illustrated. 3rd. In combination with the above described churn and removable tubing, a perforatad bottom having a downwardly projected rim resting on the bottom of the churn. 4th. A churn for the production of butter by agitation with air currents, consisting of a cylindrical body, a tubular dasher provided at its lower end with an imperforate plate, an annular extension above said plate, the inner cylinder of said extension and the upper plate of the aerator being perforated to cause both vertical and horizontal jets, the parts being united and combined as shown, and said dasher connected at its upper portion with an air forcing device. 5th. A device for the agitation of cream consisting of an air forcing device, an air filter, a cylindrical churn body, a distributor composed of a tubular dasher provided at its lower end with an imperforate plate, an annular extension above said plate, the inner cylinder of said extension and the upper plate of the aerator being perforated to cause both vertical and horizontal jets, the parts being united as shown. 6th. In a churn, such as above described, the arrangement of several perforated plates and the combination of one of the latter with an annular cylinder inwardly perforated, such as described and for the purpose of increasing the production of butter.

NO. 40,231. Machine for Printing Paper Bags.

(Machine à imprimer les sacs en papier.)

Robert E. Stewart, Toronto, Ontario, Canada, 5th September, 1892; 6 years.

Claim. 1st. In a machine for printing and decorating paper bags, the combination of a frame work, a platen roll journalled in bearings formed in the said frame work, a printing roll journalled in bearings formed in the frame work and contiguous to the platen roll, a colour box mounted in said frame work and adapted to feed colour to the printing roll, the material adapted to pass between the printing roll and platen roll on its way from the web to the bag making machine, the passages of the material adapted to impart motion to the said platen and printing roll, substantially as described. 2nd. In a machine for printing or decorating paper bags, the combination of a frame work, a platen roll journalled in said frame work, a printing roll journalled in bearings sliding in grooves in the said frame work, the printing face of the printing roll contiguous to the surface of the platen roll, a colour box mounted in said frame work, a fabric inking face for said colour box adapted to feed colour to the printing surface of the printing roll, a spring connected to the bearings for the printing roll and to the frame work of the machine and adapted to give the required pressure to the printing rolls, substantially as described. 3rd. In a machine for printing or decorating paper bags, the combination of a frame work, of a roll journalled in said frame work, having a hardened surface to serve as a platen, a printing roll journalled in bearings having its printing face contiguous to the hardened surface of the plate roll, a spring connected to the bearings of the printing roll, and to the frame work of the machine, said spring adapted to give the required pressure to the printing roll, a colour box divided into compartments, a fabric material adapted to transmit colour from the colour box to the printing surface of the printing roll, substantially as described.

No. 40,232. Warp Operating Mechanism for Cross Weaving. (*Mécanisme de fonctionnement pour tissage à chaîne croisée.*)

William Talbot, Philadelphia, Pennsylvania, U.S.A., 5th September, 1892. 5 years.

Claim. 1st. The combination with a gauge loom provided with warp slackening mechanism, of a shifting bar having a straight lower edge provided with eyes, a comb, mechanism for lifting and sinking the comb, and means for reciprocating the bar transversely of the loom, substantially as and for the purposes set forth. 2nd. The combination, in a loom provided with automatic warp slackening mechanism, of a shifting bar provided with eyes, a comb provided with eyes, mechanism for lifting and sinking said bar transversely of the loom, substantially as and for the purposes set forth. 3rd. The combination, in a loom having warp tension adjusting mechanism, of a shifting bar provided with eyes, a combined comb and reed, mechanism for alternately lifting and sinking said shifting bar, and combined comb and reed and means for shifting said bar transversely of the loom, substantially as and for the purposes set forth. 4th. The combination, in a loom provided with a fixed whip beam and an adjustable whip roller, of a shifting bar provided with eyes, a comb provided with teeth having eyes therein, mechanism for alternately lifting and sinking said bar and comb, and means for shifting said bar transversely of the loom, substantially as and for the purposes set forth. 5th. The combination, in a loom provided with a fixed whip beam and an adjustable whip roller, of a shifting bar having a smooth lower edge provided with eyes, a combined reed and comb, mechanism for lifting and sinking said combined reed and comb and said shifting bar, and means for shifting said bar transversely of the loom, substantially as and for the purposes set forth.

No. 40,233. Puzzle. (*Jeu de patience.*)

John Clouston, Galt, Ontario, Canada, 5th September, 1892; 6 years.

Claim.—As a puzzle, a box or case having an uneven bottom with a hole in its surface, and a marble or sphere contained in the said case, substantially as and for the purpse set forth.

No. 40,234. Decoy. (*Appeau.*)

Frederick A. Thorn and George Thorn, both of Salt Lake City, Utah, U.S.A., 5th September, 1892; 6 years.

Claim.—1st. The combination, with the decoy sections having registering flanges on their edges, of a band for holding the sections together and which is adapted to lap over the said flanges, substantially as shown and described, 2nd. A decoy formed of vertical longitudinal sections, projections at the front and rear ends of the decoy in line with the adjacent edges of the sections, and an elastic band which is normally of a length shorter than the distance between the said projections, but which is adapted to be expanded and connected thereto at its respective ends covering the longitudinal joint between the projections, substantially as shown and described. 3rd. The combination, with the flanged decoy sections and a projection on the rear end thereof, of a band having a loop formed in one end which fits over the decoy's neck and a slit in its opposite end which fits over the said projection on the rear end, substantially as shown and described. 4th. A decoy formed of vertical longitudinal sections having curved lower sides, outwardly projecting flanges on the meeting edges of the sections, projections on the front and rear ends of the decoy in line with the said flanges, and an elastic band normally of a length shorter than the distance between the projections, but which is adapted to be secured thereto at its respective ends, extending around and over the flanges between the said projections, substantially as shown and described.

No. 40,235. Steam Pump. (*Pompe à vapeur.*)

Albert Francis Hall, Boston, Massachusetts, U.S.A., 5th September, 1892; 6 years.

Claim.—1st. In a pump of the class described the combination of the following instrumentalities, viz:—A bed, two steam cylinders arranged side by side, pistons therein, two pump cylinders arranged side by side and in line respectively with said steam cylinders, plungers therein, piston rods connecting the opposite pistons and plungers, pedestals between the said steam and pump cylinders rocking beams pivoted at their lower ends in said pedestals and actuated by links from cross heads on said piston rods, a crank shaft placed between said rocking beams and supported at its ends in bearings in the said pedestals and having outside said bearings cranks actuated by connecting rods jointed to said beams, a fly wheel on said crank shaft and between said pedestals, the eccentrics e^6, m^4 and m^5, and the auxiliary eccentrics f^4 and valve gears for the cylinders, substantially as described operated by said eccentrics. 2nd. In a cross compound pump of the class described, the combination of the following instrumentalities, viz.:—A bed, two steam cylinders arranged side by side, pump cylinders arranged in line respectively with said steam cylinders and having their plungers connected by piston rods with the pistons in the steam cylinders, a crank-shaft rotated by movement of said piston rods, separate inlet and exhaust valves for each end of the respective steam cylinders, a single wrist plate actuated from the said crank-shaft and connected with and operating the inlet and exhaust valves for one cylinder, and two independent wrist plates independently actuated from said crank-shaft to actuate respectively the inlet and exhaust valves for the other cylinder, substantially as described. 3rd. A steam cylinder having separate inlet and exhaust valves at each end, levers on the said valves, and dash-pots connected with said levers, actuating plates pivoted about the axis of said valves and a wrist plate to which said plates are connected combined with a trip-shaft loosely journalled in the levers, and devices thereon to engage said plates to cause movement of the levers and valves by the said plates, the lever F, an eccentric to operate the same, a T-shaped lever pivoted to said lever F and having its opposite ends connected respectively with and to rotate said trip shafts, and a regulating device to change the position of said T-shaped lever to vary the cut off, substantially as described. 4th. A steam cylinder having separate inlet and exhaust valves at each end, bell crank levers e^7, fast on the steam valves, and dash pots connected therewith, the plate e^{13}, a wrist plate to which they are connected and by which they are actuated, trip shafts e^{10} in the bell crank levers, and engaging devices intermediate said trip shafts and plates whereby the valves are actuated by the plates, the lever F, T-shaped lever f connected by rods with arms e^{15} on the said trip shafts, and a governor G connected with and to control said T-shaped levers, substantially as described. 5th. A steam cylinder having separate inlet and exhaust valves at each end, bell crank levers e^7 fast on the steam valves and dash pots connected therewith, the plates e^{13}, a wrist plate to which they are connected and by which they are actuated, trip shafts e^{10}, in the bell crank levers and engaging devices intermediate said trip shafts and plates whereby the valves are actuated by the plates, the lever F, T-shaped lever f connected by rods with arms e^{15} on the said trip shafts, the threaded rod f^2, and connections intermediate it and the said T-shaped lever to operate substantially as described. 6th. A steam cylinder, a piston therein, and a crank shaft rotated from said piston, steam inlet valves at opposite ends of the cylinder, levers on and to rotate said valves, dash pots connected with said levers, actuating plates pivoted about the axis of said valves, a wrist plate to which said plates are connected, an eccentric on the crank shaft to reciprocate said wrist plate, and engaging and disengaging devices between the said plates and levers whereby the latter are caused to move in unison with the former through a part of their movement, combined with an auxiliary eccentric on the crank shaft connected with and to actuate said engaging and disengaging devices to effect the cut off of the steam at the proper times, substantially as described. 7th. A steam cylinder, a piston therein, and a crank shaft rotated from said piston, steam inlet valves at opposite ends of the cylinder, levers on and to rotate said valves, dash pots connected with said levers, actuating plates pivoted about the axis of said valves, a wrist plate to which said plates are connected, an eccentric on the crank shaft to reciprocate said wrist plate and engaging and disengaging devices between the said plates and levers whereby the latter are caused to move in unison with the former through a part of their movement combined with an auxiliary eccentric on the crank shaft, connecting mechanism intermediate it and the said engaging and disengaging devices whereby the said devices are actuated by the auxiliary eccentric to effect the cut off of the steam at the proper times, and a governor connected with and to regulate the said connecting mechanism to vary the cut off by the eccentric, substantially as described. 8th. A steam cylinder, containing a piston, a crank shaft rotated from the piston, steam inlet valves at each end of the cylinder, bell crank levers fast thereon, and dash pots connected therewith, actuating plates pivoted about the axis of said valves, a wrist plate to which they are connected, and an eccentric on the crank shaft to reciprocate said wrist plate, combined with engaging and disengaging devices between the bell crank levers on the valves and the said plates, a lever F, connected with and to actuate said engaging and disengaging devices, and an eccentric on the crank shaft connected with and to operate said lever, substantially as described. 9th. The combination of the following instrumentalities, viz.: a steam cylinder containing a piston, a crank shaft rotated therefrom, separate steam and exhaust valves at each end of the cylinder, bell crank levers on the steam valves and dash pots connected with the said levers, actuating plates pivoted about the axis of the steam valves, a wrist plate, links connecting the same with said plates and also with and to rotate the exhaust valves, a trip shaft journalled in the said bell crank levers, arms on the inner ends of the said shafts adapted to engage blocks on the said plates, a lever F, actuated by an eccentric on the crank shaft, a T-shaped lever f, pivoted to the lever F, and having its opposite ends connected with and to rotate said trip shafts, a governor and connections intermediate it and the said T-shaped lever, all to operate substantially as described. 10th. In a pump of the class described, the combination, of the following instrumentalities, viz.: a bed, two cylinders arranged side by side, pistons therein, two pump cylinders arranged side by side and in line respectively with said steam cylinders, plungers therein, piston rods connecting said pistons and plungers, pedestals P, between the said steam and pump cylinders, rock beams C, pivoted at their lower ends in the said pedestals and actuated at their upper ends by links a^6, from cross heads on the said piston rods. a crank shaft e^6, placed between said rocking beams and supported at its ends in bearings in the said pedestals, and having outside of said bearings cranks actuated by connecting rods e^6, jointed to said beams between their ends, a fly wheel W, on said crank shaft between said pedestals, the eccentrics e^6, m^4 and m^5, and the auxiliary eccentrics f^4, and valve gears for the cylinders, substantially as described, operated by said eccentrics.

No. 40,236. Apparatus for the Manufacture of Nails.

(*Appareil pour la fabrication du clous.*)

Per Adolf Nilsson, Gothenburg, Sweden, 5th September, 1892; 6 years.

Claim.—1st. The method described of cutting nail blanks from a continuous metal bar or strip provided with raised side edges intended to form the heads of the nails by submitting the metal bar or strip alternately to the action of two correspondingly shaped cutters arranged side by side and moving in the same direction, so that at each stroke towards said metal bar or strip, a blank is cut off having the head portion alternately on the right and on the left side, substantially as and for the purpose set forth. 2nd. In combination with a machine for cutting nail blanks and similar objects from continuous metal bars or strips, the carrier E provided with two sets of conjoint acting cutters k k^1 and k^2 k^3 arranged side by side, and moving transversely to the direction of the periodically advanced metal bar or strip, substantially as and for the purpose specified. 3rd. In a machine for cutting nail blanks and similar objects from a continuous metal bar or strip the combination of the mechanism for periodically advancing said bar or strip towards the laterally reciprocating cutters, consisting of a carriage c, oscillated by lever c^1 from a cam having its stroke regulated by set-screws c^4 and a spring c^5, the gripper h^3 operated by lever h, connected with the reciprocated rod h, by means of a hand lever j, hook j^1 and catch i, substantially as and for the purpose hereinbefore described. 4th. In a machine for cutting nail blanks and similar objects from a continuous metal bar or strip the combination of the mechanism for maintaining the metal strip in position during the backward motion of the feed mechanism, consisting of the stationary check g and the oscillated, check g^1 the set-screw g^2, adjusting screw bolt g^4 and arms g^5 of the carrier E operating together, substantially as and for the purpose set forth. 5th. In combination with a machine for cutting nail blanks from a continuous metal bar or strip, the mechanism for dressing or stamping the blanks into shape, consisting of the dies o^1 o^2 reciprocating in the carrier E towards the lower stationary cutter checks k^1 k^3 and the levers r and r^1, pivoted to the carrier E and

operated by the shifting motion of said carrier through the medium of a bar r^5 having a recess r^6, substantially as and for the purpose specified. 6th. In combination with a machine for cutting nail blanks and similar objects from a continuous metal bar or strip, the mechanism for automatically throwing the friction clutch S^1 into and out of gear consisting of a pivoted disc S^3, carrying the hand lever S^2 and connected to the disengaging lever t by an adjustable bolt t^1, and to the pin s^1 pressing under the action of a spring s^4 towards the side of the metal bar or strip of a catch r^3, a projection e of the carrier E, of the bolt r, the levers u and s^5, rod s^3 and bell-crank lever s, substantially as and for the purpose hereinbefore described.

No. 40,237. Wallet. (*Besace.*)

George Kendal Morton, St. Thomas, Ontario, Canada, 5th September, 1892; 6 years.

Claim. As a new article of manufacture, the herein described wallet, closed at the bottom and ends and open at the top, the sides being free from flaps and having fastening devices held thereto at the inner surface of each near the top, said fastenings being adapted to engage each other and extending when closed transversely across the interior of the wallet, thus forming a stop for preventing outward movement of the contents of the wallet, the opening at either side of the fastening being directly in line with the interior of the wallet, affording inspection of the contents thereof and permitting entrance of one's fingers in a direct line to the interior for the ready disengagement of the fastening devices while holding securely with the same hand, substantially as described.

No. 40,238. Organ. (*Orgue.*)

Robert Hope Jones, Birkenhead, Chester, England, 5th September, 1892; 6 years.

Claim.—1st. In an organ, the combination, with one of the ordinary manual or pedal keys, of an electric contact device adapted to be closed by a pressure on said key greater than that of the ordinary touch and connected in circuit with one or more electrically operated devices for bringing into action a pipe or pipes, or sonorous instrument as described, other than that ordinarily operated by the said key, substantially as and for the purposes described. 2nd. In an organ, the combination, with one of the ordinary manual or pedal keys, of a pipe other than that ordinarily played by said key, an electrically operated device for bringing said pipe into action, a contact device closed by an abnormal pressure on said key, and an electric circuit embracing said contact and electrically operated devices, substantially as and for the purposes described. 3rd. In an organ, the combination, with a series of the manual or pedal keys, of a series of electric contact devices each closed by an abnormal pressure on its respective key, an electric circuit connected with each contact device and including the electrically operated action of an additional pipe or pipes as described, and a switch located conveniently to the operator and controlling the entire series of such circuits, substantially as described. 4th. In an organ, the combination, with one of the ordinary manual or pedal keys, of a stiff spring serving as a stop to limit the movement of the key when depressed under the normal touch but yielding on the application to the key of a touch of abnormal power, a contact device closed on the yielding of said spring, and an electric circuit including the said contact device and one or more electrically operated actions as described, substantially as set forth. 5th. In an electric organ, the combination, with one of the ordinary manual or pedal keys, and the usual electric contacts closed by the depression of the same under the normal touch, of additional contact closed by a further depression of the key and connected in circuit with one or more electrically operated devices for bringing into action a pipe or pipes other than that or those ordinarily operated by the key, substantially as described. 6th. In an organ, the combination, with the key A, of the stiff insulated spring B, below the key and serving to limit the depression of the same under normal touch, the insulated contact pin B^1, below the spring and serving as a stop for it and the key when depressed under a more forcible touch, and the wires b^2, b^3, connected respectively with the spring B and pin B^1, and forming parts of the circuit of one or more electrically operated actions, as described, substantially as set forth. 7th. In an organ, the combination, with a series of keys A, of a corresponding series of contact springs B below the same, a series of contact pins B^1 below the springs, a wire b^1 connecting said springs through a common supply wire b^2 with the like terminals of a corresponding series of electrically operated actions, as described, a series of wires b^3 connecting the pins B^1, respectively, with the opposite terminals of said actions, and a switch inserted in the wire b^2, substantially as described. 8th. In an electric organ, the combination, with one of the ordinary manual or pedal keys, of a counterbalanced lever normally upheld by the key in opposition to the counterbalance, a stiff spring serving as a stop for the lever when its counterbalance is allowed to act on the depression of the key under normal touch, but capable of yielding and permitting a further movement to the lever when an abnormal pressure is put upon the key, one or more contacts closed by the initial movement of the lever and bringing into operation the electric actions of the pipes ordinarily connected with the said key, and an additional contact device closed by the said further movement of the lever and serving to bring into action an additional pipe or pipes, substantially as and for the purpose described. 9th. In an organ, the combination, with the key A, of the lever A^2 below the same, suspension link a^4 connecting the lever and key and having a longitudinal movement through its suspension eye a^5, spring a^3 acting in opposition to the pull of the link, stiff spring B^4 serving as a stop for the lever and capable of resisting the pressure of spring a^3 and of the normal touch of the key, a contact device closed by the movement of the lever when depressed in defiance of the spring B^4, as described, and an electric circuit controlled by said contact device and connected with one or more electrically operated actions, as described, substantially as set forth. 10th. The combination of the key A, contact lever A^2 below the same, link a^4 connecting lever and key and having longitudinal play, as described, lever counterbalance spring a^3, stiff spring stop B^4 below lever, contacts B^2 on lever engaging contacts B^3 on the initial movement of lever, additional contact B^* engaging contact B^{1*} on the further movement of lever, as described, and electric actions, as described, connected with the circuits controlled by said contacts B^2, B^3 and B^*, B^{1*}, respectively, substantially as described. 11th. In combination with the snell box of an organ, a series of snell shutters, each of a different area, and mechanism under the control of the performer, whereby said shutters are successively opened or closed in the order of their respective areas, substantially as described. 12th. In an organ, the combination, with the swell box C, of a series of counterbalanced swell shutters C^1, C^2, C^3, C^4, C^5, and sets of coupled shutters C^6, C^7, having their areas increasing from one end of the series to the other, and mechanism whereby said shutters may be successively operated in one direction, substantially as described. 13th. In an organ, the combination, with a series of counterbalanced swell shutters, of a series of electrically operated actions for successively actuating said shutters in one direction, and a switch under the control of the performer, whereby the circuits of said actions may be successively made and broken, substantially as described. 14th. In an organ, the combination of the series of counterbalanced swell shutters C^1, C^2, series of electro-pneumatic actions E, D^1, D^2, and operating their respective shutters in one direction, contacts G^1, G^2 connected to their respective actions each to one terminal thereof, contact F^2 connected to all the opposite terminals of said actions and adapted to cover one or all of the contacts G^1, G^2, and means whereby the operator may place the contact F^2 in contact successively with the series of contacts G^1, G^2, substantially as described. 15th. In an organ, the combination, with a series of counterbalanced swell shutters, of a series of electrically operated actions for successively actuating the same in one direction, a switch whereby the performer may successively make and break the circuits of said actions, and pneumatic device whereby the shutters are automatically held opened or closed in defiance of their counterbalancing devices by the agency of the wind pressure alone after the breaking of the circuits of their respective actions, substantially as and for the purpose described. 16th. In an organ, the combination, with a series of counterbalanced swell shutters, of a series of electro-pneumatic actions for successively actuating the same in one direction, a switch for successively making and breaking the circuits of said actions, and a pneumatic device whereby the one or more electry-pneumatic actions last in operation are automatically retained in their operative condition after the breaking of their circuits, substantially as described. 17th. In an organ, the combination, with a series of counterbalanced swell shutters, of a series of electro-pneumatic actions for successively actuating the same in one direction, a switch for successively making and breaking the circuits of said actions, and a series of by-pass devices, whereby the wind pressure from the electro-pneumatic action at any time in operation retaine the previously operated action or actions in an operative condition after the breaking of the circuit or circuits thereof, substantially as described. 18th. In an organ, the combination of the series of counterbalanced swell shutters C^1 C^2, series of electro pneumatic actions E D^1 D^2 successively operating the same, switch F^2 G for placing the actions successively in and out of operation, and a by pass device for each action in the series except the first, each by pass being adapted to convey the wind pressure from the operative action next below it in the series to its own action and to apply it to the primary value thereof in such manner as to retain the latter in its operative position, substantially as described. 19th. The combination of the series of swell shutters C^1 C^2, series of electro pneumatic actions E D^1D^2 therefor, action controlling switch F^2 G, chambers E^4 applied one to each action in the series except the first and having their flexible sides E^5 connected as described with the primary valves of their respective actions, and wind passages E^6 each connecting its respective chamber E^4 with the wind space of the action next below it in the series, substantially as described. 20th. The combination of a series of pivoted swell shutters (E*, Figure 5), rod C^* pivoted to each eccentrically to their main pivots with electro pneumatic devices at each end actuating the said rod longitudinally, substantially as described and shown in Figures 5 and 6. 21st. The combination of the swell pedal F, contact F^2, connected with one pole of battery, oscillating device J, electric contact pieces J^2 J^1, electro pneumatic devices H^1 H connected respectively with contact pieces J^1 and J^2, rod C^8 and swell C^* pivoted thereto, substantially as described. 22nd. The combination of a series of electric actions controlling respectively the pipes of an organ, a series of keys controlling respectively the circuits of said actions, a compound or multiple switch through the separate contact devices of which said circuits pass respectively, and means for operating said switch in such a manner that the relative connections of the circuit wires entering the oppo-

site sides of the switch are simultaneously altered whereby the entire organ or a given part thereof, may be transposed at will, substantially as described. 23rd. The combination, with the electrical connections, of the key board, of a compound switch board, whereby the connections with the key board can be changed one or more half notes. 24th. The combination, with the electrical connections of an organ key board, of a compound switch board capable of moving the connections forward or backward one or more keys, and one or more additional pipes and additional terminals, whereby, if the pitch is altered, each key shall still operate a pipe. 25th. In combination with a series of stop slides a series of electric actions for respectively operating said slides in one or both directions, a series of stop keys L^3 controlling the circuits of said actions respectively, and a switch L adapted to simultaneously disconnect all the stop keys from their circuits and to close all the circuits of those electric actions which open in the said stop slides, whereby its sforzando effects may be produced at will. 26th. The combination of the spring roller L, pins L^1, L^2, stop keys L^3, test board L^5, battery F, and wires connecting the same, substantially as and for the purposes described. 27th. The combination of the roller L, wires L^5, L^6, *et cetera*, pins L^1, L^2, projecting contact strip L^{10}, and contact piece L^{11}, whereby, by means of the pins L^1, L^2, all the "off" or "on" wires are brought into requisition that are connected by keys L^3, and by felt L^{10} all the "off" or "on" wires are operated whether connected by keys L^3 or not. 28th. A series of stop slides, a series of electric actions for respectively opening and closing the said slides, a series of stop keys L^3 controlling the circuits of both "off" and "on" electric actions, and a switch L adapted to simultaneously break the action of both stop keys with both "off" and "on" circuits, and to close all the "on" circuits, whereby all the stop slides are immediately opened irrespective of the positions of their respective stop keys, substantially as and for the purpose described. 29th. The combination, with a series of stop slides and electric actions for opening and closing said slides, of the switch L, L^{10}, insulated pin L^{11}, line to battery l^{11} and "on" connections l^5 and l^6, whereby all the corresponding actions are immediately brought into action. 30th. A series of electric actions h^1 controlling respectively a series of pipes, a series of keys controlling the circuits of their respective actions, a series of contact devices H^6 and H^7, each closed on the operation of its respective action and each connected in circuit with said action by a branch circuit H^3, and a switch H^5 controlling said branch circuits and adapted to simultaneously render them effective, whereby the prolongation of the notes may be obtained after the release of their keys. 31st. The combination of circuit h, h^2, having in it electric action h^1, and operating electro-pneumatic lever in box H^2, pull down H^4, bellows H^3, contacts H^7 and h^6, shunt h^3 and switch h^5 operated by a stop at the will of the organist. 32nd. In combination with a swell shutter operating device, a pneumatic brake operated by the swell shutter closing mechanism near the termination of its stroke, whereby a rapidly accelerating resistance is brought to bear upon the movement of the closing rod, but a resistance so regulated that at its maximum it shall be less than the force used in closing the shutters. 33rd. In combination with the swell shutters of an organ, a bellows opened by the closing movement of the shutters and adapted, when inflated, to hold the shutters closed, an air controlling device admitting air to the bellows, and an abutment moving with the shutters and adapted to operate said air controlling device as the shutters close or are on the point of closing, whereby the shutters are held firmly closed and rebound of the same when closed is prevented, substantially as described. 34th. The combination of rod C^8, abutment M^5 thereon, operating mechanism H^8, bellows M, passages m^1 and m, valve M^2 and valve box M^1, substantially as and for the purposes described.

No. 40,239. Water Heater. (*Chauffeur d'eau.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignees of James Finney McElroy, Albany, New York, all in the U. S. A., 5th September, 1892; 6 years.

Claim.—1st. In a water heater of the kind described, the combination of the parts A, B of the casing, screw threaded together, a screen secured in each part, the commingling chamber between, the side inlet and outlet connections, the drain connection at the lowest point, the steam inlet pipe and the nozzle, substantially as described. 2nd. In a water heater of the kind described, the combination, with the casing and the commingling chamber, of the nozzle having steam distributing apertures formed by slots cut in the upper side thereof and the ribs *c*, substantially as described. 3rd. In a water heater of the kind described, the combination, with the casing and commingling chamber, of the circular nozzle having steam distributing apertures formed by slots cut at different heights, substantially as described. 4th. In a water heater of the kind described, the combination, with the casing and commingling chamber, of the nozzle consisting of the nipple I, hollow ring *a*, connections *b*, slots *c*, *d*, and ribs *e*, substantially as described.

No. 40,240. Temperature Regulator.

(*Regulateur de temperature.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignees of James Finney McElroy, Albany, New York, all of the U. S. A., 6th September, 1892; 6 years.

Claim.—1st. In a temperature regulator, the combination, with a frame, a thermostat, and a connecting rod, of a valve, a stem having a flexible connection with the valve and arranged at right angles to the connecting rod, a spring on the stem normally holding the valve open, and a bell crank lever engaging with its respective ends the connecting rod and the valve stem at a point between the spring and valve, substantially as described. 2nd. In a temperature regulator, the combination, with a supporting frame, a thermostat thereon, a bell crank actuated by the thermostat, and a connecting rod on the bell crank, of a valve having a stem extending out at right angles to the connecting rod, a spring on the stem normally holding the valve open, and a bell crank actuated by the connecting rod to force the valve to its seat against the tension of the spring, substantially as described. 3rd. In a temperature regulator, the combination, with a supporting frame, a thermostat thereon, a connecting rod actuated by the thermostat, a tubular connection through which the connecting rod passes, and a valve casing, of a frame between the valve casing and tube, a valve in the valve casing, a stem on the valve arranged at right angles to the connecting rod and passing through the frame on the valve casing, a spring on the stem normally holding the valve open, and a bell crank pivoted to the frame on the valve casing at a point between the outer end of the stem and the connecting rod, its ends arranged to engage respectively, with the connecting rod and the valve stem, substantially as described. 4th. In a temperature regulator, the combination, with a supporting frame, a thermostat, and a connecting rod actuated by the thermostat, of a valve having a stem arranged at an angle to the connecting rod, a spring for normally holding the valve from its seat, and a bell crank arranged between the ends of the stem and engaging, respectively, the lower end of the connecting rod and the valve stem, substantially as described.

No. 40,241. Extension Table. (*Table à rallonge.*)

Joseph Adolphe Ethier, Montreal, Quebec, Canada, 6th September, 1892; 6 years.

Réclame.—1er. Dans les tables d'extensions ajustable, la combinaison des rouleaux a ressorts S, S, avec le tapis R, tel que décrit et pour les fins indiquées 2ème. Dans les tables d'extension les pièces entrecoupées F, F, et G, tel que décrit. 3ème. Le couvert du centre courrant les cotés du centre H, les cotés *t*, *t*, et les couverts *t*, *t*, coulant l'un sur l'autre le tout tel que décrit et pour les fins indiquées. 4ème. Dans les tables d'extension la combinaison des roues dentées K et L avec le cylindre M, les fils N, N, et O, O, et les poulies P, P, et Q, Q, tel que décrit et pour les fins indiqués. 5ème. La douille U, avec pas de vis, le tube en vis V, et la douille exterieure Y, tel que décrit et pour les fins indiquées.

No. 40,242. Regulator for Dynamo Electric Machines.

(*Régulateur de machine dynamo-électrique.*)

Edward M. Bentley, Boston, Massachusetts, assignee of William H. Elkins, Hornellsville, New York, both of the U.S.A., 5th September, 1892; 6 years.

Claim.—1st. A dynamo electric machine having two or more sets of brushes placed at successive points in the periphery of the commutator, and provided with an adjustable resistance, adapted to be shifted from the circuit of one brush to the circuit of the next. 2nd. A dynamo electric machine having two or more sets of brushes placed at successive points in the periphery of a commutator, and provided with means for bringing the desired set into contact with the commutator and also with resistance, adapted to be changed from one set of brushes to another, whereby the potential of the machine may be regulated by a resistance from one set of brushes to the next, and specific degrees of potential obtained by corresponding sets of brushes without any resistance in circuit. 3rd. The combination with a dynamo electric machine of three sets of commutator brushes placed at successive points in the periphery of the commutator, means as described, for bringing a desired set into contact with the commutator to obtain a degree of potential corresponding to the position of the said set on the periphery of the commutator.

No. 40,243. Disk Harrow. (*Herse à disque.*)

The Johnstone Harvester Company, assignee of Edward Pridmore, both of Batavia, New York, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. The combination, with the disk gangs and the draft frame, of draft rods connecting the inner portions of the gangs to the draft frame, an adjusting lever mounted on the draft frame, rearwardly diverging rods attached with their front ends to the adjusting lever, longitudinal rods extending from the rear ends of the diverging rods to the outer portions of the disk gangs, and links pivoted with their inner ends to the draft frame and attached with their outer ends to the longitudinal rods, substantially as set forth. 2nd. The combination, with two disk gangs provided in their inner ends with spherical sockets, of buffers seated in said sockets and having external and internal spherical surfaces, and spherical heads bearing against the inner sides of the buffers and confining them in the sockets, substantially as set forth. 3rd. The combination, with two disk gangs provided in their inner ends with spherical sockets, of hemispherical buffers seated with their outer spherical surfaces in said sockets and bearing against each other with their straight inner faces, substantially as set forth. 4th. The combination, with two disc gangs provided in their inner ends with spherical sockets, of

hemispherical buffers seated in said sockets, washers in the cavities of the buffers whereby the latter are confined in the sockets, and means whereby both buffers are secured together, substantially as set forth. 5th. The combination, with two disc gangs provided in their inner ends with spherical sockets, of hemispherical buffers seated with their outer spherical surfaces in said sockets and having their straight abutting faces provided with interlocking lugs, spherical washers bearing against the inner spherical surfaces of the buffers and a fastening bolt passing through the lugs of both buffers, substantially as set forth. 6th. The combination, with two disc gangs provided in their inner ends with spherical sockets, of a hollow spherical coupling seated in said sockets, and fastening washers attached to the gangs and engaging against the inner side of the spherical coupling, substantially as set forth.

No. 40,244. Surveyor's Instrument.

(Instrument d'arpenteur.)

John Russell Hanlon, Pennington, New Jersey, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. The combination of the outer, internally threaded sleeve, with its upper end attached to the limb or upper plate, the inner externally threaded sleeve engaged within the outer sleeve, and a suitable clamp by means of which the outer sleeve may be prevented from turning on the inner sleeve, substantially as specified. 2nd. The combination of the outer internally threaded sleeve H, provided with longitudinal slits extending upward a suitable distance from its lower end, the limb or upper plate attached to the upper end of said outer sleeve, and the clamping collar surrounding the outer sleeve over the slits, substantially as specified. 3rd. The combination, with the spindle rising from the lower plate, the inner externally threaded sleeve rotatable on the spindle, and the clamping collar surrounding said sleeve below its threaded portion and just above the lower plate, of the outer internally threaded sleeve provided with slits extending upward a sufficient distance from its lower end, the upper plate secured to the upper end of the outer sleeve, and the clamping collar surrounding the outer sleeve over the slits, substantially as specified. 4th. The combination, with the outer, vertical longitudinally split and internally threaded sleeve, and the limb or upper plate detachably secured to the upper end of said sleeve, of the inner externally threaded sleeve engaged within said outer sleeve, and a suitable clamp to bind the two sleeves together and prevent independent rotation, substantially as specified.

No. 40,245. Electric Soldering Iron.

(Fer électrique à souder.)

Charles E. Carpenter, Minneapolis, Minnesota, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. In an electric soldering iron, the combination, with the hollow body and the tapering core fitting within said body, of the resistance disposed about the core, and electrical insulations interposed between said resistance and the core and body, substantially as described. 2nd. In an electrical soldering iron, the combination, with the hollow body, the removable tip thereof and the tapering core fitting within said body, of the resistance disposed about the core, and electrical insulations interposed between said resistance and the core and body, substantially as described. 3rd. In an electric soldering iron, the combination, with the hollow body, the tapering core fitted within said body, the resistance disposed about said core, electrical insulations interposed between said resistance and the core and body, and means for binding said parts together under pressure, substantially as described. 4th. In an electric soldering iron, the combination, with the hollow body, the tapering core fitted within said body, the resistance disposed about said core, electrical insulations interposed between said resistance and the core and body, and means for binding said parts together, of the handle attached to said core, and the heat insulation interposed between said handle and the core and body, substantially as described. 5th. In an electric soldering iron, the combination, with the hollow body, the removable tip thereof, and the tapering core fitting within said body, of the resistance disposed about said core, electrical insulations interposed between said resistance and the core and body, and means for binding said elements together under pressure, substantially as described. 6th. In an electric soldering iron, the combination, with the hollow body, and the tapering core fitting within said body, of the resistance disposed about said core, electrical insulations interposed between said resistance and the core and body, and a screw passing axially through the core and engaging the body so as to bind the said members firmly together under pressure, substantially as described. 7th. In an electric soldering iron, the combination, with the hollow body, of a tapering core having a spiral groove in the conical surface thereof and fitting within said body, of the resistance and electrical insulations interposed between said resistance and the core and body, substantially as described.

No. 40,246. Lightning Arrester. (*Paratonnerre.*)

James Watson Easton, New York, New York, U.S.A., 6th September, 1892; 6 years.

Claim. 1st. In a lightning arrester, the combination, of a stationary electrode, a movable electrode, a solenoid or electro-magnet and connections between the movable electrode and the solenoid or electro-magnet, whereby when the coils of the latter are energized the movable electrode is moved away from the stationary electrode, substantially as and for the purposes set forth. 2nd. In a lightning arrester, the combination, with a solenoid or electro-magnet, of the swinging clamp G, connected thereto, an electrode secured in said clamp, a stationary electrode I, and means for adjusting the relative positions of said electrodes so that the same will be normally separated, substantially as and for the purposes set forth. 3rd. In a lightning arrester, the combination, of a solenoid or electro-magnet, of the swinging clamp G, connected thereto, and provided with the cam shaped projection g^2, an electrode secured in said clamp, a stationary electrode I, and means for adjusting the relative positions of said electrodes so that the same will be normally separated, substantially as and for the purposes set forth. 4th. In a lightning arrester, the combination, of a solenoid or electro-magnet, a swinging clamp G, connected thereto, an electrode adjustably secured in said clamp, the electrode I, the clamp J, mechanism for adjusting the position of the electrode I, within said clamp, the contact piece J^2, and means for adjusting the position of the clamp J, therein, substantially as and for the purposes set forth.

No. 40,247. Socket Pipe for Drainage.

(Femelle de tuyau de conduite.)

Henry Knowles, Woodville, Leicester, England, 6th September, 1892; 6 years.

Claim.—1st. In socket pipes, forming the socket and spigot in such manner, or providing them with such a support that the lower part of the interior of the socket at the shoulder forms a rest for the spigot such that the lengths of piping are maintained with their lower internal surfaces in direct line with each other, substantially as hereinbefore described. 2nd. The improved pipe having the socket internally eccentric to the pipe so that the circumference of the socket internally at the base shall be in line with the external circumference of the pipe so that when the spigot of one pipe abuts up to the shoulder of the socket of the next pipe and rests on the said socket it forms a true invert at the joints and is maintained in position. 3rd. In pipes, thickening of the lower half of the spigot end of the pipe to hold up the spigot and form a true invert when used with ordinary sockets in the manner hereinbefore described. 4th. In combination, with the subject matter of the preceding claiming clauses, the thickening of the lower part of the socket and the flattening of the base externally so as to secure a firm and solid bearing in true line when the pipes are laid.

No. 40,248. Bundle Carrier for Harvesters.

(Porte-gerbe pour moissonneuses.)

Benjamin Franklin Stewart, Canton, Ohio, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. In a grain binding harvester, a binder frame, in combination, with a bundle carrier e, having its head arranged parallel to the side of the machine just below the outer edge of the binder deck, and a connecting joint between the carrier head and its support, constructed to permit the said head to be swung horizontally underneath the binder frame and at the same time to be oscillated to throw the carrier arms downwards, substantially as described. 2nd. In a grain binding harvester, a binder frame, in combination, with a bundle carrier having its head about parallel to the side of the machine, and a single pivotal joint connecting the head of the carrier with its support and having the respective bearing faces of the said pivot inclined to the horizontal plane of the head in normal position, whereby the carrier head may be swung around, horizontally on said pivot and at the same time positively oscillated, substantially as described. 3rd. In a grain binding harvester, a binder frame, in combination, with a bundle carrier, having its head arranged parallel to the side of the machine, a pivotal support in which said head is mounted, whereby it may be buried in a horizontal plane on its pivot and in which the head itself is free to oscillate on its axis, and stops arranged to limit said oscillation to hold the bundle carrier normally in a horizontal position, but free to be oscillated in the opposite direction to turn up the outer ends of the carrier fingers against the bundle frame, substantially as described. 4th. In a harvester, a bundle carrier, in combination, with a support G, to which it is connected and which is provided with an inclined bearing face g^3, the supporting bracket H, also provided with an inclined bearing face h^2, and a pivot pin I, substantially as described. 5th. In a harvester, a bundle carrier, in combination, with a support G, provided with an inclined bearing face g^3, and a notch g^5 in the edge thereof, the stationary bracket H, provided with an inclined bearing face h^2, and a lug h^3 thereon, the pivot pin I, and mechanism for swinging the carrier on said pivot, substantially as described. 6th. In a harvester, the fixed bracket H, having an inclined face h^2, and lug h^3, in combination with a carrier support G, having a sleeve g, inclined bearing face g^3, and edge notch g^5, the pivot pin I, the bundle carrier F, composed of the head f, and arm f^1, the former mounted in said sleeve, and the stop pins f^2, substantially as described. 7th. In a bundle carrier, the supporting fixed bracket H, having inclined face h^2, in combination, with the bundle carrier support G, having an inclined face g^3, the bundle carrier F mounted therein, the pivot pin I connecting the carrier support to the bracket, the link rod j, bell crank lever J, actuating lever K, and

link rod j^1, substantially as described. 8th. In a harvester, the U-shaped frame E attached to the binder frame, in combination, with the bracket H rigidly secured thereto, the bundle carrier support G pivoted to said bracket, and the bundle carrier F mounted in said support, substantially as described.

No. 40,249. Vaginal Syringe. (*Seringue vaginale.*)

Loren E. Hendrickson, Paulding, Ohio, U.S.A., 6th September, 1892; 6 years.

Claim.—The combination of a sleeve or ferrule adapted to fit over the tubular shank of the syringe back of its distributing tube or nozzle, a series of longitudinal fingers pivoted to said sleeve, and having tail ends projecting in rear of the pivots, and a rotatable thumb piece or button on said sleeve provided with cam grooves adapted to engage with the tail ends of the fingers, substantially as and for the purpose herein set forth.

No. 40,250. Tennoning Machine. (*Machine à tenons.*)

Abraham Giddens, Gypsum, Kansas, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. In a tool feeder, a supporting bracket, a vertically adjustable gauge and bearing mounted in said bracket, a sliding tool operating shaft or spindle loosely mounted in said bearing and provided with a crank handle, a screw threaded tool receiving end and a retaining collar adjacent thereto, a forwardly extending feeding bracket provided with a depending perforated boxing engaging said shaft behind the collar thereon, and with an enlarged end having a perforation therein, a vertically adjustable rest and gauge mounted in said squared perforation and conforming in shape to the object upon which the same rests and slides, and a feeding lever pivotally mounted upon said feeding bracket and connected with a suitable point of attachment to draw the feeding bracket toward the object, substantially as set forth. 2nd. In a tool feeder, a supporting bracket, a vertically adjustable guage and bearing mounted in said bracket, a sliding tool operating shaft or spindle loosely mounted to slide in said bearing, and provided with a crank handle, a screw threaded tool receiving end, and a retaining collar adjacent thereto, a forwardly extending feeding bracket provided with a depending perforated boxing engaging said shaft behind the collar thereon and with an enlarged end having a squared perforation therein, a vertically adjustable rest and gauge mounted in said squared perforation and provided with a semi-circular clamp at its lower end, and adapted to rest and slide upon the object being operated upon, and a feeding lever pivotally mounted upon said feeding bracket and connected with a suitable point of attachment to draw the feeding bracket toward the object, substantially as set forth.

No. 40,251. Clamp for Molders' Flasks.

(*Agraffe pour chassis de moulage.*)

William Whallon Archibald, Newport News, Virginia, U.S.A., 6th September, 1892; 6 years.

Claim.—1st. A clamp for molders' flasks consisting essentially of two symmetrical reversible pieces having interpenetrating locking arms, with recesses between the arms on the opposite piece, substantially as herein described. 2nd. A clamp for molders' flasks, consisting of two symmetrical and reversible rectangular pieces having holding arms at their outer ends, dovetailed grooves on the side opposite said holding arms, and wedge shaped locking arms adapted to slide into said dove tailed grooves, substantially as described. 3rd. A clamp for molders' flasks, consisting of two symmetrical and reversible rectangular pieces B, having holding arms B^3, adapted to engage the sides of the flask, lugs b having inclined sides b^1 and b^2, forming wedged shaped dovetail grooves, and wedge shaped arms B^2, adapted to engage in any of said grooves, substantially as and for the purposes described.

No. 40,252. Plane. (*Rabot.*)

Robert Robinson, Toronto, Ontario, Canada, 6th September, 1892; 6 years,

Claim.—1st. A plane having an iron with a cutting edge bevelled on both edges and held in the body of the plane at such an angle so as to shave the wood as desired, substantially as and for the purpose specified. 2nd. A plane having an iron with a cutting edge bevelled on both edges, in combination with a roller located in front of the cutting edge of the said iron, substantially as and for the purpose specified. 3rd. A plane having an iron with a cutting edge bevelled on both edges, a roller located in front of the cutting edge of the said iron and carried by spring plates in combination with adjusting screws arranged to act upon the said spring plates substantially as and for the purpose specified. 4th. A plane having an iron A, with a cutting edge a, a roller H, journalled in the spring plates I, which are secured to the plate J, in combination with the adjusting screws L, substantially as and for the purpose specified. 5th. A plane having an iron A, with a cutting edge a, in combination with a rod C, and thumb screw E, arranged substantially as and for the purpose specified.

No. 40,253. Tapping and Pipe Threading Machine.

(*Machine pour tarauder et fileter les tuyaux.*)

Horace Clark Bradford, Milwaukee, Wisconsin, U. S. A., 6th September, 1892; 6 years.

Claim.—1st. The combination in a tapping machine, of a limitedly rotable plate axled about the live spindle, and two sets of gears as 14 and 15 and 16, journalled thereon, which sets of gears are constantly in mesh with the driving wheel of the spindle, and are adapted by the limited rotation of the plate to be put respectively in engagement with the driving mechanism, whereby the direction of the rotation of the spindle is reversed, substantially as described. 2nd. In a tapping machine a rotable plate as 12, gears 14, 15 and 16, journalled segmentally thereon, the gear 14 being located at a distance from the gear 15 and on the opposite side of the interposed driving gear, a strengthening plate as 17 and suitable means for rotating the plate 12 limitedly, substantially as described. 3rd. In a tapping machine, a gear supporting plate journalled revolubly about the live spindle, a rack in its periphery, a lever handle 46 pivoted medially in the head stock and having a segmental head meshing with the peripheral teeth of the plate, and a pin 48 insertable through the head-stock and through the movable plate to lock it in position, substantially as described. 4th. In a tapping machine, a plate rotable in the head-stock about the live spindle, sets of gears as 36 and 37 and 38 journalled thereon, which gears are constantly in operative connection with a gear on the hub of the spindle driving wheel, and are arranged to be by the rotation of the plate put respectively into mesh with the shifting shaft, substantially as described. 5th. In a tapping machine a plate in the head-stock about the spindle, sets of gears supported thereon arranged and adapted to be respectively by the limited rotation of the plate, put into engagement with the spindle driving mechanism and other sets of gears carried on the plate arranged and adapted to be respectively by the same limited rotation of the plate, put in engagement with the shifting shaft, all combined substantially as described. 6th. In a tapping machine, two parallel plates as 9 and 10 fixed on and forming a part of the head-stock and having a central aperture through which the spindle passes, a flange as 11 constructed on one of the plates and forming a sleeve about the spindle extending to the other plate, a shifting gear-carrying plate 12 interposed between the plates 9 and 10, rotable on the flange 11, and gears on the plate 11 meshing with a gear on the hub of the driving wheel about the spindle, all combined substantially as described. 7th. In a tapping machine, a rotating spindle, a lead screw revolubly loose thereon, a nut in the head-stock in which the screw turns and thereby moves the spindle endwise, a gear rigid on the screw, a shifting shaft, an elongated gear on the shifting shaft meshing with the gear on the screw and other gear on the shifting shaft meshing with the intermediate gear, which intermediate gear meshes also with a gear on the hub of the spindle driving wheel, combined substantially as described. 8th. In a tapping machine, the combination with the spindle driving mechanism, of gear 26 loose on the shifting shaft and meshing with the driving mechanism, the spindle shaft, and a movable key or clutch adapted to lock the shaft to the gear 26, substantially as described. 9th. In a tapping machine, the combination with a shifting shaft as 25, and a gear as 29 loose thereon, which gear meshes with a gear on the lead screw of the spindle, of a ring or collar 30, splined on shaft 25, and provided with a pin which enters the gear 29 and locks the gear to the shaft, the locking device being constructed of such strength as to carry the ordinary strain of the mechanism, but to break or be cut off under unusual strain, substantially as described. 10th. In a tapping machine, the combination of a shifting shaft having a worm 35, a lever 54 having a segmental worm gear meshing with the worm 35, a rod 58 connected to the lever 54 and to the crank of a shaft 63, shaft 63, an arm 64 fixed on shaft 63, and having a segmental rack, an arm 65 having a segmental rack meshing with the rack on arm 64, a shaft 50 carrying the arm 65 loose thereon, an arm 66 carried on shaft 50, a rod 68 pivoted to the arm 66, which rod 68 is supported loose in a pin 70, a spring 72 coiled about and actuating the rod 69 endwise, an arm 51 rigid on the shaft 50, and riding at its free end in a clutch sliding on the driving shaft, all combined substantially as described. 11th. In the automatic shifting mechanism of a tapping machine, a shaft 50 having an arm riding in a clutch on the driving shaft, a radial arm 66 loose on the arm 50, but so keyed thereto as to provide for a limited amount of lost motion between the shaft and the arm, a rod 68 pivoted to the free end of the arm 66, the other extremity of which rod 68 is supported loose in a rotable pin 70, and a spring 72 interposed between a collar on the rod 68 and the pin 70, which spring is adapted to swing the arm 66 away from the right line between the shaft 50 and the pin 70, all combined substantially as described. 12th. In the shifting mechanism of a tapping machine, the combination with a collar shifting shaft 50, and an arm 66 keyed on the shaft, of a segmental arm 65 loose on shaft 50, which arm has a segmental gear, an arm 64 on a shaft 63, the arm 64 being provided with segmental gear meshing with the segmental gear on arm 65, and a lug 74 on the arm 66 projecting into a segmental slot in the arm 65, and adapted to engage the arm 65 at the ends of slot, whereby a prescribed amount of lost motion is provided for between the arms 65 and 66, all combined substantially as described. 13th. In the shifting mechanism of a tapping machine, a shaft 50, a thereon carried

radial arms 66 keyed to the shaft so as to have lost motion thereon, a radial arm 65 loose on shaft 50, a lug 74 on the arm 66 projecting into a segmental slot in the arm 65, and set screws 76 turning in the arm 65 into the ends of the segmental slot, and limiting the lost motion between the arms 65 and 66, all combined, substantially as described. 14th. In the shifting mechanism of a tapping machine, the combination with a medially pivoted lever 54 actuated by a worm on a shaft, and a bolt 65 pivoted in the lever arm, of a rod 58 inserted movably through the bolt 65 and connected at its other extremity with the crank of a shaft, collars 59 and 60 adjustable on the rod 58, and a spring 61 interposed between the arm 54 and collar 60, substantially as described. 15th. In the shifting mechanism in a tapping machine, the combination, with a clutch shifting shaft 50, of a shaft 66, a spring actuated rod 68 toggle jointed with the arm 66, and a lever handle 53 rigid on the shaft 50, substantially as described. 16th. A tool holding device, consisting of a spindle head having a cylindrical socket in its end and a transverse aperture partially intersecting the tool holding aperture, a recess in the key whereby it can be rotated out of the groove in the shank of the tool so as to permit the removal of the tool without the removal of the key, substantially as set forth. 17th. The combination, with a spindle head having a cylindrical socket for the reception of the cylindrical shank of the tool, of a cylindrical key inserted in a transverse aperture through the tool holder, which aperture intersects the tool holding aperture, a curved recess in the key whereby it can be rotated out of the shank of the tool, and faced ends on the key for receiving a wrench thereon whereby it can be rotated, substantially as described. 18th. The combination, with a cone surfaced tool holding spindle head, of a nut turning by a screw thread on the rear larger part of the spindle head, as and for the purpose set forth. 19th. In a tapping machine, the combination, with the frame having a bed, a carriage travelling thereon, a screw for shifting the carriage which screw rotates in the frame and turns in nuts fixed on the carriage, and provided with a hand wheel for rotating it, of the additional rotating device consisting of a worm 94 provided with a hand wheel for rotating it, a worm gear loose on the screw, a collar clutch splined on the screw arranged to be shifted into engagement with the worm gear, and means for shifting the collar, substantially as described. 20th. In a tapping machine, the combination, with a frame carrying a live spindle and having a flat bed, of a longitudinally travelling carriage, a saddle supported and travelling laterally on the carriage, and a chuck swivelled on the saddle, substantially as described. 21st. In a tapping machine, the combination, with a frame and a live spindle, of a chuck having jaws, the chuck being swivelled on the frame so as to rotate in front of the spindle about a central axis through the jaws at right angles to the spindle, substantially as described. 22nd. In a tapping machine, a saddle *a* thereon supported and swivelled, chuck frame and bolts inserted loosely in the chuck frame, the heads of which extend below the chuck frame and are arranged to travel in an annular groove in the saddle, the bolts being adapted to clamp the chuck frame releasably to the saddle, combined substantially as described. 23rd. In a tapping machine, a saddle having a central stud or pin, a thereon supported chuck frame rotatable about the central pin, a bearing screw turning through the chuck frame against the central pin and adapted to support the chuck frame pivotally on the saddle, combined substantially as described. 24th. In a tapping machine, a chuck frame, a bearing screw turning centrally through the foot of the frame, oval faced bearing blocks arranged to bear against and swivel on each other, supported centrally beneath the chuck frame and supporting the chuck frame thereon through the central bearing screw in the front thereof, combined substantially as described. 25th. In a tapping machine, the combination of a chuck frame swivelled on a saddle, an index plate 121 fixed on the chuck frame, and a saddle carried pin adapted to the chuck frame in prescribed positions to the supporting saddle, substantially as described. 26th. In a tapping machine, the combination of a saddle, a chuck frame supported and swivelled thereon, a graduated peripheral index 124 on the chuck frame, and means for clamping the chuck frame to the saddle, substantially as described. 27th. In a tapping machine, the combination, with a suitable supporting device, of a chuck frame, a thereto fixed index 121, having index notches at prescribed distances apart, a graduated peripheral index 124, and means for clamping the chuck frame to the supporting device, substantially as described. 28th. In a tapping machine, the combination, with the standard of the chuck frame, of a pipe cutting-off device consisting of a movable head block 134, a therein fixed cutting tool 139, and suitable means for adjusting the block with its cutting tool up to its work and for locking it in position, substantially as described. 29th. In a tapping and threading machine, the combination, with the frame and a live spindle carried thereon, of a swivelled chuck frame located in front of the live spindle, and a pipe cutting-off tool secured to the standard of ths chuck frame at one side of its axis of rotation, the tool being thereby adapted to cut off a pipe against the line of its rotary motion on the live spindle, and when it rotates in either direction, substantially as described. 30th. In the mechanism for shifting the chuck frame of a tapping machine, a screw 100, a thereto affixed radially projecting plate 103, provided with a hub 102, an index plate 104 revoluble on the hub 102, screws passing through slots in the plate 103 and turning into the plate 104 adapted to secure the index plate adjustably to the plate 103, and suitable means for locking the index plate to the radial plate, combined substantially as described.

No. 40,254. Parcel Holder. (*Porte-paquet.*)

Daniel W. Long and Charles Dimick, both of Lockport, Illinois, U.S.A., 6th September, 1892; 6 years.

Claim. The paper blank A, having the extension strips a, a^1, a^2, at each end, the side edges folded to the lines a^6, a^6, and having the holes a^3, a^3, in one of the folded edges to adapt it to be folded on lines a^4, a^5, and to have the said strips pasted on, as described, whereby a paper valise may be made, as set forth.

No. 40,255. Key Board for Musical Instruments.

(*Clavier pour instruments de musique*).

Frederick Julian Stimson, New York, U.S.A., assignee of Paul Von Janko, Budapest, Hungary, 6th September, 1892; 6 years.

Claim.—1st. The key lever C having series of touch plates *d e f* at different heights, combined with a pivotal support B, all arranged so that the pivotal support of the key lever shall be lower than the plane of the upper touch plate of said key lever, substantially as herein shown and described. 2nd. The frame or drawer A having the bridge B, combined with key levers C C, said key levers having touch plates *d e f* at different elevations, the top of the bridge B being higher than the plane of the lower touch plate *f* and lower than the plane of the upper touch plate *d*, substantially as and for the purpose herein shown and described. 3rd. The key lever C having step shaped front or outer portion and series of touch plates *d e f* at varying elevations and provided with the rearwardly and upwardly inclining shank *b*, so arranged that the pivot of said key lever may be higher than the plane of the lower touch plate *f*, substantially as and for the purpose specified. 4th. The key lever C having series of touch plates *d e f* at varying elevations, and pivoted to a fixed support, all arranged so that each touch plate will have its front portion above the plane of the pivotal support, substantially as herein shown and described. 5th. The key lever C having series of touch plates *d e f* at varying elevations, each touch plate having a downwardly extending apron or shield *o*, substantially as and for the purpose specified. 6th. The key lever C having touch plates *d e f* at varying degrees of elevation and combined with the fixed guide pin *j* and with the movable guide pin *i* and guide board *m*, substantially as and for the purpose specified. 7th. In a key board having series of key levers C and step shaped touch plates *d e f* arranged substantially as described, the combination of said key levers with the rear rail *n* whose upper surface is substantially on a level with the uppermost row of touch plates *d*, substantially as and for the purpose herein shown and described.

No. 40,256. Pulley Bearing. (*Coussinet de poulie.*)

Charles Thomas Brandon and Richard Stewart McPhail, Toronto, Ontario, Canada, 6th September, 1892; 6 years.

Claim. 1st. A pulley having a hub bored larger than the shaft it is placed on, in combination with two cup-shaped bearings fixed to to the shaft on either side of the pulley and extending over the hub to form an incased bearing, substantially as and for the purpose specified. 2nd. The combination, with a loose pulley, of two hollow cup-shaped bearings fixed to a shaft on either side of the pulley, a hollow hub encircling said shaft but not in contact therewith, and externally journalled on its exterior within cup-shaped bearings, an enclosed oil chamber formed in the interior of the hub surrounding the surface of the shaft, and supplied with oil from an oil cup, and holes through said hub supplied with wicking, substantially as described and for the purpose specified. 3rd. The combination, with the shaft A, of the loose pulley C, fixed to the hollow tapered hub D, the adjustable cup-shaped bearings E and F, fixed to the shaft on either side of the pulley, the oil chamber *h*, oil cup H and passage I, and holes *b*, perforating the hub D, substantially as described and specified. 4th. The combination with the loose pulley C, of the hollow perforated hub D, externally journalled within the cup-shaped bearings E and F, fixed to the shaft A, and babitted at *a*, on their bearing surfaces, and an enclosed oil chamber *h*, communicating with the oil cup H, and substantially as specified. 5th. The combination, with the loose pulley C, of the hollow hub D, externally journalled within the cup-shaped bearings E and F, fixed to the shaft A, and enclosed oil chamber *h*, substantially as describec and specified.

No. 40,257. System of Charging Car Heating Apparatus with a Heating Medium. (*Appareil servant d'intermediaire pour fournir la chaleur aux calorifères des chars de rues.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignee of James Finney McElroy, New York, New York, all in the U.S.A., 6th September, 1892; 6 years.

Claim.—1st. In a system of charging storage heaters with heating medium, the combination of a car, a tank on the car having a circulation therethrough, a coupling system connecting a supply and return pipe with the tank, and a pump in the return pipe, substantially as described. 2nd. In a system for charging storage heaters with a heating medium, the combination with the tank on the car, the heater, and outgoing and return pipes, a coupling section and a pump in the return pipe, of valves adapted to shut off the supply pipe and open an air passage whereby the coupling section may be drained, substantially as described. 3rd. In a system for charging

storage heaters with a heating medium, the combination with the tank on the car, the stationary water heater, outgoing and return pipes from the heater, a pump in the return pipe, of a coupling section and a three-way valve at the junction of said section with the supply pipe adapted to open an air passage when the supply pipe is closed, substantially as described. 4th. In a system for charging storage heaters with a heating medium, the combination with the coupling section, of the valve I, I^1, the levers 18, 19, connecting rods 20, 21, bell crank lever 22 and lever 23, substantially as described. 5th. In a system for charging storage heaters with a heating medium, the combination with the tank on the car, the stationary heater, outgoing and return pipes, a coupling section to connect these pipes with the tank, a pump in the return pipe, and means to shut off the outgoing pipe, and to admit air to the suction pipe, substantially as described. 6th. In a system for charging storage heaters with a heating medium, the combination with the heater, outgoing and return pipes, the tank on the car, of a coupling section comprising two connecting pipes, a by-pass on the car, and the valves I, I^1, substantially as described. 7th. In a system for charging storage heaters with a heating medium, the combination with the heater, outgoing and return pipes, the tank on the car, of a coupling section comprising two connecting pipes, a by-pass on the car, and the valves E, F, I and I^1, substantially as described, 8th. In a system for charging storage heaters with a heating medium, the combination with the coupling section of valves E and F, and a single operating lever therefor, adapted to operate the valves separately, substantially as described.

No. 40,258. Paper Hanging Machine.

(*Machene pour tentures de papier.*)

Adam Henry Lohlker, St. Paul, Minnesota, U.S.A., 7th September, 1892; 6 years.

Claim.—1st. In a machine of the class described, the combination of the paper roll holder, the paste box having revolving brush therein in position to bear against the back of the paper, the rollers provided with circular shear cutters at each end between which the paper is adapted to pass, means for operating simultaneously the said rollers and paste brush, and a slotted table over which the said paper passes to enter between said rollers, substantially as and for the purpose herein specified. 2nd. In a machine of the class described, the combination of the paper roll holder, the paste box having revolving brush mounted therein in position to bear against the back of the paper as it passes from the roll, rollers provided with circular shear cutters at each end between which the paper is passed, means for simultaneously operating the rollers and paste brush, and a paste distributor consisting of a brush extending upwardly into the natural path of the paper between the paste brush and rollers over which the paper passes after contact with the revolving brush, substantially as and for the purpose specified. 3rd. In a machine for hanging paper, the roll holder, rotary paste brush, means for holding the paper in contact with said brush, rollers having circular cutters at each end between which the paper passes, endless carrier belt adapted to support and carry the paper after passing said rollers, means for rotating said rollers, paste brush, and carrier belt shaft simultaneously, and a vertically adjustable frame upon which said carrier is mounted, substantially as specified. 4th. In a machine for hanging paper, a roll holder, pasting and trimming devices substantially as described, an endless carrier belt for receiving the paper after having passed said trimming and pasting devices, means for operating said devices and carrier, and vertically adjustable supports upon which the outer end of said carrier belt is mounted, substantially as specified. 5th. In a machine for hanging paper, the roll holder, pasting and trimming devices substantially as described, an endless carrier belt for receiving the paper after passing said devices, means for operating said devices and carrier, a vertical support upon which outer end of the carrier belt is mounted, a carriage adapted to slide upon said support, horizontal brush mounted upon said carriage, and a spring roller connected with said carriage to draw the same to the top of the support, substantially as and for the purpose specified. 6th. In a machine for hanging paper, the roll holder, pasting and trimming devices substantially as described, an endless belt for receiving the paper after passing said devices, means for operating said devices and carrier belt, a vertical support upon the outer end of which said carrier is borne, a carriage adapted to slide vertically upon said support, horizontal brush carried by said carriage, a spring roller mounted at the top of said support and connected with said carriage to raise the same, and a horizontal knife or cutter at the top of said support in position to be struck by said brush, substantially as and for the purpose herein specified.

No. 40,259. Hoisting and Conveying Apparatus.

(*Appareil pour élever et transporter.*)

Thomas Spencer Miller, New York, New York, U.S.A., 7th September, 1892; 6 years.

Claim.—1st. In combination, a rope carrier, and means supported independently of the rope carrier whereby the carrier is placed in position along the rope, substantially as described. 2nd. In combination, a series of rope carriers, a series of stops and means for supporting the same, each of said stops being adapted to engage one of the rope carriers and to pass by the others, substantially as described. 3rd. In combination, an auxiliary rope secured at one end to the carriage and at the other end to a winding drum, substantially as described, whereby the carriage may be held in any required position on the cable by the auxiliary rope whilst the fall rope is in operation, substantially as described. 4th. In combination, a cable or trackway, a carriage to travel thereon, a retaining and outward hauling rope and a rope carrier, substantially as described. 5th. In combination, a cable, a carriage to travel thereon, a fall rope, a retaining and outward hauling rope and a carrier whereby the retaining and outward hauling rope is supported, and mechanism whereby the position of said carrier is automatically determined, substantially as described. 6th. In combination, a cable, a carriage to travel thereon, a fall rope, a retaining and outward hauling rope, a rope carrier and means connected with said carriage and said rope carrier whereby the carriage causes the return of the carrier to a supporting position, substantially as described. 7th. In a conveying apparatus, in combination, a cable, a carriage to travel thereon, a fall rope, a retaining and outward hauling rope and a supporting device connected with said carriage, whereby the position of one or both of said ropes is maintained at the point where it passes said carriage, substantially as described. 8th. In combination, an auxiliary carrier supporting rope parallel or nearly so with the cable or trackway and a rope carrier engaging with said auxiliary rope, substantially as described. 9th. In combination, an auxiliary rope parallel or nearly so with the cable or trackway, a rope carrier engaging with said auxiliary rope, and means upon the load carriage whereby said auxiliary rope is depressed as the cable is depressed under the load, substantially as described. 10th. In combination, a rope carrier, means whereby said rope carrier may be picked up and supported by the carriage and a member on said rope carrier whereby it is supported on the cable when not supported by the carriage, the said member being provided with converging sides adapted to clamp the cable and hold the carrier stationary thereon, substantially as described. 11th. In combination, a rope carrier, an auxiliary rope wherewith the carrier engages, said auxiliary rope being provided with means whereby it is held under a yielding tension, substantially as described.

No. 40,260. Street Sweeper. (*Balayeuse de rues.*)

John Jones and Alexander Gillies, Toronto, Ontario, Canada, 7th September, 1892; 6 years.

Claim.—1st. The bar D, pivoted at one end on the axle E, and having fixed to its other end a journal box F, in which a spindle extending from the yoke G, is journalled, in combination with the bracket H, pivotally connected to the yoke G, and having a journal box formed in it to receive the shaft Q, substantially as and for the purpose specified. 2nd. The bevel pinion P, fixed to the shaft Q, journalled in the bracket H, and the bevel pinion O, carried by a spindle extending from the bracket H, in combination with the sprocket wheel L, sprocket chain N, and sprocket wheel C, arranged substantially as and for the purpose specified. 3rd. The bar D, pivoted at one end on the axle E, and having fixed to its other end a journal box F, in which a spindle extending from the yoke G is journalled, and the bracket H, pivotally connected to the yoke G, and having a journal box formed in it to receive the shaft Q, in combination with the bevel pinion T, fixed to the shaft Q, journalled in the bracket H, the bevel pinion O, carried by a spindle extending from the bracket H, a sprocket wheel L, sprocket chain N, and sprocket wheel C, arranged substantially as and for the purpose specified. 4th. A rotating brush shaft Q, suitably supported at one end by a rod J, connected at one end to a properly supported pivoted bar Y, and at its other end to the bracket H, which supports the other or driven end of said shaft Q, in combination with yoke G, pivotally connected to the bracket H, and journalled on the rod G, substantially as and for the purpose specified. 5th. The rod V, arranged to connect S, in which the light end of the shaft Q is supported, to the pivoted bar W, in combination with the equalizing bar Z, suspended from the pivoted lever *a*, and connected respectively to the pivoted bar W, and the pivoted bar Y, in such a manner that the weight supported by the said pivoted bars shall be equally divided between the ends of the said equalizing bar Z, arranged substantially as and for the purpose specified. 6th. A cylindrical fixed brush made in segments supported by and between two end pieces to the shaft, Q, and held together and in position by adjustable metal bands, arranged substantially as and for the purpose specified.

No. 40,261. Electric Signal for Cars.

(*Signal électrique pour chars.*)

Julius J. Wolf, Kansas City, Missouri, U.S.A., 7th September, 1892; 6 years.

Claim.—1st. In an electric signal for cars, the combination of an open electric circuit including therein an audible alarm signal, a source of electric energy, a stationary contact plate secured to the floor of a car and having one of the conductors of the circuit connected thereto, and a movable foot plate having one of the conductors of the circuit connected thereto, and a movable foot plate having the other conductor of the circuit connected thereto and arranged to come in contact with the stationary contact plate and close the circuit, substantially as described. 2nd. In an electric signal for cars, the combination of an open electric circuit, an audible alarm signal included in said circuit a source of electric energy, a stationary contact plate, and a movable spring pressed foot plate arranged over

the stationary plate and normally out of engagement therewith, substantially as described. 3rd. In an electric signal for cars, the combination of an open electric circuit, an audible alarm signal included in said circuit, a source of electric energy, a stantionary contact plate in the floor of a car, a movable spring pressed foot plate arranged over the stationary contact plate, and a detent arranged to engage the foot plate and hold the same in its adjusted positions, substantially as described. 4th. The combination of the stationary contact plates 5, 5^1, arranged a suitable distance from each other in the floor of a car, a movable foot plate arranged and held over one of said contact plates and adapted to be adjusted over the other contact plate, and open electric circuit having its conductors connected to said contact and foot plates, an audible alarm signal, and a source of electric energy, substantially as described. 5th. The combination with a grip-car having the gripping lever, of the stationary contact plates 5, 5^1, fixed in the floor of a car and arranged a suitable distance from each other and on one opposite side of the grip-lever, a movable foot plate arranged over one of the stationary contact plates and adapted to be adjusted over the other contact plate on the opposite side of the grip-lever, an open electric circuit having its conductors attached to said foot and contact plates, an audible signal mechanism included in said circuit, and a source of electric energy, substantially as described. 6th. In an electric signal for cars, the combination with a floor having a recess or slot therein, a movable foot plate having a tongue fitted in the slot or recess of the floor, a stationary contact plate arranged beneath the free end of the foot plate, a spring for lifting the foot, a spring controlled detent having the shoulders, an open electric circuit, a signal mechanism included therein, and a source of electric energy, substantially as described. 7th. In an electric signal for cars, the combination of an open electric circuit, a signal mechanism included therein a stationary contact plate in the floor of a car, a movable foot plate arranged to contact with the said stationary plate, and a dynamo included in said electric circuit and having the shaft of its armature geared or belted to one of the axles of a car, substantially as described.

No. 40,262. Machine for Cutting Metals.

(*Machine pour couper les métaux.*)

William Smith, Boston, Massachusetts, U.S.A., 7th September, 1892; 6 years.

Claim.—1st. The combination and arrangement of the standard, and the stationary and moving cutting blades, and one or more working levers with the punching device actuated by the same lever or levers, all substantially as shown and described. 2nd. The combination and arrangement of the standard, the stationary and moving cutting blades, and the lever operated above the upper cutting blade, all substantially as described and shown. 3rd. The combination and arrangement of the standard, and the two cutting blades and the upper lever, with the subsidiary lower lever, and the upper cutter connecting bar, all substantially as described and shown. 4th. The combination, with the standard and two cutting blades, the upper blade being actuated by a lever above it, of the strengthening bar W, attached respectively to the two opposing portions of the standard, all constructed and arranged, substantially as shown described. 5th. The combination with the moving half of the cutting shears of the bearing pin Q, and the pressure pin S, with the slot shown in the moving blade P, all substantially as described and shown. 6th. The combination and arrangement of the standard, the two cutting blades, and the upper lever with the upper lever holder N, composed of two metallic bars fastened to the upper cutter bar P, all constructed and arranged, substantially as shown and described.

No. 40,263. Safety Lamp. (*Lampe de sûreté.*)

James Thorne, London, England, 7th September, 1892; 6 years.

Claim.—1st. A safety lamp, comprising a lamp cone *j*, covering and surrounding the wick tube a^1, and beneath which explosive mixtures entering with the air for supporting combustion will become ignited in such a manner that when exploding they will extinguish the flame of the lamp. 2nd. A safety lamp, provided with a lamp cone such as described, and with concentric glass cylinders, and so constructed that the base and upper part of the lamp can be removed without disturbing the joints at the ends of said cylinders, substantially as described. 3rd. A safety lamp, provided with a lamp cone such as described, and so constructed that the air for supporting combustion must pass from the exterior of the lamp downwards through an annular space between two glass cylinders and then through a horizontal or nearly horizontal perforated plate and ring of wire gauze beneath the said glass cylinders and into the said lamp cone, substantially as described. 4th. The combination, with the oil reservoir provided with the lamp cone, of the upper and lower rings of the lamp frame connected by the pillars *d*, the taper chimney or flue having the perforated flange, the horizontal or nearly horizontal perforated plate with or without the wire gauze ring screwed into the said lower ring, and the concentric glass cylinders secured between the said flange and the perforated plate, substantially as and for the purposes set forth. 5th. The combination, in a miner's safety lamp, of the lamp cone *j*, the concentric glass cylinders *e*, *f*, the wire gauze *g*, and the taper chimney or flue *h*, substantially as and for the purposes specified. 6th. The combination, in a miner's safety lamp, of the lamp cone *j*, the concentric glass cylinders *e*, *f*, and the wire gauze *g*, substantially as and for the purposes specified. 7th. The shield or guard *r*, of wire gauze over the apertures for the admission of air, substantially as and for the purposes set forth. 8th. The combination, with a vertical bolt for locking the cap or bonnet to the upper ring of the lamp frame, of a wick adjusting spindle forked in two parts, one of which serves as a horizontal bolt for locking the oil reservoir to the lower ring of the said frame, the said bolts being so arranged that the vertical bolt can be unlocked when, but not until, the horizontal bolt is withdrawn. 9th. The combination, with the cap or bonnet *m*, of a flanged ring *w*, surrounding the openings in the upper end of the said cap or bonnet.

No. 40,264. Apparatus for Dispensing Liquids.

(*Appareil pour la distribution des liquides.*)

William Miles Fowler, New York, State of New York, U.S.A., 7th September, 1892; 6 years.

Claim.—1st. In combination, two or more dispensing mechanisms and a common recording mechanism under the control of each dispensing mechanism to make a record corresponding to that particular dispensing mechanism, substantially as set forth. 2nd. In combination, two or more independent dispensing mechanisms, a recording mechanism common to the independent dispensing mechanisms, and a locked inclosure surrounding the said mechanisms and preventing access thereto except by a person holding the key to the lock, substantially as set forth. 3rd. In combination, a suitable casing, measuring receptacles within the casing, two or more reservoirs, each in communication with its measuring receptacle, a discharge conduit, means for opening and closing the measuring receptacle to the reservoir and to the discharge conduit, operating levers extending from within the casing to within reach of the operator outside the casing, a movable part under the control of each of the operating levers, and a common recording mechanism under the control of said movable part and each of the operating levers, substantially as set forth. 4th. In combination, a suitable casing, measuring receptacles within the casing, two or more reservoirs, each in communication with its measuring receptacle, a discharge conduit, means for opening and closing the measuring receptacle to the reservoir and to the discharge conduit, operating levers extending from within the casing to within reach of the operator outside the casing, a movable part under the control of each of the operating levers, and a common duplicate recording mechanism under the control of said movable part and each of the operating levers, substantially as set forth. 5th. In combination, two or more dispensing mechanisms, a recording mechanism common to the several dispensing mechanism, and a locking mechanism common to the several dispensing mechanisms, the recording and locking mechanisms being under the control of each of the dispensing mechanisms, substantially as set forth. 6th. In combination, two or more dispensing mechanisms, type changing mechanism, impression mechanism, a movable part under the control of each of the dispensing mechanisms for operating the impression mechanism, and a second movable part under the control of each of the dispensing mechanisms for operating the type changing mechanism, substantially as set forth. 7th. In combination, two or more dispensing mechanisms, operating levers for each, a rock shaft under the control of each of the operating levers, a reciprocating rack bar under the control of each of the operating levers, an impression device under the control of the rock shaft, and a type changing device under the control of the rack bar, substantially as set forth. 8th. The combination, with a supply reservoir and a measuring receptacle in communication therewith, of a discharge conduit, cut off devices in position to open and close communication between the measuring receptacle and the reservoir and discharge conduit, and an operating lever for controlling the cut off devices, substantially as set forth. 9th. The combination, with a supply reservoir and a measuring receptacle below it and in communication with it, of a discharge conduit in communication with the measuring receptacle, a reciprocating rod provided with cut off devices for effecting a closing of one and an opening in the other, of the communication between the measuring receptacle and the reservoir and discharge conduit, a reciprocating frame in engagement with the said reciprocating rod, and an operating lever in engagement with the reciprocating frame, substantially as set forth. 10th. The combination, with the reservoir, the discharge conduit, the measuring receptacle interposed between the reservoir and the discharge conduit, and the devices regulating the inlet of the liquid to and its exit from the measuring receptacle, of a reciprocating frame engaged with said regulating devices, a rack on said frame and an operating lever provided with a sector adapted to engage the rack, substantially as set forth. 11th. The combination, with the reciprocating frame, the lever for operating it and the dispensing mechanism under its control, of a movable type carrier under the control of the reciprocating frame, means for feeding a strip of material across the face of the type and means for pressing the material toward the type to form an impression, substantially as set forth. 12th. The combination, with the dispensing mechanism, and the movable type carrier under the control of the dispensing mechanism, of a rock shaft adapted to be rocked by the operating lever of the dispensing mechanism, devices for feeding strips of material to be printed across the face of the type and devices for pressing the strip of material toward the type, the said feed and impression devices being under the control of the said rock shaft, substantially as set forth.

13th. The combination, with the type and the lever for operating the dispensing mechanism, of a rock shaft under the control of said lever, a vibrating lever one arm of which is connected with a crank on the rock shaft and the other arm of which is connected with a swinging dog, a reciprocating plunger under the control of the said swinging dog and means for presenting the material to be printed between the type and plunger, substantially as set forth. 14th. The combination, with the lever for operating the dispensing mechanism, the type and a rock shaft under the control of said operating lever, of a vibrating lever one arm of which is connected with a crank on the rock shaft and the opposite arm with a swinging dog, a reciprocating plunger and plunger carrier under the control of said swinging dog, a pawl carried by said vibrating lever, gear with which said pawl is adapted to engage, and feed mechanism controlled by said gear for presenting the material to be printed between the plunger and type, substantially as set forth. 15th. The combination, with the dispensing mechanism, comprising means for cutting off the supply from a reservoir to a measuring receptacle and subsequently opening communication between the measuring receptacle and a discharge conduit, of a printing mechanism comprising type, a plunger for pressing the material to be printed toward the type, means for feeding the material to be printed between the plunger and type and an operating lever for imparting motion to the several mechanisms, the operation of the feed and the plunger being so timed with respect to the cut-off and discharge in the dispensing mechanism that the feed will take place at the moment of cutting off, and a plunger will advance intermediate of the cut-off and the opening of the discharge, substantially as set forth. 16th. The combinatfon, with two or more dispensing mechanisms, each under the control of its own operating lever and a rock shaft forming a common support for the several operating levers, of a movable type carrier, a bar for operating the type carrier, abutments on the said carrier one for each dispensing mechanism, swinging arms, one for each dispensing mechanism, adapted to engage the abutment on the type operating bar, cams under the control of the several operating levers for operating said arms and thereby throwing the desired type into position, and an impression mechanism, substantially as set forth. 17th. The combination, with the type, the impression mechanism, means for feeding the material to be printed between the type and the impression mechanism and an inking ribbon passing across the face of the type, of a rock shaft for controlling the movements of the impression mechanism, a dispensing mechanism, an operating lever for controlling the dispensing mechanism and the rock shaft, and a feeding mechanism controlled by said rock shaft for advancing the inking ribbon, substantially as set forth. 18th. The combination, with two or more dispensing mechanisms, comprising a measuring receptacle interposed between the supply reservoir and the discharge conduit, a reciprocating frame, cut-off devices controlled by said reciprocating frame, and operating levers, one for each dispensing mechanism, of a series of sliding blocks located below the said reciprocating frames and spaced apart so as to admit one only of the reciprocating frames between their ends at one time, substantially as set forth. 19th. The combination, with the two or more vertically sliding frames for controlling the dispensing mechanisms, of a series of blocks located below the ends of the frame and spaced apart so as to admit one only of the said reciprocating frames between their ends at one time, the said blocks being provided with bevelled corners and adapted to be slid endwise by the depression of the reciprocating frames, and a button or locking piece adapted to lock the said blocks in closed adjustment to prevent the operation of any one of the reciprocating frames, substantially as set forth. 20th. The combination, with the operating lever extending through the front of the casing, of a guard or brake pivotally secured thereto and adapted to cover the opening through the casing in proximity to the lever, substantially as set forth.

No 40,265. Fishing Apparatus. (*Appareil de pêche.*)

Ira Dunham, Detroit, Michigan, U. S. A., 7th September. 1892 ; 6 years.

Claim.—1st. In a fishing apparatus, the combination of a vessel, a net secured near the bow, and extending toward the stern of said vessel, and one or more receptacles for fish located at the rear end of said net and accessible from said vessel, substantially as shown and described. 2nd. In a fishing apparatus, the combination of the vessel A, a net N secured to the bow of said vessel, to a frame work G, H, and extending toward the stern of said vessel, said frame work being pivoted to said vessel. and means for turning said frame work and holding it in its various positions, substantially as shown and described. 3rd. In a fishing apparatus, the combination of the vessel A, provided with a well B though its hull, a net N secured at one end at the bow of said vessel and extending to said well and one or more receptacles for fish located at the lower end of said well, substantially as shown and described. 4th. In a fishing apparatus, the combination of the vessel A, a net N secured at the bow of said vessel to a frame work G, H, and extending toward the stern of said vessel, said frame work being pivoted to said vessel and being adapted to be contracted and expanded, and means for rotating said frame and holding it in its various positions, substantially as shown and described. 5th. The combination of the vessel A, provided with a frame work C, D below its hull, fish receptacles E, E, adapted to rest in frame work, a frame work G, H pivoted toward the bow of said vessel, a net secured to the frame work G, H at one end, and adapted to extend to the frame work C, D at the other end, a rope P secured to the last mentioned end of said net, and extending through said frame work C, D, a spar Q, secured to the frame work G, H, and means for raising and lowering said spar, substantially as shown and described.

No. 40,266. Combined Drill Hoe and Cultivator Tooth. (*Dent de semoire et coutre de cultivateur combinés*)

John Muir, Brantford, Ontario, Canada, 7th September, 1892 ; 6 years.

Claim.—1st. A cultivator tooth connected to a drag bar and having a grain hopper attached to it in combination with a rearwardly curved shoe fixed to the tooth and having a hole through it where it passes below the bottom of the hopper, substantially as and for the purpose specified. 2nd. A rearwardly curved shoe connected to the back of a cultivator tooth and having a hole punched through it so that the metal punched from the hole shall form the lower portion of the sides of the hopper extending from the shoe, substantially as and for the purpose specified. 3rd. A rearwardly curved shoe connected to the back of a cultivator tooth, a hopper attached to the tooth or plate, a hole made through the shoe at the bottom of the hopper, in combination with a skirt attached to the curved shoe, substantially as and for the purpose specified. 4th. A cultivator tooth connected to a drag bar and having a grain hopper attached to it in combination with a rearwardly curved shoe fixed to the tooth and formed so that it will leave a passage way below the bottom of the hopper, substantially as and for the purpose specified.

No. 40,267. Bar for Watch Chains.

Barre pour chaines de montre.)

Charles Bolt, Montreal, Quebec, Canada, 7th September, 1892 ; 6 years.

Claim.—1st. A seamless sleeve section for watch chain bars. 2nd. A solderless sleeve section for watch chain bars. 3rd. A seamless and solderless sleeve for watch chains bars. 4th. A sleeve section, for watch chain bars, formed of a single piece of metal.

No. 40,268. Machine for Making Spikes and Nails.

(Machine à faire des chevilles et clous.)

Howard Greer, Edgewater, Illinois, U.S.A., 7th September, 1892 ; 6 years.

Claim.—1st. In a machine for finishing spikes or nails, a series of grinders, in combination with a mechanism for automatically bringing the spikes to said grinders, and mechanism for automatically presenting the points of the spikes to the grinding surfaces, substantially as described. 2nd. In a machine for finishing spikes or nails, a series of grinders, in combination with a carrier moving along past said grinders, spike holders or chucks mounted on said carriers and vibratable laterally thereon, and mechanism whereby said chucks may be vibrated laterally to present the points of the spikes to the grinders, substantially as described. 3rd. In a machine for finishing spikes or nails, a series of grinders arranged alternately in different parallel planes and with their grinding faces opposed, in combination with a carrier arranged to travel longitudinally between the opposing sets of grinders, laterally vibratable spike holders mounted on said carriers, and mechanism whereby said holders are vibrated automatically and alternately from side to side to present the points of the spikes alternately to the grinders on opposite sides of the carrier, substantially as described. 4th. In a machine for finishing spikes or nails, a series of revolving grinders having the grinding surfaces upon the sides thereof, in combination with an endless belt arranged to travel along the sides of said surfaces, a series of spike holders or chucks attached to said belt by hinge connections which permit both lateral and vertical vibration thereof, and devices for automatically vibrating the said chucks laterally, substantially as described. 5th. In a machine for finishing spikes or nails, a series of revolving grinders, in combination with a mechanism for automatically bringing the spikes to said grinders, and mechanism for automatically presenting the points of the spikes to the grinding surfaces, driving mechanism for imparting the required motion to the carrier, and separate driving mechanism for rotating the grinders, substantially as described. 6th. In a machine for finishing spikes or nails, a series of grinders mounted on parallel arbors, in combination with a counter shaft arranged at right angles to said arbors and provided with driving pulleys, by means of which the latter are rotated by suitable belts, substantially as described. 7th. In a machine for finishing spikes or nails, a series of standards D, mounted lengthwise of the machine and adjustable laterally thereof, in combination with rotating grinding stones or rings D^1, having their arbors mounted in said standards and provided with suitable driving pulleys, a driving counter shaft C, arranged at right angles to the grinder arbors, and provided with pulleys as c^1, c^{11}, whereby motion may be communicated to the latter by suitable belts, and a spike carrier arranged to travel along past the cutting faces of the grinders, substantially as described. 8th. In a machine for finishing spikes or nails, a series of revolving grinders, having their cutting faces on the sides thereof, in combination with an endless carrier belt H, spike holders or chucks O connected to said carrier by

a vertical pivot to permit lateral vibration, springs W extending outward and inclined away from the sides of said holder, and guides arranged in the path of said springs at each grinder, whereby the holders are automatically vibrated to turn the points of the spikes against the cutting surfaces of the grinders, substantially as described. 9th. In a machine for finishing spikes or nails, an endless spike carrying belt H, in combination with a base K, attached to the belt by hinge joints which permit both vertical and lateral vibrations thereof, and the spike holder or chuck O connected to said base plate by a vertical pivot which permits lateral vibration of the chuck, and mechanism for automatically vibrating the said spike holder or chuck as it is carried forward by the belt, substantially as described. 10th. The endless carrying belt H, in combination with the cross hinge L, provided with vertical *u* on one leaf, the base plate K pivoted at one end to said pin, the pivoted bridle H connecting the other end of said plate to the belt, and the spike holder O, pivoted by a vertical pin *p*, to said plate, substantially as described. 11th. The revolving grinders D^1, in combination with the carrier belt H, the laterally vibratable spike holders O mounted on said carriers, and guide bars *x*, x^1, arranged on the front side of each grinder, and adapted to receive the point of the spike between them when turned in against the cutting face of the grinders, substantially as described. 12th. The revolving grinders D^1, having their cutting faces arranged upon one side thereof, in combination with a pair of guide bars *x*, x^1, arranged along the front of each grinder, adapted to receive the point of the spike between them and the upper one free to move vertically, substantially as described. 13th. The revolving grinders D^1, provided with cutting faces on one side, in combination with a pair of guide bars *x*, x^1, arranged one above the other in front of each grinder, a gauge bar *y* arranged opposite each lower guide bar, a carrier H, and a laterally vibrating spike holder O mounted on the carrier, substantially as described. 14th. The grinders D^1, in combination with the guide bars *x*, x^1, arranged in front thereof, the gauge bars *y*, the carrier H, the laterally vibratable spike holders O mounted thereon, and the side springs W fastened to the holder at the sides thereof, and with their free ends arranged to come in contact with and slide along the said guide bars to vibrate the holders, substantially as described. 15th. The grinders D^1, in combination with the carrier belt H, base plates K, pivoted thereto, spike holders O pivoted to said plates, guide bars *x*, x^1, guage bars *y* connected at their rear ends to their support by fixed pivots about which they have a limited lateral vibration, and springs Q arranged to act upon the front ends thereof, substantially as described.

No. 40,269. Harness. (*Harnais.*)

Alfred Edward Choquette, Milwaukee, Wisconsin, U. S. A., 8th September, 1892; 6 years.

Claim. 1st. The combination, with vehicle thills, of a harness breast strap, and elastic tapes connecting said thills and breast strap, substantially as set forth. 2nd. The combination, with vehicle thills, of a harness breast strap provided with a loop, and elastic tapes connecting said thills and breast strap loop, substantially as set forth. 3rd. The combination, with vehicle thills, of a harness breast strap provided with a loop, elastic tapes having split rings engaging the breast strap loop, eyes on said thills, and hooks on the tapes for engagement with the thill eyes, substantially as set forth.

No. 40,270. Electric Railway. (*Chemin de fer électrique.*)

Charles Richter, Camden, New Jersey, U. S. A., 8th September, 1892; 6 years.

Claim. In an electric railway, a conductor composed of sections separated from each other and connected by switches, a motor with suitable contacts at each end of collecting the current from the conductor, and a magnet upon each car arranged to operate the switches between the sections to hold open the circuit between said sections as the car passes, said switches returning to close the circuit after the car has passed, all substantially as described.

No. 40,271. Rail Joint. (*Joint de rail.*)

August Klein, Chicago, Illinois, U. S. A., 8th September, 1892; 6 years.

Claim. The combination, with a railway rail, of the dovetail groove formed in the bottom thereof at one end, the dovetail projection extending from the opposite end at the bottom thereof, the stud or lug projections from the T-portion of the end having the dovetail groove, and the recess formed in the T-portion above the dovetail projection, substantially as described.

No. 40,272. Method of Making Boots and Shoes.
(Méthode de faire les chaussures.)

George Willey, Athol, and Perley Augustus Stone, Haverhill, both in Massachusetts, U.S.A., 8th September, 1892; 6 years.

Claim. 1st. The improved method of lasting the herein described upper having a plurality of draw cords around the fore part, one around the toe portion and the other around the toe portion and extending to the rear portion of the fore part, both cords being connected as described, which consists in placing the same upon a last and gathering in and securing the toe part by temporary lasting tacks, then drawing in and securing the toe lasting cord, thereby completing the lasting of the toe portion, and then lasting the sides of the fore part by drawing the longer cord backwardly from the toe, pulling the ends of said cord crosswise of the shoe in opposite directions to hold the edges of the upper in place, and at the same time molding said edges upon the bottom of the last by hammering, and finally securing the rear ends of the said longer cord thereby retaining the edges of the fore part in position, as set forth. 2nd. The improved method of lasting the herein described upper having a plurality of draw cords around the fore part, one around the toe portion and the other around the toe portion and extending to the rear portion of the fore part, both cords being connected as described, and a third cord around the heel seat portion of the upper, which consists in placing the same upon a last and gathering in and securing the toe part by temporary lasting tacks, then securing the shank edges of the upper to a shank piece laid upon the bottom of the sole, then drawing in and securing the heel seat lasting cord, thereby completing the lasting of the heel seat portion of the upper, then drawing in and securing the toe lasting cord, thereby completing the lasting of the toe portion, and then lasting the sides of the fore part by drawing the longer cord backwardly from the toe, pulling the ends of said cord crosswise of the shoe in opposite directions to hold the edges of the upper in place, and at the same time moulding said edges upon the bottom of the last by hammering, and finally securing the rear ends of the said longer cord, thereby retaining the edges of the fore part in position, as set forth. 3rd. The improved method of making a boot or shoe without an inner sole, the same consisting in temporarily attaching to the bottom of the fore part of the last a lining holder having skived or bevelled edges, and to the shank and rear portion of the last a shank piece, lasting the upper upon said shank piece and lining holder, and during the lasting operation permanently attaching the upper to the shank piece by tacks or other permanent fastenings, the edge of the fore part of the upper bearing upon the skived margin of the lining holder and being protected thereby during the subsequent operation of attaching the outer sole to the upper, cementing an outer sole to the inwardly turned edges of the upper and to the under surface of the lining holder, and thus causing the outer sole to hold the upper and lining holder in place when removed from the last, and then removing the boot or shoe from the last and permanently attaching the outer sole to the upper outside the lining holder and through the shank piece, the bevelled edges of the lining holder covering the edges of the fore part of the upper and its lining and preventing the displacement of the said lining when the outer sole is being attached, as set forth.

No. 40,273. Lifting Jack. (*Cric.*)

Andrew Warren, assignee of Louis Jacob Crecelius, both of St. Louis, Missouri, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. In combination, the standard A, the lifting bar B, a lifting lever D, a clutch box substantially U-shape in side elevation having upper and lower limbs c^4 perforated for receiving the lifting bar, and a grip carried by said clutch box, substantially as described. 2nd. In combination, the standard, the lifting bar, a lifting lever, a clutch box having a wall c^2 with interior rounded face, and a turning grip carried by said box and seated against the said wall throughout the width thereof, substantially as subscribed. 3rd. In combination, the standard, the lifting bar, a lifting lever, a clutch box, a grip having a bearing and gripping part seated therein and the arms *d* extending outside in position to be operated, the said lifting lever bearing under the ends of the arms *d*. 4th. In combination, the standard, the lifting bar, the lifting lever, the clutch box and grip, the said lever being removably journalled and retained in place by the lifting bar, substantially as described. 5th. In combination, the standard, the lifting bar, the lifting lever and clutch box and a vertically movable holding clutch box with a releasing lever acting directly upon said clutch box, substantially as described. 6th. In combination, the standard having a chamber E^1, the lifting bar, the lifting lever, the lifting clutch box, the vertically movable holding clutch box within the chamber E^1, the grip having arms d^1 to bear upon the bottom of the chamber and the releasing lever to operate the clutch box vertically, substantially as described. 7th. In combination, a standard, a lifting lever, a clutch box, a lifting bar having a channel, a grip having a cylindrical part *c* to bear upon the face of the bar, and a notch *h* and a clutch block in said notch bearing within the channel of the bar, substantially as described.

No. 40,274. Lifting Jack. (*Cric.*)

Andrew Warren, assignee, of Louis Jacob Crecelius, both of St. Louis, Missouri, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. In combination with a standard A and lifting bar B, a lifting head E, a grip *a*, carried thereby, a lifting lever G, and a loop F, pivoted to the lifting head and interposed between the lifting lever and the grip, said loop being acted upon by the lever, whereby the action of the lever is transmitted to the grip through the loop, substantially as described. 2nd. In combination with the standard A and lifting bar B of a jack, a lifting head E, having a pocket, a grip *a*, in said pocket, a pivoted loop F bearing on said grip *a*, and a lifting lever G adapted to act upon the opposite end of said loop, substantially as described.

No. 40,275. Ammunition Belt. (*Cartouchière.*)

Frank Milton Garland, Ebenezer B. Beecher, William A. Fosket and Frederick P. Newton, all of New Haven, Connecticut, and Thomas H. Sherman, Washington, District of Columbia, all in the U.S.A., 8th September, 1892; 6 years.

Claim.—1st. An ammunition belt consisting of a flexible web bearing upon one face a number of cups, for firmly grasping the cartridges, open on one side so that the cartridges may be removed therefrom laterally, and provided with projecting wings on the edges to afford a bearing for the cartridges removing device, substantially as specified. 2nd. An ammunition belt consisting of a flexible web bearing upon one face a number of cups, for firmly grasping the cartridges, open on one side so that the cartridges may be removed therefrom laterally, and provided with projecting wings on the edges to afford a bearing for the cartridge removing device, the ends of said wings passing through the web and clinched on the opposite face, substantially as specified.

No. 40,276. Machine Gun. (*Fusil à magasin.*)

Frank Milton Garland, Ebenezer B. Beecher, William A. Fosket and Frederick P. Newton, all of New Haven, Connecticut, and Thomas H. Sherman, Washington, District of Columbia, all in the U.S.A., 8th September, 1892; 6 years.

Claim.—1st. In a machine gun, in combination with the loading and firing mechanism, feeding mechanism consisting of a pair of wheels having pocketed peripheries mounted upon shafts upon each side of the shell beneath the barrels, the shafts being connected with and alternately rotated by the driving shaft, guides adjacent to the feed wheels adapted to receive the heads of the cartridges as they pass from the wheels, and combs attached to the shell adjacent to the wheels for stripping the cartridges from the belts, substantially as specified. 2nd. In a machine gun, in combination with the loading and firing mechanism, feeding mechanism consisting of a pair of wheels having pocketed peripheries mounted upon shafts on each side of the shell beneath the barrels, the said shafts bearing ratchets, pawls for rotating the ratchets, racks for driving the pawls, pinions for reciprocating the racks, slides bearing racks for driving the pinions, and levers in contact with cams upon the driving shaft, for moving the slides, substantially as specified. 3rd. In a machine gun, in combination, cams loosely mounted upon the driving shaft, ratchets adjacent to the cams with one piece secured to the shaft and the complementary pieces secured to the cams, bolts movable into and out of the path of the pawls, feeding mechanism connected with and driven by the cams, loading mechanism reciprocated by the cams, and firing mechanism released by the rotation of the cams, substantially as specified. 4th. In a machine gun, in combination, cams bearing pawls loosely mounted upon the driving shaft, ratchet discs secured to the shaft adjacent to the cams and adapted to engage the pawls, bolts projecting through the shell for releasing the pawls from the ratchets, feeding mechanism connected with and driven by the cams, loading mechanism reciprocated by the cams, substantially as specified. 5th. In a machine gun, in combination, cams bearing pawls loosely mounted upon the driving shaft, ratchet discs secured to the shaft adjacent to the cams adapted to engage the pawls, bolts projecting through the shell for releasing the pawls from the ratchets, feeding mechanism consisting of wheels mounted upon shafts intermittently rotated through the means of levers oscillated by the cams, reciprocating loading spindles, jointed levers operated by the cams attached to the loading spindles, firing mechanism, and slides moved into and out of contact with the firing mechanism by contact with the pawls upon the cam blocks as they revolve, substantially as specified. 6th. In combination in the herein described machine gun, reciprocating spindles, cams on the driving shaft connected by levers with the spindles, each of said spindles having a longitudinal mortise, a firing pin held in said mortise, plates covering said mortise, and a button having an eccentric base for holding each plate in place, substantially as specified. 7th. In combination, with the herein described machine gun, reciprocating spindles, cams on the driving shaft connected by levers with the spindles, each of said spindles having a longitudinal mortise, a firing pin held in said mortise, a cocking roll secured to the spindle, and a hammer in the path of the cocking roll, whereby when the spindles are moved rearward the hammers are cocked, substantially as specified. 8th. In combination, with the shell of the herein described machine gun, a frame consisting of plates having ways for supporting the reciprocating spindles and plates for supporting the hammer and triggers, said frame being connected with the shell at one end by means of dowel pins that pass into sockets in a part secured to the shell, and at the opposite end by a button, a support rising from the shell holding the button reciprocating spindles supported by the ways, and hammers and triggers supported by the frame, whereby a turn of the button releases the frame allowing it with the hammers and triggers to be freely removed, substantially as specified.

No. 40,277. Cover for the Ends of Hub Bands.

(*Couvercle pour les bouts des doublures de moyeux.*)

William Chaplin, St. Catharines, Ontario, Canada, assignee of Jared Maris, Cincinnati, Ohio, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination with a hub band having an internal off-set or flange, of a cover adapted to fit over the end of said hub band, and a series of soft metal fastening devices passing through the interior flange of said cover and resting behind the internal off-set or flange of the hub band, substantially as set forth. 2nd. The combination with a hub band having an internal off-set or flange of a cover adapted to fit over the end of said hub band, and a series of soft metal pins passing through and secured to the internal flange of the cover, said pins being adapted to enter behind the off-set or flange of the hub band, substantially as set forth. 3rd. A cover for the end of a hub band, consisting of an exterior portion adapted to lie on the exterior of the hub band, a flange at the inner end of said exterior portion, an internal flange having a series of opening therein, and a flange at its inner end, and a series of fastening devices adapted to be inserted in said openings to retain the cover on the hub band, substantially as set forth. 4th. The combination with an extension flange band having an interior off-set or flange, of a cover for the end thereof, and a series of soft metal fastening devices passing through the interior flange of said cover, and resting behind the internal off-set or flange of the extension flange band, substantially as set forth. 5th. The combination with a tapering hub band, of a cover for the end thereof, and soft metal fastening devices projecting through the internal flange of the cover, and bearing against the internal tapering face of the hub band, substantially as set forth.

No. 40,278. Fire Extinguisher. (*Extincteur d'incendie.*)

George Henry Downing, New York, State of New York, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination of a container having a hollow base, a tube extending through the bottom of the container and opening into the hollow base and into the container near its top, a valved piston, a stem attached thereto, a handle removably secured to the lower end thereof, and which, when the piston is in its elevated position, is contained within the hollow base, and a cap for closing the tube and for supporting the piston stem when the handle is removed. 2nd. A nozzle or outlet having in combination a tubular portion, a cap pivotally connected thereto, a flexible disc in the cap and the said cap having an air chamber formed of the disc, and means for securing the cap in place, substantially as specified. 3rd. In a fire extinguisher, the combination, with the container of a nozzle or outlet consisting of a tubular portion, a cap pivotally connected to a downwardly outwardly extending arm on the tubular portion, the said cap having a chamber providing a space for air, a flexible disc in said cap between the air space and outlet of the tubular portion, a latch pivotally connected to the cap and lug on the tubular portion having a curved or cam edge to engage with the latch, substantially as specified.

No. 40,279. Attachment for Ranges.

(*Attache pour cuisinières.*)

John F. Myers, San Francisco, California, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination with a coal range, of a shelf removably secured thereto, provided with heat openings, and of the gas burners located thereunder, as and for the purpose set forth. 2nd. The combination with a coal range, of a supporting shelf removably secured thereto, supporting strips secured to the shelf and depending therefrom, of the cooking oven attached and supported thereby, and of gas burners for heating said oven, as and for the purpose set forth. 3rd. The combination with a coal range, of a shelf removably secured thereto, of cooking oven held thereby, and of gas burners for supplying heat thereto, as and for the purpose set forth. 4th. The combination with a range, of a removable supporting shelf secured thereto, heating oven supported by the removable shelf, broiler oven attached to the cooking oven, and of the gas burners for supplying heat thereto, as and for the purpose set forth. 5th. The combination with a coal range, of a removable supporting shelf secured thereto, supporting straps secured to the shelf and depending therefrom, cooking oven attached to and supported by said strips, broiler oven secured to the cook oven, and of gas burners suitably arranged for heating the ovens and shelf, as and for the purpose set forth.

No. 40,280. Carriage for Lathes. (*Châssis pour tour.*)

Peter G. Simpson, Bennett, Pennsylvania, U.S.A., 8th August, 1892; 6 years.

Claim.—1st. In metal working lathes, the combination of a slide rest, a tool holding disk on a horizontal shaft mounted in the tool rest, said shaft having a slight longitudinal movement in its bearings, and a longitudinal moving bushing or equivalent device acting on said shaft to draw the disk against the slide rest, substantially as and for the purpose set forth. 2nd. In metal working lathes, the combination of a slide rest having the tool holding disk mounted on a horizontal shaft therein, said shaft having a slight longitudinal movement in its bearings, and a longitudinally moving busing or equivalent device acting to draw the disk against the slide rest, substantially as and for the purpose set forth. 3rd. In metal working lathes, the combination of the slide rest E, tool holding disk F, having the shaft *f*, and carrying the washer *l*, bushing *i*, screwing within the slide rest and around the shaft *f*, and lever for turning said bushing, substantially as and for the purpose set forth. 4th. In metal working lathes, the combination of the slide rest E, having the bearing *e*, the annular recess e^3, and the enlargement *h*, and the tool holding disk

F, having the shaft *f*, provided with the annular ring or enlargment f^1, close to the disk and fitting within this recess c^{ii}, and the reduced portion f^{ii}, provided with a short thread f^2 and nut g, engaging therewith, the washer *l*, secured at the end of the said shaft, and the bushing *i*, entering within the enlargement *h* and having a longitudinal movement therein, substantially as and for the purpose set forth. 5th. In metal working lathes, the combination of the slide rest having the grooves *r*, the tool holding disk F, having recesses *p*, and the levers *s*, pivoted in said grooves *r* and entering said recesses *p* and having lugs s^1, extending inwardly into the same, substantially as and for the purpose set forth. 6th. In metal working lathes, the combination of the slide rest E, the tool holding disk F on a horizontal shaft mounted in said slide rest, the levers *s*, pivoted in the slide and engaging with the disk, and the cam plate *u*, engaging with said levers to operate the same, substantially as and for the purpose set forth. 7th. In metal working lathes, the combination of the slide rest E, tool holding disk F, having the shaft *f*, mounted in said slide rest and carrying the washer *l*, provided with a ratchet face, the bushing *i*, screwing within the slide rest, and around the shaft *f*, and the lever *k*, for turning said bushing, provided with a pawl engaging said washer, substantially as and for the purpose set forth.

No. 40,281. Printing Press. (*Presse d'imprimerie.*)

Duplex Printing Press Company, assignee of Joseph L. Cox, all of Battle Creek, Michigan, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination in a printing press of a pair of parallel opposite type beds, each arranged face uppermost, with an impression cylinder for each bed, and means, substantially as described, for reciprocating said cylinders. 2nd. The combination in a printing press of a pair of type beds, with a pair of reciprocating impression cylinders co-acting with said beds, only one of which cylinders moves between the beds, substantially as specified. 3rd. The combination of a pair of parallel opposite type beds arranged one above the other and having their type bearing surfaces facing in the same direction, the pair of revolving impression cylinders, and mechanism for simultaneously reciprocating said cylinders over the respective beds, with mechanism for feeding a continuous web of paper between the one cylinder and bed, and, after the first impression produced thereby, feeding it between the second cylinder and bed to produce a perfected sheet, substantially as specified. 4th. The combination of a type bed and ink rolls at the opposite ends thereof, with means, substantially as described, adapted to deliver ink from one roll to the other. 5th. In a printing press, the combination of the type bed, the ink distributing rolls at the opposite ends thereof, and the inking fountain for supplying ink to one of said rolls, with a reciprocating roller for transmitting ink from one of said rolls to the other, substantially as set forth. 6th. The combination of the type bed, the impression cylinder mounted in movable carriers and adapted to be reciprocated over the type bed, and the guide rollers for directing a web of paper between the impression cylinder and type bed, substantially as set forth, with movable looping rollers over which the web is looped in opposite directions before and after it passes between the impression cylinder and bed, substantially as described. 7th. The combination, with the pair of type beds arranged parallel and both facing upwardly, of a pair of reciprocating carriers moving in guides between the type beds, and impression cylinders supported by said carriers and arranged to contact respectively with the said beds when the carriers are reciprocated, substantially as set forth. 8th. The combination of the type beds, the carriers moving in guides between said beds, and impression cylinders carried thereby adapted to respectively contact with the forms on the said beds, with the paper guide rollers, whereby a web of paper can be directed between one impression cylinder and type bed, and thence between the other cylinder and bed, substantially as described. 9th. The combination in a printing press of type beds arranged one above the other, a pair of impression cylinders adapted to be respectively reciprocated over said beds, and inking devices for the forms on the beds, with guide rollers arranged to direct a web of paper between the lower bed and cylinder, and thence between the upper bed and cylinder, and mechanism whereby said web is looped before it enters between the first bed and cylinder, and again looped after it passes the second bed and cylinder, whereby the web can be fed into and delivered from the press continuously and yet have portions thereof stopped during the taking of impressions thereon, substantially as described. 10th. The combination, with a type bed, of a pair of reciprocating carriers mounted in guides on the frame, an impression cylinder journalled in said carriers, and the web guide rollers and form rollers mounted on the carriers at opposite sides of the impression cylinder, substantially as described. 11th. The combination of the type bed, the revolving impression cylinder mounted in reciprocating carriers above said bed adapted to be reciprocated thereover, and inking and paper web guide rollers at each side of the cylinder, carried by and movable with said carriers and cylinder, with stationary web guide rollers, and ink supply rolls at each end of the bed, substantially as specified. 12th. The combination of the main frame, the type bed, the carriers reciprocating above said bed, and the main shaft and pitman operating said carriers connected directly thereto and driven from said main shaft, with the impression cylinder journalled in said carriers and operating with the type on said bed, substantially as set forth. 13th. The combination of the type bed, the carriers, the crank wheels, shaft and pitmen for reciprocating said carriers and the impression cylinders journalled in and movable with said carriers, with the looping frame having looping rollers *l*, l^1, the shaft carrying cams for operating said frame and the paper guide rollers, all substantially as described. 14th. The combination of the type beds, the carriers, the pitmen and crank wheels and shaft for reciprocating the same, the impression cylinders form rollers and paper guide rollers carried by said carriers and movable therewith the paper looping frame carrying looping rollers, the shaft and cams for operating said frame and the paper web guide rollers, all substantially as set forth. 15th. In a web printing press, the combination of a stationary type bed, the impression cylinder, mechanism for reciprocating the same over the bed, and paper web feed and delivery mechanism, with a pair of connected looping devices, over one of which the web is looped between the feed mechanism and cylinder and over the other of which the web is looped between the cylinder and delivery mechanism, whereby one loop is formed simultaneously with the paying out of the other, as and for the purpose set forth. 16th. The combination of a type bed, an impression cylinder adapted to be reciprocated thereover, and mechanism, substantially as described, whereby the web is continuously fed into and from the press, with a mechanism, substantially as described, whereby the web is positively looped between the feeding devices and cylinder during the taking of an impression and positively looped between the cylinder and delivery mechanism after the impression, the looping devices being connected and synchronous in operation, so that one loop is formed while the other is being paid out during the taking of an impression, substantially as set forth. 17th. The combination of the type bed, ink supplies at each end thereof, a revoluble impression cylinder, form inking rollers at each side thereof, and mechanism, substantially as described, whereby the cylinder and form rollers are simultaneously reciprocated over the type bed, and the type inked at each movement of the cylinder, with a pair of connecting looping rollers over one of which the web is looped previous to passing under the cylinder, and over the other of which the paper web is looped after passing from the cylinder whereby the feed and delivery of web is rendered continuous and one loop formed simultaneously with the paying out of the other, substantially as set forth.

No. 40,282. Cover for Hubs. (*Couvercle de moyeu.*)

William Chaplain, St. Catharines, Ontario, Canada, assignee of Jared Maris, Cincinnati, Ohio, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination, with a point band having a shoulder or abutment formed on its inner surface near its outer end, of a dust and mud cap, having locking springs adapted to engage said shoulder or abutment, and be held in place thereby, substantially as set forth. 2nd. The combination, of a point band for vehicle hubs, and a dust and mud cap for same when the key is covered to exclude the dust and water, all substantially as set forth in these claims. 3rd. The combination, with a band and a sheet metal case, the latter forming an offset of a dust and mud cap, having locking springs adapted to engage said offset and be held in place thereby, substantially as set forth. 4th. The combination, with a band for vehicle hubs, of a dust and mud cap having yielding flange or thimble, and a spindle located within said flange or thimble for forcing the same outwardly, substantially as set forth. 5th. The combination with a band for vehicle hubs, of a dust and mud cap having a slotted thimble, and springs bearing against the faces of the sections of said slotted thimble. 6th. The combination with a band for vehicle hubs of a dust and mud cap having a slotted flange or thimble, and a spring carried by said cap, with its ends engaging the inner faces of the sections of the slotted flange or thimble, substantially as set forth.

No. 40,283. Electric Motor. (*Moteur électrique.*)

Gilbert Lafayette Parker, assignee of John Walter Grantland, both of Philadelphia, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. In electric railways, the mode of supplying electric currents to moving vehicles which consists in electrifying the exterior surface of a conductor, passing a drying or heating medium in contact with the interior surface of the conductor, and leading the current from the electrified surface of the conductor to the moving vehicle, substantially as and for the purposes set forth. 2nd. In electric railways, the mode of transmitting electric currents to moving vehicles, which consists in electrifying the exterior surface of a conductor, passing a heating medium in contact with the interior surface of the conductor, reheating said medium and leading the current from the electrified surface of the conductor to the moving vehicles, substantially as and for the purposes set forth. 3rd. In electric railways, the mode of supplying electric currents to moving vehicles, which consists in electrifying the exterior surface of a supported conductor in a slotted overhanging conduit, passing a heating medium through the conductor to dry the exterior surface thereof, and by radiation prevent deposition or collection of moisture around or about the internal surface of the overhanging portion of the conduit and leading the current from the electrified surface of the conductor to a trolley sled or brush connected with the vehicle, substantially as and for the purposes set forth. 4th. In electric railways, the mode of supplying electric currents to moving vehicles and preventing leakage in a conduit or subway which consists in maintaining a hollow conductor throughout its length in a dry state by causing a heating medium to be conducted through the same, dissipating

moisture around or about the conduit or subway and leading the current from the electrified surface of the conductor to vehicles, substantially as and for the purposes set forth. 5th. A conductor having the external surface thereof adapted to supply electricity to moving contacts, as trolleys, brushes or sleds, and having an internal bore or channel for the passage of a drying medium in contact with the interior surface of the conductor, substantially as and for the purposes set forth. 6th. A tubular conductor adapted for the passage of steam or blast of an absorbing or drying medium, and having the external walls inclined in circuit and accessible to a trolley, brush or sled, substantially as and for the purposes set forth. 7th. In an electric railway, a subway or conduit, a hollow conductor having the external wall thereof included in circuit and accessible to a trolley, brush or sled, and means for forcing a blast or streams of a drying medium through said conductor, substantially as and for the purposes set forth. 8th. In electric railways, the mode of supplying electric currents to a vehicle, which consists in electrifying the surface of a supported conductor in a slotted and overhanging conduit, introducing at certain points and conducting through the conductor a heating medium to dry the electrified surface thereof and by radiation preventing the deposition or collection of moisture around or about the overhanging portion of the conduit and leading the current from the electrified surface of the conductor to a trolley, sled or brush connected with the vehicle, substantially as and for the purposes set forth. 9th. In an electric railway, an overhanging slotted underground conduit, a vehicle provided with an arm carrying a trolley, sled or brush, a hollow electrified conductor having a stream or blast of an absorbing or drying medium conveyed through said conductor, and relay stations connected with said conductor for reheating the medium conveyed through said conductor, substantially as and for the purposes set forth. 10th. In electric railways the combination of an overhanging slotted conduit, a hollow conductor supported beneath the overhanging portion of said conduit, a heating or drying medium introduced at suitable distances apart into and conducted through said conductor, means for electrifying the exterior surface of the conductor, a vehicle provided with a depending arm having a trolley, sled or brush attached thereto and contacting with the electrified surface of said conductor, substantially as and for the purposes set forth. 11th. In electric railways, the combination of an underground slotted conduit provided with an overhanging part, a tubular hollow conductor supported beneath the overhanging portion of said conduit, means arranged at suitable distances apart for permitting of the introduction and passage of a blast or stream of an absorbing medium into and through said conductor and by radiation preventing deposition or collection of moisture around or about the conduit, a vehicle provided with a depending arm extending through the slotted portion of the conduit and carrying a trolley, sled or brush adapted to contact with the electrified surface of the conductor, substantially as and for the purposes set forth. 12th. In an electric railway, a subway or conduit, a hollow conductor, means for forcing a heating medium through said conductor and relay-heating stations connected with said conductor, substantially as and for the purposes set forth. 13th. In an electric railway, an overhanging sub-way or conduit, flues or passages in the overhanging portion thereof, a conductor located adjacent to said flues or passages and having its external walls included in circuit and accessible to a trolley, sled or brush, and means for forcing heated blasts or streams through said conductor to heat the same and produce a circulation of gaseous vapour in said flues or passages, substantially as and for the purposes set forth. 14th. In an electric railway, a hollow conductor, means for forcing a drying medium through said hollow electrified conductor, relay stations interposed in branches from said conductor for revivifying said drying medium and shunt conductors cutting out said relay stations, substantially as and for the purposes set forth. 15th. In an electric railway, an overhanging conduit or sub-way, bridge pieces ranging transversely of the space formed by the overhanging portion of the conduit or sub-way, a shield supported on said bridge pieces and forming ducts or passages, carriers depending from said bridge pieces and insulated therefrom a hollow conductor supported by said carriers and means for forcing a heating medium through said hollow conductor, substantially as and for the purposes set forth. 16th. In an electric railway, an overhanging conduit, bridge pieces ranging transversely of the space formed by the overhanging portion of the conduit or sub-way T-arms depending from said bridge pieces and insulated therefrom, a hollow conductor provided with cleats engaging the heads of said T-arms and adapted to compensate for expansion and contraction of the conduct or and means for forcing a heating medium through said conductor, substantially as and for the purposes set forth. 17th. In an electric railway, an overhanging conduit, a hollow electrified conductor located with the space formed by the overhanging portion of the conduit, a shield disposed above the conductor and provided with deep apertures at the edges thereof, means located at suitable distances apart for causing a heating and drying medium to be conveyed through said conductor and a vehicle provided with a depending curved arm carrying a trolley, sled or brush, and adapted to engage with the electrified surface of said conductor, substantially as and for the purposes set forth. 18th. In an electric railway, an overhanging and slotted conduit supporting a tubular conductor having a heating and drying medium conveyed through the same and having the exterior surface electrified, a vehicle provided with an arm consisting of a copper conductor embedded in insulating material, a two-part casing, solid bars applied to the exterior wall of said casing and a trolley, sled or brush attached to said arm and adapted to contact with the electrified surface of said conductor, substantially as and for the purposes set forth. 19th. In an electric railway, an overhanging and slotted conduit, a conductor supported beneath the overhanging portion of said conduit, having a drying medium conducted through the same, relay stations connected with said conductor at determinate points, a trolley arm provided with a flat or sheet copper conductor embedded in insulating material, a casing inclosing the copper conductor and its complemental insulating material, and bars suitably connected with said casing, substantially as and for the purposes described. 20th. An electric railway, comprising a subway or conduit, a hollow conductor suitably supported therein, means for forcing a heating medium through said conductor, relay heating stations connected with said conductor, and a vehicle provided with an arm carrying a trolley, sled or brush adapted to contact with the electrified surface of said conductor, substantially as and for the purposes described.

No. 40,284. Can. (*Boîte métallique,*)

Fairbank Canning Company, assignee of George Braid Hopper, all of Chicago, Illinois, U.S.A., 8th September, 1892; 6 years.

Claim.—A can having a raised bead with unbroken surfaces, said bead encircling the can near its top, whereby the metal of the can is weakened there, a cover attached to the top of the strip by solder, the metal between the bead and solder forming a strip of metal of a single thickness, and this strip being provided with a tongue or extension, substantially as and for the purpose described.

No. 40,285. Electric Regulator.

(*Régulateur électrique.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignee of James Finney McElroy, Albany, New York, U.S.A., 8th September, 1892; 6 years.

Claim.—1st. The combination with a dynamo electric generator and its working circuit, of a loop in said circuit, two motor magnets in normally open branches of said loop, an armature adapted to be oppositely actuated by said motor magnets and connected to the dynamo regulating devices, means operated by changes of current in the work circuit of the dynamo for closing the circuit through either of the motor magnets, a retracting mechanism for the armature of the motor magnets and a make and break mechanism in said loop actuated by said retracting mechanism, substantially as described. 2nd. In electric regulators, the combination with the working circuit of an electric generator, of two opposite motor magnets located in normally open branches of a loop in said working circuit, of a movable core or cores forming an armature adapted to be oppositely moved by said magnets, a rocking lever actuated by said armature, a contact hand adapted to be moved by said rocking lever to regulate the flow of the current through the field magnets of the dynamo, a retracting lever for said rocking lever, a make and break mechanism in the circuit of the loop actuated by the movement of said retracting lever, and means operated by changes of current in the work circuit of the dynamo for closing the circuit through either of the motor magnets, substantially as described. 3rd. In electric regulators, the combination with the working circuit of an electric generator, of two opposite motor magnets located in normally open branches of a loop in said working circuit, of a movable core or cores forming an armature adapted to be oppositely moved by closing the circuit through one or the other of said magnets, a normally open switch lever adapted to close the circuit through one or the other of said motor magnets, a controlling magnet actuating said switch lever upon changes of current in the working circuit, a rocking lever actuated by the armature of the motor magnets, a contact hand actuated by said rocking lever to regulate the magnetic intensity of the field magnets of the dynamo, a retracting lever applied to return said rocking lever and armature to its normal position, and a make and break mechanism adapted to make and break the circuit through the loop by the actuation af the retracting lever in its extreme period of movement, substantially as described. 4th. The combination with a concentrically arranged series of contact strips and a centrally pivoted contact hand of an electric regulating device, of a toothed wheel carrying such contact hand, a rocking lever carrying at one end two pawls on opposite sides of said toothed wheel, and normally out of contact with said wheel, and two motor magnets provided with movable cores engaging with the other arm of said lever to actuate said lever in opposite directions, substantially as described. 5th. The combination with concentrically arranged series of contact strips and a centrally pivoted contact hand of an electric regulating device of a toothed wheel carrying such contact hand, two solenoids placed oppositely each other and provided with hollow spools, an armature slidingly supported between said spools in axial line, therewith and provided at its opposite ends with cores extending into said spools to move said armature in opposite directions, a rocking lever engaged at one end with said armature, two pawls carried by the other end of said lever on opposite sides of the toothed wheel and normally out of engagement therewith, and a retracting lever adapted to bear against said rocking lever at points on opposite sides of its fulcrum, substantially as described. 6th. The combination, with the series of fixed contacts, and the movable contact hand of the electric regulating

devices, of a toothed wheel carrying said movable contact hand, a rocking lever carrying two pawls on opposite sides of said wheel and adapted to turn said wheel in opposite directions, respectively, by the movement of said rocking lever, two motor magnets provided with a movable core or cores engaging with said rocking lever and adapted to bear against said rocking lever at two points at opposite sides of its fulcrum respectively, substantially as described. 7th. The combination, with a concentrically arranged series of contact strips, and a centrally pivoted contact hand, of an electric regulating device, of a toothed wheel carrying said contact hand, two opposite motor magnets having a sliding armature adapted to be oppositely actuated by the same, and a rocking lever carrying at one end two pawls on opposite sides of the toothed wheel normally out of contact with said wheel, and adapted to actuate the same in opposite direction, and having its other end engaging loosely into an enlarged slot in said aperture, substantially as described. 8th. The combination, with the controlling magnets having a movable core, of the switch F balanced upon its fulcrum, substantially as described. 9th. The combination, with the motor magnets having hollow spools, of the movable armature having cores formed at its opposite ends projecting into the spools and adapted to move such armature in opposite directions, the guide bars projecting through the spools and slidingly supporting the armature, and the adjusting nuts upon such guide bars, substantially as described. 10th. The combination, with the motor magnets, having a sliding armature oppositely actuated by said magnets, of a rocking lever engaging with one end into said armature and provided at the other lever with means for actuating the dynamo regulating devices, said end being arranged to balance with the armature, substantially as described. 11th. The combination, with the motor magnets, having a movable armature, of the rocking lever oppositely actuated by the same, and provided with the lateral offsets R, R^1, the retracting lever P provided with the projections Q, Q^1 adapted to bear against said offsets, and the spring S, substantially as described. 12th. The combination, with the motor magnets, having a movable armature, of the rocking lever oppositely actuated by the same and connected to the dynamo regulating device, the retracting lever P, the spring S, and the make and break mechanism consisting of the make and break lever T, the stationary contact U, the trip lever V, and the spring W, substantially as described.

No. 40,286. Riveting Machine. (*Machine à river.*)

Judson Lavator Thomson, assignee of Jacob John Unbehand, both of Syracuse, New York, U.S.A., 8th September, 1892 ; 6 years.

Claim.—1st. In a riveting machine, the combination of a rivet receiver frame *t*, a rivet guide way t^3, slots t^5 and yielding rivet supporting shoulders T^4, substantially as and for the purpose set forth. 2nd. In a riveting machine, the combination of a rivet receiver frame *t* having separable sections t^1 t^1, a rivet guide way t^3, shoulders t^6 t^6 and yielding rivet supporting shoulders T^4 T^4, substantially as and for the purpose specified. 3rd. In a riveting machine, the combination of the reciprocating rivet receiver frame *t*, a guide T^2 a rivet guide way t^3, slots t^5 and yielding rivet supporting holders T^4, substantially as and for the purpose described. 4th. In a riveting machine, the combination of a reciprocating rivet receiver frame *t* having separable sections t^1 t^1, a guide T^2, shoulders t^6 t^6, slots t^5 t^5 and yielding rivet supporting holders T^4 T^4, substantially as and for the purpose set forth. 5th. In a riveting machine, the combination of oppositely arranged rivet supporting holders T^4 T^4, tensioning springs T^5 T^5 oppositely arranged jaws t^6 t^6 beneath the holders T^4 T^4, the springs t^1 t^1 and the arm t^2, substantially as and for the purpose specified. 6th. In a riveting machine, the combination of an angularly disposed hopper frame J^1, a rotating sleeve M, rivet receiving cut outs *m* m^1, and a discharge opening J^2, substantially as and for the purpose described. 7th. In a riveting machine, the combination of the hopper frame J^1 having an angularly disposed bearing for the feeding rivets, a rotating feeder M, rivet receiving cut outs *m* m^1, a discharge opening J^2, and a cut out L^1, substantially as and for the purpose set forth. 8th. In a riveting machine, the combination of the hopper frame J^1, the discharge J^2, a feeder M, rivet receiving cut outs *m* m^1, the arc L, cut outs L^1 and stop L^3, substantially as and for the purpose specified. 9th. In a riveting machine, the combination of a hopper frame J^1 the discharge J^2 a rotating feeder, cut outs *m* m^1, cut outs L^1, a cut out L^2 and a stop L^3, substantially as described. 10th. In a riveting machine, the combination of the the hopper J, a discharge J^2, a movable feeder M, and a friction clutch *g*, substantially as and for the purpose set forth. 11th. In a riveting machine, the combination with the hopper frame J^1, a discharge J^2, a rotating feeder M, a shaft or rod *h*, a collar g^4, and a ratchet ring *g*, substantially as and for the purpose specified. 12th. In a riveting machine, the combination of a hopper J a conveyor N having a slot *n* a cut off R, and a second slot *n* out of alignement with the former slot, substantially as and for the purpose described. 13th. In a riveting machine, the combination of a hopper J, a conveyor N having upper slot *n* and lower slot *n* out of alignement with upper slot, a cut off R having projections R^1, and a stop R^4, substantially as and for the purpose set forth. 14th. In a riveting machine, the combination of a rivet receiver T, a conveyor N, a cut off R, and a spring connection e^1, substantially as and for the purpose specified.

No. 40,287. Rivet Slotting Machine. (*Machine à rivet.*)

Judson Lavator Thomson, assignee of Jacob John Unbehend, both of Syracuse, New York, U.S.A., 8th September, 1892 ; 6 years.

Claim.—1st. In a rivet slotting machine, the combination, of a rivet holder L, a cutter U, having the cutting extremities of its teeth projecting one beyond the other, whereby the slot is gradually deepened, substantially as and for the purpose specified. 2nd. In a rivet slotting machine, the combination, of a holder or die L, and a cutter U, having inclining cutting teeth, substantially as and for the purpose set forth. 3rd. In a rivet slotting machine, the combination, of a holder L, a rivet feeder, and a cutter U, substantially as and for the purpose specified. 4th. In a rivet slotting machine, the combination, of a holder L, a rivet feeder, a rivet bifurcating cutter U, and a discharge N^1, substantially as and for the purpose set forth. 5th. In a rivet slotting machine, the combination, of a holder L, a plunger P^1, a cutter U, and a rivet discharge N^1, substantially as and for the purpose specified. 6th. In a rivet slotting machine, the combination, of a rivet receiver K, a conveyor G, a cut-off G^1, a die L, and a cutter U, substantially as and for the purpose set forth. 7th. In a rivet slotting machine, the combination, of a conveyor G, a receiver K, a cut-off G^1, a reciprocating plunger P^1, a cutter U, having the extremities of its cutting teeth projecting one beyond the other, substantially as and for the purpose specified. 8th. In a rivet slotting machine, the combination, of a receiver K, a conveyor G, a plunger P^1, a holder L, and a cutter U, substantially as and for the purpose set forth. 9th. In a rivet slotting machine, the combination, of a reciprocating plunger P^1, a reciprocating receiver K, a holder L, and a broach U, substantially as and for the purpose specified. 10th. In a rivet slotting machine, the combination, of a die L, a reciprocating receiver K, a rivet discharge, and a cutter U, substantially as and for the purpose set forth. 11th. The combination, with a rivet feed, a holder L, and a pivoted cutter U, having a series of cutting teeth arranged with their extremities projecting one beyond the other, substantially as and for the purpose specified. 12th. In a rivet slotting machine, the combination, of a cutter U, a holder L, a rivet feed, a fork, and a discharge finger N^1, substantially as and for the purpose set forth. 13th. In a rivet slotting machine, the combination, of a holder L, a rivet feeder, a cutter U, and cutters V^1, substantially as and for the purpose specified. 14th. In a rivet slotting machine, the combination, of a holder, a cutter U, an adjustable plunger rod P^1, and a rivet discharge, substantially as and for the purpose set forth. 15th. In a rivet slotting machine, the combination, of a die L, having a rib l^2, a fork J, a cutter U, and a discharge finger N^1, substantially as and for the purpose specified. 16th. In a rivet slotting machine, the combination, of a die, a cut-out L, a fork J, a recess l^1, in the lower face of the die, and a cutter U, having teeth movable in said recess, substantially as and for the purpose set forth.

No. 40,288. Apparatus for Dispensing Liquids.

(*Appareil pour la distribution des liquides.*)

William Miles Fowler, New York, State of New York, U.S.A., 8th September, 1892 ; 6 years.

Claim.—1st. The combination with a measuring receptacle, means for varying its capacity and means for controlling the admission of liquid to the receptacle and its discharge therefrom, of a recording mechanism under the control of the means for varying the capacity of the receptacle, to set it under the control of the means for admitting and discharging the liquid to make the record, substantially as set forth. 2nd. The combination with a measuring receptacle, means for varying its capacity and a recording mechanism under the control of the capacity varying mechanism to set it, of a valve for admitting liquid to the receptacle, a valve for discharging the liquid from the receptacle, an operating lever in connection with the two valves to operate them simultaneously, impression mechanism under the control of the lever to make the record, and mechanism for feeding the material to receive the record, said feeding mechanism being also under the control of the operating lever, substantially as set forth. 3rd. The combination with the measuring receptacle, inlet and outlet devices for the admission of liquid to the receptacle and its discharge therefrom, an operating lever for controlling the inlet and outlet devices, recording mechanism and feed mechanism, the said recording and feed mechanisms being under the control of said operating lever, substantially as set forth. 4th. The combination with the measuring receptacle and means for regulating the entrance of liquid into its discharge therefrom, of means for varying the capacity of the said receptacle, a type roller provided with different sets of type, a connection between the type roller and the means for varying the capacity of the receptacle whereby the type roller is moved with relation to the different capacities and means for receiving an impression from the type, substantially as set forth. 5th. The combination with the measuring receptacle, means for controlling the entrance of liquid to and its discharge from the receptacle and a piston adapted to slide within the receptacle to vary its capacity, of a type carrier provided with different sets of type, a connection between the type carrier and the sliding piston, means for sliding the piston and thereby adjusting the type carrier and means for receiving the impression from the type upon the type carrier, substantially as set forth. 6th. The combination with the measuring receptacle, means for controlling the admission of liquid to and its discharge therefrom and a piston adapted to slide within

the receptacle to vary its capacity, of a rotary type carrier, a sliding plate having a cam engaged with the roller, a connection between the sliding plate and the piston, means for operating the piston and hence the rotary type carrier, and means for receiving an impression from the type upon the type carrier, substantially as set forth. 7th. The combination, with the measuring receptacle, an inclosing case surrounding the receptacle, means for regulating the inlet of liquid into and its discharge from the receptacle, means for varying the capacity of the receptacle, an indicator connected with said means for varying the capacity and projecting without the casing, an index upon the outer side of the casing to indicate the value of predetermined amounts of liquid within the receptacle and a recording mechanism under the control of the means for varying the capacity to form a record corresponding to the value indicated upon the index, substantially as set forth. 8th. The combination, with the measuring receptacle, means for controlling the entrance of liquid into and its discharge therefrom, and mechanism for varying the capacity of the receptacle, of an indicating mechanism operated by said capacity varying mechanism, a type carrier provided with different sets of type and controlled by said capacity varying mechanism, and means for receiving the impression from the type upon the carrier, substantially as set forth. 9th. The combination, with the measuring receptacle, devices for regulating the entrance of liquid into the receptacle and its discharge therefrom, and an operating lever for controlling the said inlet and discharge devices, of mechanism for varying the capacity of the receptacle, and a locking mechanism under the control of the operating lever to lock the capacity varying mechanism in its adjustment, substantially as set forth. 10th. The combination, with the measuring receptacle, devices for regulating the inlet of liquid into and its discharge from the receptacle, and an operating lever for controlling the said inlet and outlet devices, of mechanism for varying the capacity of the receptacle, a sliding bar in connection with said capacity varying mechanism and provided with stops corresponding to the predetermined capacities, and a locking device under the control of the operating lever and adapted to engage the stops upon the sliding bar and thereby lock the capacity varying mechanism during the operation of the operating lever, substantially as set forth. 11th. The combination, with the measuring receptacle, an operating lever and means for controlling the admission of liquid into and its discharge from the receptacle under the control of said operating lever, of a piston adapted to slide within the reseptacle to vary its capacity, a rack in connection with the piston rod, a pinion adapted to engage the rack, and a rotary shaft independent of said operating lever for operating the pinion, substantially as set forth. 12th. The combination, with the measuring receptacle, the sliding piston and its rod, of the type carrier, the sliding bar for operating the type carrier, a link connection between the sliding bar and the piston rod for reducing the throw of the operating bar, and means for operating the piston, substantially as set forth. 13th. The combination, with the operating lever provided with a lateral projection at its end and a type carrier, of a vibrating arm carrying an impression pad at one end and at its opposite end provided with a swinging dog extending into the path of the projection on the lever and free to swing in one direction to allow the lever to pass but having an engagement with the arm when the lever is swung in the opposite direction, thereby causing the arm to swing with the lever, and means for feeding the material to receive the impression between the pad and the type carrier. substantially as set forth. 14th. The combination, with the operating lever and the vibrating arm adapted to be rocked by the lever, of a cutter blade and impression pad secured to the vibrating lever, a stationary blade, a type carrier and means for feeding the material to be impressed between the said stationary and movable blades, and between the pad and type carrier, substantially as set forth. 15th. The combination, with the operating lever and the printing mechanism, of a feed roller for advancing the material to receive the impression, said feed roller being provided with an annular series of ratchet teeth, and a pawl carried by the operating lever and adapted to engage the ratchet teeth and thereby advance the roller as the lever is operated, substantially as set forth. 16th. The combination, with the measuring receptacle, its inlet and discharge valves, their operating cranks and the bar connecting their cranks, of an operating lever having a loose connection with said connecting bar, a feed roller operated by said lever during its stroke in one direction, an impression device operated by said lever during its stroke in the opposite direction, a type carrier and means for receiving the impression, substantially as set forth.

No. 40,289. Electric Arc Lamp.

(*Lampe électrique à arc.*)

William Darius Graves and Frank J. Stafford, both of Cleveland, Ohio, U.S.A., 9th September, 1892; 6 years.

Claim.—1st. The combination, with solenoids, carbons and carbon holders, of levers actuated by the solenoids and provided with switch arms suitably connected in the electric circuit of an arc lamp by which the consuming of the first set of carbons or their disconnection causes the switching in of a succeeding set of carbons, snbstantially as and for the purpose specified. 2nd. In a duplex or multiplex arc lamp, the combination, with double sets of solenoids, one solenoid in each set being of low resistance, carbon holders and carbons connected in series with said low resistance, a lever, as C, a suitable feed mechanism and a switch arm attached to said lever, arranged within the electric circuit, constructed to operate substantially as and for the purpose specified. 3rd. In a multiplex arc lamp, the combination, of double sets of solenoids, one solenoid in each set being of low resistance, and one set being of high resistance, carbon holders and carbons connected in the series with said low resistance, and levers, as C, a switch arm, as K, mounted on said lever, a suitable feed mechanism supported by said lever, all constructed to operate, substantially as and for the purpose specified.

No. 40,290. Railway Construction Machine.

(*Machine pour la construction des chemins de fer.*)

John Whitney Close and John C. Graves, both of Buffalo, New York, U.S.A., 9th September, 1892; 6 years.

Claim.—1st. The combination, in a spike driving machine, of a stationary piston, secured to a stationary hollow piston-rod a, with its steam or atmospheric cylinder B and spike catching cylinder B^1 travelling thereon and guided thereby, having the devices for feeding the spikes to the rails, belt tightener rods a^3, a^3, lifter hook rods C, C, and the brake rods T^1, T^1, all connected to and operated in conjunction with steam cylinder B, substantially as and for the purpose specified and shown. 2nd. The combination of the slotted spike catching cylinder B^1 with the spike receptacle B^2, and the conveyers E, E, E, attached thereto and provided with spike detaching springs A, A, with the spike holders E^1, E^1, all adapted to operate substantially as and for the purpose described. 3rd. In a machine for driving spikes, the driver n, n, provided with regulators or stops a^2, a^2, and the additional stops a^5, a^5, substantially as shown for the purpose specified. 4th. The combination and arrangement, with the spike drivers n, n, of the cushioned stops a^2, a^2, and a^5, a^5, substantially as described. 5th. The lifter hooks C, C, in combination with the railway tie and rail and means to drive the spike, substantially as shown for the purpose specified. 6th. In a railway spiking machine, the combination, with the catching cylinder or ring and conveyers and hammers, of means for advancing the apparatus and stopping the same the required and uniform distance, as and for the purpose set forth. 7th. In a railway spiking machine, the combination of the truck provided with the gaging wheels, of the lighters and mechanism to advance the machine the required and uniform distance, substantially as set forth. 8th. In a spiking machine, the combination, with the catching cylinder or ring, the conveyers, and the hammers, of the double flanged wheels K, K, adapted to gage the track as the machine advances, substantially as and for the purpose set forth. 9th. In a railway spiking machine, the combination of a hopper, a spike catching cylinder, slotted as described, spike conveyers, and suitable drivers, as set forth. 10th. The combination of the steam cylinder, the brakes, and the described connections thereof with said cylinders, for the purposes set forth. 11th. The combination of the steam cylinder, the brakes, the belt tightner, and their described connections to the cylinders, as set forth. 12th. In a track spiking machine, the combination, with the driving hammer or hammers n, of the lifters for the lifting and holding the tie to place, together with the operating and supporting parts, substantially as set forth. 13th. In a railway construction machine the combination of the tie and the rail with means to drive the spikes, substantially as set forth. 14th. In a railway construction machine a tie distributing wheel provided with means for changing its course to the right or left, and a semi-circle bracket for holding the tie to its place upon the revolving wheel, all substantially as set forth. 15th. In a railway construction machine the bridge or girder framing an incline plane shoot provided with inside and outside rollers wherewith the rails and ties are automatically conveyed to their respective positions for laying and spiking, all substantially as set forth. 16th. In a railway construction machine the combination with an incline plane shoot the portable steam cranes with means for handling the ties and rails with the forward lower end of the shoot supported upon a wheel or wheels and the rear end resting upon the car or cars of the construction train, substantially as set forth. 17th. In a railway construction machine a transverse incline plane frame wherewith the rails are transversely slid or conveyed to and upon gaging rollers which place the rails upon the ties at the proper distance or gage for spiking, substantially as set forth. 18th. In a railway construction machine, the track gages Q^5, Q^5, provided with rollers, substantially as set forth. 19th. In a railway construction machine the combination with the shoot the leaves O^3, O^3, with the chain O^4, O^4, the wheel O^5, substantially as set forth.

No. 40,291. Chain Stitches for Uniting Parts of Boots and Shoes or Other Articles.

(*Point de chainette pour assembler des parties de chaussures, ou autres articles.*)

Andrew Appler, Boston, Massachusetts, U. S. A., 9th September, 1892; 6 years.

Claim.—1st. A chain stitch, the enchained or interlocked loops of which are twisted, as set forth. 2nd. The combination with two or more pieces of material, of a chain stitch uniting said pieces, said chain having twisted loops, as set forth.

No. 40,292. Machines for Sewing Welts to Boots and Shoes. (*Machine pour coudre les trépointes aux chaussures.*)

Andrew Appler, Boston, Massachusetts, U.S.A.; 9th September, 1892; 6 years.

Claim.—1st. The combination of a fixed channel guide, a curved oscillating needle located, when retracted, at one side of the channel guide, and a needle guard co-operating with said needle, a welt guide, a reciprocating curved awl, a looper, and an adjustable rest, all located at the opposite side of the channel guide from the needle, as set forth. 2nd. The combination of a fixed support or channel guide and a curved reciprocating awl having a lateral work feeding movement, said awl being arranged opposite the channel guide or support when making its work feeding movement, as set forth. 3rd. The combination of a fixed channel guide, and a curved oscillating needle movable in a path extending across one side of the channel guide, as set forth. 4th. The combination with a curved oscillating needle, of a needle guard, and means for positively oscillating said needle guard, as set forth. 5th. The combination of a fixed channel guide, a welt guide, a curved reciprocating awl, and a looper, all located at one side of the channel guide, two oscillating levers supporting said awl and welt guide and mounted to oscillate on a centre common to both whereby the awl and welt guide are enabled to move in the same are, a curved oscillating needle arranged, when retracted, at the opposite side of said channel guide, and a guard co-operating with said needle, as set forth. 6th. The combination with the fixed channel guide, the looper, the oscillating needle and the needle guard relatively arranged as described, of a welt guide, a curved reciprocating awl and a looper, all located at one side of the channel guide, two oscillating levers supporting said awl and welt guide and mounted on a centre common to both, and means for laterally reciprocating said levers to give the awl its feeding and its return or back feed movements, as set forth. 7th. The combination, with the curved oscillating needle, a needle guard, a welt guide and a looper, relatively arranged as described, of the fixed channel guide, and the oscillating and laterally reciprocating awl, the latter being arranged at a point opposite the channel guide when making its penetrating movement, as set forth. 8th. The combination of the fixed channel guide, the awl, the welt guide, the levers p^1, f^1, respectively supporting the awl and welt guide, a fixed centre or stud on which said levers are mounted to oscillate and move laterally, independent means for oscillating said levers, and the lever u, cam w and spring z^1, whereby said levers are reciprocated laterally, as set forth. 9th. The combination, with the fixed channel guide, of the welt guide, the oscillatory lever f^1 supporting the same, the spring supported slide k having an incline j adapted to normally support said lever and thereby hold the welt guide against the work, a cam u, whereby said slide is depressed to release the lever f^1, and a spring i, whereby said lever is held against tht incline, as set forth. 10th. The combination, with the fixed channel guide and the stitch forming mechanism, of the movable rest V, the toothed shank supporting said rest, the shaft having a pinon engaging the teeth of said shank, a ratchet on said shaft, a dog arranged to normally engage said ratchet and lock the rest, and means, substantially as described, for displacing said dog to release the rest, as set forth. 11th. The method, hereinbefore described, of twisting the interlocked loops of chain stitches, the same consisting in twisting the thread about a barbed needle, as described, and then forming the stitches in the usual way, as set forth. 12th. The combination of a curved needle having a hook or barb, a looper adapted to revolve about the needle when the latter is projected, means for revolving the looper about the needle and thereby winding the thread thereon, means for oscillating or reciprocating the needle, and a needle guard to disengage the loop from the needle, as set forth. 13th. The combination, with the needle, of the looper having a thread guiding eye, the lever O supporting said looper, the cam U adapted to oscillate said lever, the lever Q^1 having an arm to which the lever O is pivoted, and means for oscillating the lever Q^1, whereby a revolving motion about the needle is given to the looper, as set forth. 14th. The combination, with the fixed channel guide, the work feeding awl and the stitch forming mechanism, of the welt guide, movable with the awl, and means for pressing the same yieldingly against the upper during the insertion and withdrawl of the needle and the feeding of the work, and a relatively weaker spring which acts on the welt guide during the backward or return movement of the awl and welt guide to relieve the said pressure without straining the seam, as set forth.

No. 40,293. Pipe Coupler. (*Joint de tuyau.*)

Edward F. Roberts, Columbus, Ohio, U.S.A., 9th September, 1892; 6 years.

Claim.—1st. A flexible pipe coupling which consists of two universal joints, two pipe elbows, each of which is supported at its upper end in one of the universal joints, together with a swivel joint which connects the lower ends of said pipe elbows together, the axis of said swivel joint, and the axis of the adjacent sections of pipe elbows, substantially coinciding with each other, substantially as described. 2nd. A universal joint coupling for pipes which consists of the following parts in combination, the ball, the cylindrical socket with exterior notches, the two part packing for the socket, and the screw cap for the socket, together with the spring pawl which is attached to the cap and engages with the notches on the socket, substantially as described. 3rd. In a swivel joint for pipe couplings, the two pipe ends provided with bevelled faces, the two packing rings having plane faces on their outer sides but bevelled to fit the pipe end on the inner sides, a thimble which fits over each pipe and its packing ring, and a two part muff coupling which holds the ends of the pipes together, substantially as described. 4th. In a swivel joint for pipe couplings, the two pipe ends each provided with bevelled faces, the two packing plane faces on their outer sides but bevelled to fit the pipe ends on the inner sides, a spring thimble which fits over each pipe end and its packing ring with a yielding pressure, and which has an inwardly projecting circular lip which holds the packing ring, and a two part muff coupling which holds the ends of the pipe together and compresses the packing rings upon the same, substantially as described. 5th. A flexible pipe coupling which consists of two ball and socket joints, two pipe elbows each of which is supported at its upper end in one of the ball and socket joints, together with a swivel joint which connects the lower ends of said pipe elbows together, said ball and socket joints being so arranged that their axes are normally perpendicular, or nearly perpendicular to the plane of motion of the swivel joint, substantially as described.

No. 40,294. Mechanical Stoker for Steam Boilers and other Furnaces. (*Chauffeur mécanique pour chaudières à vapeur et autres.*)

James Proctor, Burnley, England, 9th September, 1892; 6 years.

Claim.—1st. In combination, with the open mouth of a fuel hopper, an arched or stepped carrier or fire clay slab moving to and fro beneath the said mouth, and carrying the fuel forwards into the furnace, and depositing the same upon the moving fire bars, substantially as hereinbefore described, and illustrated by the drawing annexed. 2nd. A fixed fire clay slab, arched or raised to allow of hand firing, and placed beneath the open mouth of a hopper and extending into the furnace, in combination, with a reciprocating pusher or pushers for moving the coal forward and depositing it upon the moving fire bars, substantially as hereinbefore described, and illustrated by the drawing annexed. 3rd. In a furnace, with moving fire bars, the combination of a removable arched doorway of fire brick supported upon the front ends of the fire bars which are raised and carried forward above the dead plate, so that the said doorway is caused to move to and fro with the moving fire bars, substantially as hereinbefore described, and illustrated by the drawing annexed. 4th. The combination, with rocking levers for giving motion to the fuel carriers or pushers, of discs or face plates provided with projections acting on the levers, the said discs or face plates being made to slide on feathers or keys, so that either of them can be moved into or out of gear with the levers so as to work either or both of them. 5th. The combination, with rocking levers for giving motion to the fuel carriers or pushers of mechanism, substantially as hereinbefore described, and illustrated by the drawing annexed, for imparting an intermittent alternate motion to the said rocking levers for the purpose of reducing to a minimum the time during which the said carriers or pushers are exposed to the heat of the furnace.

No. 40,295. Support for Bicycles.

(*Support pour bicycles.*)

James William Snyder, Contersport, Pennsylvania, U. S. A., 9th September, 1892; 6 years.

Claim.—1st. A bicycle, having a supporting device movably affixed to the vehicle, and provided with means for suspending the support when not in use, as and for the purpose set forth. 2nd. A bicycle, having a supporting device suspended from the forward axle, and provided with means for suspending the support when not in use, as set forth. 3rd. A bicycle, having a supporting device pivoted to its axle, and provided with a locking device to lock the base of said supporting device to said wheel, as stated. 4th. In a bicycle, the combination, with the forward axle, of sockets fitting the nuts of said axle, rods pivoted to said sockets and provided with pistons and caps on the end of said cylinders, cylinders affixed to a base plate, and spiral springs interposed between said caps and the pistons, as and for the object stated. 5th. In a supporting device for bicycles, the sockets for the forward axle consisting of a shell having a rubber lining, and a pivot projecting from the said shell, as and for the object stated. 6th. In a supporting device for bicycles, the locking device for the wheel consisting in combination, with the base plate, of the hasp pivoted to said base plate and arranged to straddle the rim of the wheel, the staple and the lock, as and for the object set forth.

No. 40,296. Lawn Mower. (*Tondeuse pour pelouses.*)

Alanson Harris, Brantford, Ontario, Canada, assignee of John G. Patterson, Detroit, Michigan, U.S.A., assignee of Simon Peter Graham, of Detroit aforesaid, 9th September, 1892; 6 years.

Claim.—1st. In a lawn mower, a rotary cutter composed of a shaft and of two cutter heads centrally separated and a drive connection applied between the heads, substantially as described. 2nd. In a lawn mower, a rotary cutter composed of a shaft and of two cutters heads centrally separated, a drive connection applied between the heads, a stationary knife and a divider or guide between the

heads, substantially as and for the purpose described. 3rd. In a lawn mower a rotary cutter composed of a shaft, and two cutter heads centrally separated, a drive connection applied between the heads, a stationary knife, a divider secured to said knife between the heads and inclined guides at the sides, substantially as and for the purpose described. 4th. In a lawn mower, a rotary cutter and two cutter heads centrally separated and of blades on said cutter head spirally arranged from the centre towards the edges, and a drive connection applied between the heads, substantially as and for the purpose described. 5th. In a lawn mower, the combination of the frame, the outer shaft journalled therein, the cutter heads secured to said shaft and separated centrally, of a sprocket pinion on said shaft between the heads, a main shaft, a ground wheel on said shaft, a sprocket wheel on the ground wheel, and a sprocket chain for communicating motion from the ground wheel to the cutter, substantially as described. 6th. In a lawn mower, the combination with the frame, the cutter shaft journalled therein having cutter heads centrally separated, of a sprocket pinion on said shaft between the heads, a main shaft secured in sliding bearings in the frame, of set screws for adjusting said shaft to and from the cutter shaft, a ground wheel on the main shaft, a sprocket wheel on said ground wheel, and a sprocket chain for communicating motion from the ground wheel to the cutter shaft, substantially as described. 7th. In a lawn mower, the combination of the frame composed of side bars and connecting bars, of vertical guides formed in the side bars, of a cutter shaft, of bearings for said cutter shaft slidingly secured in said guides, and set screws above and below said bearings to adjust the same, substantially as described. 8th. In a lawn mower, the combination of the side bars and connecting bars forming the frame, of vertical guides formed in the side bars, of a cutter shaft, of bearings for said cutter shaft slidingly secured in said guides, of the set screws *a* below said bearing, the cap above said bearings and the set screws *b* in said cap, substantially as described. 9th. In a lawn mower, the combination with the side bars of the frame and the cutter shaft, of vertical guides in said side bearings, of bearings for the cutter shaft slidingly secured in said bearings, means for adjusting said bearing vertically, the cap M pivoted upon the rivet M^1 and a clamping bolt N engaging in the slot O, substantially as described. 10th. In a lawn mower, the combination with the frame, ground wheel and cutter, of the arms Q pivoted near the rear of the machine, the rollers P journaled between the forward end of said arms, and the set screw R for vertically adjusting said arms, substantially as described. 11th. In a lawn mower, the combination of the stationary knife and the rotary cutter head, with means for rotating the same, of a cutting blade arranged in a plane parallel with the line of its movements, substantially as described. 12th. In a lawn mower, the combination with a stationary knife and a rotary cutter head, and means for rotating the same, of a cutter head having the securing portion *d* and the blade extending at an angle thereto in a plane parallel with the line of its movements, substantially as described.

No. 40,297. Furnace for Steam Boilers.

(*Foyer de chaudière à vapeur.*)

Hawley Furnace Company, Chicago, Illinois, assignee of Melville Cox Hawley, St. Louis, Missouri, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. In a combined downward and upward draft furnace, the combination of the lower upward burning grate, an upward downward burning grate, an intermediate combustion chamber, and an escape flue leading from said combustion chamber, the bars in said upper grate being spaced widely apart as described, and at each end thereof connecting with a water chamber in turn connected with the boiler, and the bars in said lower grate being spaced closer together than are the bars of said upper grate, substantially as described. 2nd. In a combined downward and upward draft furnace, the combination of the lower upward burning grate, an upper downward burning grate, an intermediate combustion chamber, and an escape flue leading from said combustion chamber, the bars in said upper grate being spaced widly apart and forming a series of zigzag spaces, as described, and at each end thereof connecting with a water chamber in turn connected with the boiler, and the bars in said lower grate being spaced closer together than are the bars in said upper grate, substantially as described. 3rd. In a combined downward and upward draft furnace, the combination of the lower upward burning grate, an upper downward burning grate, an intermediate combustion chamber, and escape flue leading from said combustion chamber, the bars in said upper grate being spaced widely apart and forming a series of zigzag spaces, as described, and at each end thereof, connecting with a water chamber in turn connected with the boiler, and the bars in said lower grate being spaced closer together than are the bars of said upper grate, and the ash pit extending below the floor of the boiler room and beyond the furnace front, substantially as described. 4th. In a combined downward and upward draft furnace, the combination of the lower upward burning grate, an intermediate combustion chamber, and an ash pit extending below the floor of the boiler room and beyond the furnace front, substantially as described.

No. 40,298. Method and Means for Bending Electrotype Plates. (*Méthode et moyen de plier les plaques galvaniques.*)

The Curved Electrotype Plate Company, Albany, assignee of Patrick Moses Furlong, New York, all in the State of New York, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. The method of bending an electrotype plate consisting in subjecting its back to the pressure of a continuous curved surface, and at the same time bending against its face a strong flat resilient plate. 2nd. The method of bending an electrotype plate consisting in supporting the same at the back by a rigid curved surface and at the same time bending against its face with a progressive action a strongly resisting longitudinally strained resilient plate. 3rd. In a machine for bending electrotype plates, the combination of a normally flat resilient plate adapted to strongly resist a bending action, means for applying a bending pressure to the back of the electrotype, and means for bending the plate against the face of the electrotype. 4th. The combination, substantially as shown, of the bed or table, the roll or cylinder movable thereover, and the intermediate resilient plate attached at one end to the bed and at the other to the roll. 5th. The combination, substantially as shown, of the bed or table having teeth, the roll movable thereover, and provided with corresponding teeth, the intermediate flexible plate attached at its ends to the roll and the table, respectively. 6th. In a machine for bending electrotype plates, the combination of a roll or pressure device having a cylindrical surface to act on the back of the electrotype, a flexible plate, and means for winding the same upon the roll, and intermediate bearers maintaining suitable separation of the roll and plate.

No. 40,299. Fertilizer Distributor.

(*Distributeur d'engrais.*)

The American Harrow Company, Detroit, Michigan, U.S.A., assignee of John Fraser, Renton, Ontario, Canada, 10th September, 1892; 6 years.

Claim.—1st. The combination with a suitable frame, and a hopper mounted thereon in which the fertilizer is placed, of one or more movable bottom pieces in said hopper, and mechanism for giving the said bottom piece or pieces a reciprocating motion, substantially as described. 2nd. The combination with a suitable frame, and a hopper located thereon, of two or more movable bottom pieces in said hopper, and means for giving said bottom pieces an alternating reciprocating motion, substantially as described. 3rd. In a fertilizer distributor, the combination with a suitable frame work, and a hopper mounted thereon, of the movable bottom pieces G, G^1, each having one edge pivoted adjacent to the side of the hopper, and means for giving said bottom pieces G, G^1, an alternating reciprocating motion, substantially as described. 4th. In a fertilizer distributor, the combination with a suitable frame work and a hopper mounted thereron, said hopper provided with the bottom pieces G, G^1, each having one edge pivoted adjacent to the side of the hopper, of means for giving said bottom pieces an alternating reciprocating motion, consisting of the lever K, having its ends connected with the bottom pieces by the pitmen *g*, g^1, and a crank shaft for giving said lever a rocking motion, substantially as described. 5th. In a fertilizer distributor, the combination with a wheel supported frame and hopper mounted thereon, said hopper provided with bottom pieces G, G^1, of the lever K connected with the bottom pieces by the pitmen *g*, g^1, the crank shaft J, and pitman j^1, sprocket wheels E, J^1, and sprocket chain J^2, all arranged substantially as described. 6th. In a fertilizer distributor, the combination with a hopper, provided with the bottom pieces G, G^1, of the pintles H for pivoting the bottom to the hopper, said pintles resting in slots F, and connected to the coil spring F^1, and the set screws *h*, for varying the distance between the pintles, and consequently between the adjoining edges of the bottom pieces, substantially as described. 7th. In a fertilizer distributor, the combination with a hopper, of one or more movable bottom pieces having their edges serrated, substantially as described. 8th. In a fertilizer distributor, the combination with a hopper, of one or more pivoted bottom pieces having their edges diagonally serrated, substantially as described.

No. 40,300. File for Bills and Letters. (*Serre-papier.*)

William Otterbein Gottwalls and Hugh Allan, both of Ottawa, Ontario, Canada, 10th September, 1892; 6 years.

Claim.—1st. In a letter and bill file, the combination of a backing A, sub-base B^1 permanently secured to it, and provided with slide edges b^1, base B removably held by said sub-base and holding upright wires, an arch wire C secured to said base, and having springs c^1, shank c^{11}, with a pointed end 2, and an arched shank c^{111}, provided with a grooved point 3, to receive the point 2, and the guide wire D secured to said base transversely to the arch C, and midway between its two upright shanks, substantially as set forth. 2nd. In a letter and bill file, the combination of a backing A, base B secured to said backing, arch C secured to said base, and guide D secured transversely between the upright shanks of said arch, substantially as set forth. 3rd. In an arch for a letter and bill file, the combination of a base shank *c* securable to a support, a spring c^1 at the end of said base shank, an upright shank c^{11} continuous with said base shank having a point 2, an upright shank c^{111} con-

tinuous with said base shank, bent into an arch and having a grooved end 3, adapted to receive and hold the point 2, substantially as set forth. 4th. In a device for a letter and bill file, the combination of a base plate B, the arch wire C secured to said base by a base shank c, and having an upright shank c^{11} flexibly connected to said base by a spring c^{1}, and an upright shank c^{111} connected to said base and bent to form an arch, the ends 2 and 3 of said shanks being respectively pointed and grooved to interlock, and a guide wire D, having a base shank d secured to said base plate transversely to said arch, substantially as set forth. 5th. In a base for a letter and bill file, the stamped plate B having grooves in the bottom surface for the reception of wires, which form ridges b at the upper surface, substantially as set forth.

No. 40,301. Mechanical Motor. (*Moteur mécanique.*)

George Cochins, Houston, Texas, U. S. A., 10th Septembet, 1892; 6 years.

Claim.—The combination of a horizontal rock shaft extending lengthwise of the machine, a horizontal connecting piece running diagonally of and rigidly secured to said shaft, a seat for the operator, a pedal rigidly secured to said rock shaft, said pedal serving as a single or double pedal and so arranged that the operator shall face the device to be operated, ubstantially as shown and described.

No. 40,302. Pea Sheller. (*Egrenoir à pois.*)

Edward C. Moulton, San Francisco, California, U. S. A., 10th September, 1892; 6 years.

Claim.—1st. A pea sheller, consisting of an exterior rotary perforated drum having a smooth interior surface, a cylinder extending concentrically through said drum, so that the latter turns loosely upon the shaft of the cylinder, pins projecting radially from the cylinder within the drum and in alternate lines from end to end, a frame upon which the shaft is journalled, and gear wheels whereby the drum is turned in one direction and the cylinder in the opposite direction and at an increased speed, substantially as herein described. 2nd. A pea sheller, consisting of the rotatable perforated drum, a cylinder concentric therewith, having pins projecting radially and alternately in rows within the drum, a journalled shaft turning in boxes upon a stationary frame, said shaft passing through the ends of the drum which is supported and turns upon the shaft, a crank shaft and gears, whereby the drum is turned in one direction, other gears deriving motion from the same shaft, whereby the interior cylinder is turned in the opposite direction from the drum and at an increased speed, a chute inclosing the lower part of the drum to receive the peas which discharge from the openings therein, and a cap or cover inclosing the upper part of the drum to prevent their escape in that direction, substantially as herein described. 3rd. In a pea sheller, a shaft journalled upon a stationary frame and carrying a cylinder having pins projecting radially in lines from end to end, said lines of pins alternating with each other, a perforated cylindrical drum having a smooth interior, said drum turning loosely upon the projecting journals of the cylinder shaft, a crank shaft and gears Q and R, by which the drum is rotated in one direction, other gears connecting the crank shaft with the cylinder shaft, whereby the latter is turned in the opposite direction from the drum, said gears being so proportioned that the interior cylinder is rotated at a greater speed than that of the drum, substantially as herein-described. 4th. In a pea shelling machine, the interior cylinder having pins projecting radially from it in lines extending from end to end and alternating with each other, an exterior drum perforated for the escape of the peas supported upon the journals of the hub shaft, a gear mechanism whereby the drum and hub shaft are turned in opposite directions and at different rates of speed, a segment of the perforated drum having metallic straps fixed upon each end and projecting as shown, slots made in the straps at one end, and screws fixed in corresponding positions upon the drum to receive the slots and hold the straps by means of the screw heads, eyes fixed upon the opposite side of the opening in the drum, and slots made in the corresponding ends of the straps upon the movable section to fit over said eyes with hooks, whereby they are locked in position when the movable section is in place, substantially as herein described.

No. 40,303. Air Brake. (*Frein atmosphérique.*)

William Edward Maher, Johnson City, Tennessee, U.S.A., 10th September, 1892; 6 years.

Claim.—In combination with the brake and signal pipes of a brake system, a valve for controlling pressure in both pipes, and an operating connection from said valve to the truck, whereby the valve will be operated when the truck is displaced, the brake applied and the signal given.

No. 40,304. Railway Track. (*Voie de chemin de fer.*)

Plimmon Henry Dudley, New York, State of New York, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. In a railway track, a series of rail sections having heads of different dimensions in cross section and arranged with relation to the level, gradient and curved sections of the road, substantially as set forth. 2nd. A railway track in which the rails constituting curved portions of the track have the bearing faces of their heads wider than the bearing faces of the heads of those rails which constitute the tangent portions of the track, substantially as set forth. 3rd. A railway track in which the rails constituting the curved portions of the track have their heads deeper than the heads of those rails which constitute the tangent portions of the track, substantially as set forth. 4th. A railway track in which the rails constituting the curved portions of the track have their heads both wider and deeper than the heads of those rails which constitute the tangent portions of the track, substantially as set forth. 5th. A railway track in which the rails constituting the gradients have their heads wider than the heads of those rails which constitute the level portions of the track, substantially as set forth. 6th. A railway track in which the rails constitutmg the gradients have their heads deeper than the heads of those rails which constitute the level portions of the track, substantially as set forth. 7th. A railway track in which the rails constituting the gradients have their heads wider and deeper than the heads of those rails which constitute the level portions of the track, substantially as set forth. 8th. A railway track in which the rails constituting the curved portions are deeper than those rails which constitute the tangent portions of the track, substantially as set forth. 9th. A railway track in which the rails constituting the gradients are deeper than the rails which constitute the level portions of the track, substantially as set forth.

No. 40,305. Protective Covering for Electric Cables.

(*Enveloppe protectrice pour cables électriques.*)

John Haven Cheever, New York, State of New York, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. As a covering for electric conductors or cables, the within described compound of rubber, plumbago, asbestus and sulphur, in substantially the proportions set forth. 2nd. An electric cable having a continuous seamless covering composed of rubber, plumbago, asbestus and sulphur, substantially as described.

No. 40,306. Magneto Electric Machine for Use in Blasting Operations. (*Machine magnéto-électrique pour tirer les coups de mine.*)

Arden Seymour Fitch, New York, State of New York, U.S.A., 10th September, 1892; 6 years.

Claim. 1st. In a magneto electric machine having two separate circuits, one including the rotary armature, magnet coils and connections inside the machine, and the other comprising the working circuit outside the machine, the combination with the armature operating device, of a circuit controller common to both said circuits, and having motion concurrently with said armature operating device, and fixed contacts connected with said circuits, and in electrical relation to said circuit controller to maintain the inside circuit closed, and the outside open or broken during the movement of said operating device in the direction to rotate the armature, and to establish electrical connection between said inside and outside circuits at the conclusion of said movement of said operating device, substantially as and for the purposes set forth. 2nd. In a magnet electric machine having two separate circuits, one including the rotary armature, magnet coils and connections inside the machine, and the other comprising the working circuit outside the machine, the combination with the rotary armature operating device adapted to rotate said armature by a single movement in one direction, of a circuit controller, common to both said circuits, and carried by said armature operating device, and having movement therewith, and comprising fixed contacts connected with said circuits, and in electrical relation to said circuit controller to maintain the inside circuit closed and the outside circuit open or broken during said movement of said operating device, and to establish electrical connection between said circuits at the conclusion of said movement, substantially as and for the purpose set forth. 3rd. In a magneto electro machine having two separate circuits, one including the rotary armature, magnet coils and connections inside the machine, and the other comprising the working circuit outside the machine, the combination with the rotary armature, and pinion fixed on the arbor thereof, of a gear engaging said pinion, a clutch pinion on the shaft of said gear, and adapted to rotate said gear in one direction only, and a toothed segment engaging said clutch pinion and adapted to rotate it through a single revolution, together with a circuit controller common to both said circuits, and carried by said segment, and adapted in its movement therewith in the direction to rotate said armature, to maintain said inside circuit closed and said outside circuit open, and to establish electrical connection between said circuits at the conclusion of said movement, substantially as and for the purpose set forth. 4th. In a magneto-electric machine having two separate circuits, one including the rotary armature, magnet coils and connections and spring terminals for said coils carried by an insulating support, and the other comprising the main or working circuit having spring terminals carried by said insulating support, the combination with the operating device adapted to rotate the armature by a single movement in one direction only, of a circuit controller consisting of a metal block carried by and moving with said operating device, and provided with bearing faces for the terminals of the magnet circuit, and with a channel in its face for the traverse of the terminals of the working circuit during its movement with said operating device in the direction to rotate the armature, and with insulated switch plates adapted to engage the terminals of similar polarity of both said circuits at the conclusion of its said movement, substantially as

and for the purpose set forth. 5th. In a magneto-electric machine having the separate magnet circuit and working circuit, as described, the combination with the rotary armature operating device adapted to rotate said armature by a single movement in one direction, of a circuit controller C carried by and moving with said armature operating device, and consisting of a metal block having bearing faces for the spring terminals d, d^1, of said magnet circuit, and a channel c in its face for the traverse of spring terminals c, c^1, of the working circuit during its movement with the said operating device in the direction to rotate the armature, and the switch plates c^1, c^2, provided with the extensions c^3, c^4, adapted to enable said terminals of the magnet circuit to establish connection with said plates before leaving said bearing faces of the controller, and thereafter to establish connection between the terminals of similar polarity of both circuits, substantially as and for the purpose set forth. 6th. In a megneto-electric machine of the class described, having an inclosing case, the combination with the segment A adapted to actuate the gearing by a single movement in one direction to rotate the armature and provided with the extension arm a^5, of a lever b^1, fulcrumed on the exterior of the inclosing case, and a rod b, pivotally connecting said arm and lever through an opening in the case wall, substantially as and for the purpose set forth. 7th. In a magneto-electric machine, the combination, with the armature operating device, adapted to swing or rotate in its movement to operate the armature for the generation of an electric current, of a bar seated in or upon said armature operating device and adapted to slide or move longitudinally therein and transversely thereof, substantially as and for the purpose set forth. 8th. In a magneto-electric machine, the combination, with a journalled toothed segment for operating the rotary armature to generate an electric current, of a bar seated in or upon said segment and adapted to slide or move longitudinally therein and transversely thereof, substantially as and for the purpose set forth. 9th. In a magneto-electric machine, the combination, with a journalled toothed segment for operating the rotary armature to generate an electric current, and provided with a lateral extension or hub in which is a transverse slot, of a bar seated in and adapted to play longitudinally in said slot in said hub, substantially as and for the purpose set forth. 10th. In a magneto-electric machine, the combination, with a journalled toothed segment for operating the rotary armature to generate an electric current, and provided with a laterally extended hub having a transverse slot, of an inclosing case having therein an apertured partition through which said hub extends and in which it has bearing, together with a bar seated and having play longitudinally in said slotted hub outside said partition, and a lid or wall on said case provided with a slotted aperture to permit the bar to project exteriorally of the inclosing case, substantially as and for the purpose set forth.

No. 40,307. Feed Water Heater.

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

Charles Jacobs, Hyde Park, Massachusetts, U. S. A., 10th September, 1892; 6 years.

Claim.—In a feed water heater as above described, the combination, with the shell A, provided with the base B, having a partition C, forming two sediment chambers E, E^1, provided with inlet and outlet pipes, and each having a blow off pipe, tube plates D and G, provided with a series of fed water tubes F and tube cap H, an exhaust steam inlet pipe I, and exhaust steam outlet pipe I^1, of a deflector plate J between the said exhaust steam inlet and outlet, and an exterior series of live steam pipes connecting with each of the said sediment chambers and provided with valves, whereby live steam may be admitted to pass into and through each of said chambers, so as to form a double blow off, substantially as described, as and for the purposes set forth.

No. 40,308. Tool for Masons' Use. (*Outil de maçon.*)

James Gilmour Faulds, Glasgow, Scotland, 10th September, 1892; 6 years.

Claim.—1st. In masons' tools, a tool shaft or handle broadened at its lower end and made with a cut out part for the reception of a removable bit or cutter, substantially as hereinbefore set forth. 2nd. In masons' tools, the combination, with a tool shaft or handle of a bit, capable of being fitted thereto, substantially as hereinbefore set forth. 3rd. In masons' tools, the combination, with a tool shaft or handle of a bit, consisting of a metal body tapered on one side, said tapered side serving as the cutting edge, substantially as hereinbefore set forth. 4th. In masons' tools, the combination, with a tool shaft or handle of a reversible bit, consisting of a metal body tapered on both sides, the lower side having a number of cutting teeth, and the upper side a single cutting edge, substantially as hereinbefore set forth. 5th. In masons' tools, the combination, with a tool shaft or handle, of a bit consisting of a metal body tapered on both sides, the lower and also the upper side having a number of cutting teeth, substantially as hereinbefore set forth. 6th. In mason's tools, the combination, with a tool shaft or handle, having a groove or recess cut out of its lower end, of a bit or cutter and of a pin for securing said bit or cutter in place, substantially as hereinbefore set forth. 7th. In masons' tools, the combination, with a tool, shaft or handle, having a groove or recess at its lower end, of a bit or cutter and of a pinching screw for retaining said bit or cutter in place, substantially as set forth. 8th. The combination of a handle cut out at its lower end, of a bit or cutter secured therein and of a packing of soft metal inserted in said cut out part, substantially as and for the purpose set forth.

No. 40,309. Typewriter. (*Clavigraphe.*)

George Washington Newton Yost, New York, State of New York, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a ring or plate for shifting the free ends of said connecting rods, a series of key levers, and a series of lifting levers arranged between the key levers and the connecting rods, substantially as set forth. 2nd. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a ring or plate for shifting the free ends of said connecting rods, a series of key levers each provided at its rear end with a stem or lifter, and a series of lifting levers, substantially as set forth. 3rd. In a type writing machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a ring or plate for shifting the free ends of said connecting rods, means, substantially as described, for moving said ring or plate and with it the free ends of said connecting rods, a series of lifting levers, and a series of key levers, substantially as described. 4th. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a ring or plate for shifting the free ends of said connecting rods, a shift key, a key lever, a stem, a bell crank, and a pitman, substantially as described. 5th. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a ring or plate for shifting the free ends of said connecting rods, and a spring actuated lever for holding the ring or plate in its normal position pivoted independently of the ring or plate and pressing toward the axis of rotation thereof, substantially as described. 6th. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, a shift ring or plate having a notch or recess, and a spring actuated lever for returning said ring or plate to its normal position pivoted independently of the ring or plate and pressing toward the axis of rotation thereof, substantially as described. 7th. In a typewriting machine, the combination, with a series of type carriers, of a series of pendant connecting rods, the same in number as the type carriers, a shift ring or plate, a series of lifting levers less in number than the connecting rods and type carriers, and a series of key levers, the same in number as the lifting levers, substantially as described. 8th. In a typewriting machine, the combination, with a series of type carriers and a series of pendant connecting rods, alike in number, of a shift ring or plate, a series of lifting levers arranged so that each one controls three connecting rods and type carriers, and means, substantially as described, for actuating said lifting levers, substantially as set forth. 9th. In a typewriting machine, the combination, with a series of type carriers and a series of pendant connecting rods arranged in groups of three, a shift ring or plate, a series of lifting levers arranged to normally operate the middle connecting rod of each group, and means, substantially as described, for moving the shift ring or plate to bring either the first or the last connecting rod of each group to a position to be operated upon by said lifting levers, substantially as described. 10th. In a typewriting machine, with a series of type carriers, and a series of pendant connecting rods, of a shift ring or plate, a series of radiating lifting levers adapted to control two or more of said connecting rods and type carriers, and a series of key levers adapted to actuate said lifting levers, substantially as set forth. 11th. In a typewriting machine, the combination, with a series of type carriers and a series of pendant connecting rods, of a shift ring or plate, a series of radiating lifting levers, a guide ring or plate for said lifting levers, and a series of key levers, substantially as set forth. 12th. In a typewriting machine, the combination, of a series of type carriers arranged in a circle, a series of vertical connecting rods arranged in a circle, a shift ring within the circle formed by the connecting rods and connected to the free ends of said rods, a series of radiating lifting levers beneath the free ends of said connecting rods, and a series of key levers extending to said lifting levers and adapted to elevate the same, substantially as set forth.

No. 40,310. Package Making and Filling Machine.

(*Machine pour fabriquer et emplir les paquets.*)

Henry Eyster Smyser, Philadelphia, Pennsylvania, U.S.A., 10th September, 1892; 6 years.

Claim.—1st. The combination, with a rotatable and vertically movable shaft carrying pasters and carriers, as E, of mechanism for giving said carriers an intermittent rotary and vertical motion as described, an intermittently rotating paste table C, a blank table 11, a table 12 arranged opposite the paste table, and a depositing platform, as matrix E^x, all substantially as and for the purpose specified. 2nd. The combination, with rotatable and vertically movable shaft carrying pasters and carriers, as E, of mechanism for giving said carriers an intermittent rotary and vertical motion as described, an intermittent rotating paste table C, a blank table 11, a table 12 arranged opposite the paste table, a matrix E^x having wings 14 arranged to receive a blank from the carrier, a paper holder,

as H, adapted to hold the blank on the matrix as the carrier arises therefrom, and mechanism arranged as described to turn the matrix down and move it forward to deliver its blank to the former. 3rd. In combination with a rotatable and longitudinally movable shaft having pasters and carriers attached thereto, mechanism for intermittently rising and lowering said shaft, a reciprocating pin, as 45, arranged to engage the shaft, as by slotted plate 43, as it rises and to rotate through a determined arc, and one or more locking pins, arranged as specified, to hold the shaft against rotation when it is disengaged from the reciprocating pin, all substantially as and for the purpose specified. 4th. In a machine for forming bags, the combination with rotating mechanism, substantially as described, for applying paste to and transporting sheets of paper, of a mould F, a movable matrix adapted to move from a substantially horizontal to a vertical position and to move to and from the mould, as described, and so that the said matrix will receive a sheet of paper in its horizontal position and then turn up and move toward the mould to fold the sheet about the same, and folders, as G, G, reciprocating on the back of the mould and acting to fold the ends of the blank over the same to form a tube. 5th. In a machine substantially as specified, the combination of a mould or former F formed of relatively adjustably sections, so as to adapt it for tubes of varying size, a matrix E^x and reciprocating folders G arranged and adapted, as described, to fold a blank around the former. 6th. In a machine, substantially as specified, the combination of a mould or former F formed of relatively adjustable sections, so as to adapt it for tubes of varying size, a matrix E^x having an adjustable back plate 24^{xx}, and folders G arranged and adapted, as described, to fold a blank around the former. 7th. In a machine for forming bags, the combination, with a mould or former F, of a folder blade adapted to move under the front end of the mould and fold in the paper overlapping the same, a pair of reciprocating and rotatable angular blades 72 adapted to engage the overlapping side edges of the tubes and fold them out and in as described, a folder 85 adapted to fold in the back overlapping edge of the blank, and mechanism for operating said folders as described, and so that the back folder 85 operates after the outward and before the inward movement of the angular side folds. 8th. In a machine for forming bags, the combination with a mould or former F, and mechanism substantially as specified for folding and pasting a bag around the same, of a plunger 90 having an actuating rod extending through the former and adapted to move to and from the bottom of said former as described, and a plunger or presser plate 96 adapted to clamp the folded bottom of the bag against plate 90, and to move with said plate as the bag is thereby removed from the former. 9th. In a machine for forming and filling bags, the combination with a mould or former F, and mechanism substantially as specified for folding and pasting a bag around the same, of a plunger 90 having an actuating rod extending through the former and adapted to move to and from the bottom of said former as described, a plunger or presser plate 96 adapted to clamp the folder bottom of the bag against plate 90, and to move down with said plate as the bag is thereby removed from the former, and a series of rotating pockets as 95, through which the plunger move and which carry off the bags as described from between said plungers. 10th. In a machine for filling bags, the combination with a bag former or mould F, having a plunger at its bottom adapted to move from and to the same, of a table J, a plunger situated beneath the former F, adapted to co-act with the former plunger as described, and to remain normally flush or nearly so with table J, a series of intermittently rotating pockets moving over the face of the table and through which the plungers move to place a bag in each pocket. 11th. In a machine for filling bags substantially as described, the intermittently rotating series of pockets in combination with a table J, over which said pockets move, an opening *j* formed in the table in the path of the pockets, the bridge 154 crossing said opening, and a filling chute as J^2, situated over or in advance of the opening, all substantially as and for the purpose specified. 12th. In an automatic weighing machine, the combination with a scale pan or pans of a measure adapted to receive a measured and uniform bulk of material, and positively actuated mechanism acting to fill said measure and dump the same at intervals into the pan or pans, substantially as and for the purpose specified. 13th. In an automatic weighing machine, the combination with a scale pan or pans of a measure adapted to receive a quantity of the material to be weighed and dump it into the pan or pans, and an independently supported chute or chutes leading into the pan or pans, and the delivery of which is controlled by the position of the scale, all substantially as and for the purpose specified. 14th. In an automatic weighing machine, a measure adapted to alternately receive and deliver measured quantities of the material to be weighed, a hopper arranged to receive the contents of the measure and having two or more delivery chutes, a deflector arranged in the hopper and adapted to open each delivery chute in turn, and a series of scales situated beneath the delivery chutes so as to receive material therefrom, substantially as and for the purpose specified. 15th. In an automatic weighing machine, a measure adapted to alternately receive and deliver measured quantities of the material to be weighed, a hopper arranged to receive the contents of the measure and having two or more delivery chutes, a deflector arranged in the hopper and adapted to open each delivery chute in turn, a series of scales situated beneath the delivery chutes so as to receive material therefrom, and independent chutes leading to each scale from a supply hopper, the delivery of which is regulated by the position of the scale beam. 16th. In an automatic weighing machine, the combination, with a platform 117, having an opening 118, of a reciprocating measure 113, means for filling said measure, and a scale or scales situated beneath the opening 118, and means for directing the contents of the measure into said pan or pans, all substantially as and for the purpose specified. 17th. In an automatic weighing machine, a hopper box as 131, having one or more perforations in its bottom, in combination, with a revolving false bottom having a series of disconnected perforations arranged to register with the hole or holes in the true bottom, a a chute or chutes arranged to receive the material fed through the hopper bottom, and a scale or scales arranged at the delivery end of said chutes. 18th. In an automatic weighing machine, a hopper box as 131, having two or more perforations through its bottom at varying distances from its centre, in combination, with a revolving false bottom, having two or more series of perforations adapted to register with the holes in the hopper bottom, a series of receiving chutes, and a series of scales of scales adapted to receive the contents of said chutes, and adapted as specified to cut off the delivery of the movement of the scale beams. 19th. In a machine for filling bags, a series of intermittently rotating pockets each adapted to contain a bag, a table as J, over which said pockets move and upon which the bags rest, a spout as J^2, situated in the path of the pockets and adapted to fill the bags, a shaking device as pin or pins 155 situated in the table J, at a point in advance of spout J^2, and over which the pockets rest in their intermittent rotation, and mechanism for intermittently actuating said shaker, as described, and so that it will remain out of action except when a pocket comes to rest over it. 20th. In a machine for packing bags, the device for closing the end flaps thereof consisting of tucker blades as 185 and 193 adapted to act in opposite sides thereof, reciprocating and reciprocally rotating angular blades as 184, adapted to operate as described, to fold the side flaps of the bag end, a reciprocating paste table moving in and out over the end of the bag, and pasters 176 situated at the sides of the bag, and over the folders 184 when they are turned outwardly, and mechanism for actuating said plates, folders and paste table, substantially as described, and so that the pasters will alternately take up paste and deposit it upon the outwardly turned side flaps of the bag. 21st. In a device for closing the end of a filled bag, the combination with mechanism for folding down the end of the bag substantially as described, of a pocket as 95, adapted to hold the bag in place, a reciprocating plate or platform as 198 for supporting the bag, and mechanism for actuating said plate as described and so that the bag is gradually raised as the folding mechanism acts upon the upper end thereof. 22nd. In a device for closing the end of a filled bag, the combination with the folding plate or tucker 185 and the reciprocating and reciprocally rotating folders 184 of the folder plate 192 secured to a reciprocating spring arm 194^x and the plunger 180 arranged as described to press said folder plate down against the top of the bag after it has partly folded the front flap down thereon. 23rd. In a machine for packing bags, the combination with a series of intermittently moving pockets, a table as J over which said pockets move, mechanism for closing the top of the bag substantially as described comprising a tucker blade 85 and reciprocating and reciprocally rotating side folders 184, an opening in table J situated beneath the said mechanism, a vertically movable plate or plunger 198 situated in line with said opening and movable to and below the same, and mechanism for actuating said plate as described, and so as to lower the bag below table J as it comes upon said table and then raise it again as the said folding blade operate upon its upper end. 24th. In a device for closing the end of filled paper bags, the combination with a pocket as 95, for folding the bag in place, a vertically reciprocating plate or plunger 198 upon which the bag rests, folder 185, the side folders 185 operating as described during the upward movement of plate 198, the folder 192 held on reciprocating spring arm 194^x and the plunger 180 arranged as described to press plate 192 down on the top of the bag, all substantially as and for the purpose specified. 25th. In a device for closing the end of filled paper bags, the combination with a pocket, as 95, for holding the bag in place, having a movable section, a vertically reciprocating plate or plunger 198 upon which the bag rests, folder 185, the side folders 185 operating as described during the upward movement of plate 198, mechanism arranged to press in the movable section of the pocket as the plunger raises the bag to its highest position and thus compresses the package, the folder 192 held on reciprocating spring arm 194^x, and the plunger 180 arranged as described to press plate 192 down on the top of the bag, all substantially as and for the purpose specified. 26th. In a machine for packing bags, the combination of a series of intermittently moving pockets having a movable side, the table J over which said pockets move, mechanism for delivering bags into the pockets and for filling said bags, folding mechanism for closing the tops of the filled bags, a device for moving in the movable side of the pocket and compressing the package arranged to operate prior to the closure of the top thereof, and mechanism arranged to draw out the movable side of the pocket prior to its reception of another bag, all substantially as and for the purpose specified. 27th. In a machine for packing bags, the combination of the intermittently rotating series of pockets, the table J and a dryer as 203 arranged above the path of the pockets and between which and table J the bags are carried. 28th. In a machine for packing bags the combination of the intermittently rotating series of pockets, the table J, the plunger 206 arranged as described to force a package from each

pocket, the bolt 215, the finger 222 and the slide 216 having a simultaneously reciprocating movement longitudinally and laterally, all substantially as described and for the purpose specified.

No. 40,311. Generator for Steam.

(*Générateur de vapeur.*)

Francis Ellery Fitch, Elmira, assignee of Emmet Horton, Dundee, both of New York, U.S.A., 10th September, 1892; 6 years.

Claim. 1st. The improved steam generator herein described, in which is combined a boiler having the water leg C forming a water chamber at the sides of the fire box, heating pipes connecting one or more of the arch bar tubes and boiler and arranged within the said fire box, a sediment separator in connection with the mud drum arranged at the side of said boiler, and a pipe connecting the separator and water leg with the arch bar tube, and a pipe connecting said separator with the forward of the boiler, substantially as shown and described. 2nd. The improved steam generator, combining therein a boiler having a water leg, a centripetal separator and drum, arranged at the side of said boiler, and heating pipes connecting the boiler within the fire chamber, and a pipe connecting one or more of said heating pipes to the water grate, and pipes connecting said separator and water leg with the water grate and forward part of the boiler, substantially as shown and described. 3rd. In combination with the boiler having a water leg, a centripetal separator and drum, heating pipes disposed within the fire chamber and connected to the boiler within said chamber, and by a pipe through the water bars to said separator, and a pipe connecting said separator and boiler, substantially as shown and described. 4th. In a steam generator for locomotive boilers, the combined feed and discharge pipes adapted to support generating tubes below the crown of the fire box, and provide connecting pipes for the circulation to and from the boiler and generating tubes, substantially as shown and described. 5th. In a steam generator for locomotive boilers having a water leg, the combination with the boiler of one or more generating arch bar pipes, secondary generating pipe connecting said arch bar pipe and the boiler, and a pipe or pipes connecting the under part of the boiler with the generating arch bar pipes, substantially as shown and described. 6th. In a steam generator for locomotive boilers having a water leg, the combination with one or more generating arch tubes connected to the water leg of the boiler, of the one or more generating tubes arranged angularly thereto and above them, both generating pipes in a series of one or more being disposed one above the other within the fire box, and circulating feed and discharge pipes connecting the generating pipes and boiler, and disposed to give current circulation longitudinally within the boiler, substantially as described. 7th. In a steam generator for locomotive boilers, the combination, of a feed pipe connected to the under part of the boiler, a separator connected to said feed pipe, and a drum connected below the separator, substantially as described. 8th. In steam generating appliances, a centripetal sediment precipitator, having peripheral increasing spiral inwalls to allow centrifugal current expansion within its chamber, substantially as described. 9th. In generating appliances to steam boilers, a centripetal sediment separator having increased circular inwalls rising from a central opening downward through its bottom, with inlet and outlet pipes disposed to discharge tangentially at its inner periphery in line of spiral or horizontal circulation instituted thereby, substantially as described. 10th. In combination, with the centripetal separator, having peripheral inwalls of the increasing spiral form rising from a central opening downward through its bottom, of the inlet and outlet peripheral discharging pipes disposed to tangentially discharge into and form the spiral ways in the wall of the separator, substantially as set forth. 11th. In generating appliances, the combination, substantially as herein set forth, of a centripetal sediment separator having inner increasing spiral configuration, and pipes disposed to tangentially discharge into and withdraw from the ways of the inwall of the separator, and from a central opening downward through its bottom, a still water receptacle beneath the separator with like opening upward, wherein vertical action in precipitation of sediment from the separator is accelerated by cohesion of still and circulating water through the opening, substantially as described. 12th. In a steam generating appliance for boilers, the combination, of a centripetal sediment separator, a pipe leading from the under forward pipe of the boiler to said separator, and connected to said separator to tangentially discharge therein, and a pipe or pipes leading from the separator to the generating pipes and connected to said separator to tangentially withdraw therefrom, substantially as set forth. 13th. In a steam generator for boilers, the combination for a centripetal separator, having inner peripheral ways of increasing spiral configuration, and a pipe or pipes leading from the under forward part of the boiler to the separator, and from the separator to the generating tube, and connected to said separator to tangentially discharge into and withdraw from in the peripheral ways of the inwall of the separator, substantially as set forth. 14th. In steam boilers and generating appliances thereto, the combination of the generating head arranged and connecting the side walls of the boiler, and a supply pipe leading from said head through the flue sheet to the front of the boiler, and one or more generating pipes leading from said head to the crown sheet of the fire chamber, substantially as described. 15th. The improved steam generator herein described, in which are combined a boiler having a water leg, a transverse generating head arranged within the fire chamber, and connecting the side walls thereof one or more generating pipes connecting said head and crown sheet, one or more supply pipes leading to said head, and a separator connected to said supply pipe or pipes, substantially as described. 16th. A sediment separator, in combination, with steam generating appliances provided for upward reciprocating water currents, and a supply pipe extending from the sediment separator within the boiler to the generating head and to which the water currents lead, substantially as described. 17th. In generating appliances for steam boilers, a supply pipe located within the barrel of the boiler and parallel therewith, the rear end of said pipe passing through the flue sheet and connecting the water chamber with the chamber of the generating head, substantially as described. 18th. In generating appliances for steam boilers, the combination, with the boiler having an opening through the barrel sheet thereof to the water chamber, of the supply pipe within the barrels of the mud receiver, attached to the boiler over said opening, said supply pipe having an opening opposite said barrel opening, substantially as described. 19th. In steam generating appliances and boilers, the combination of the supply pipe P^2, and a separator located within the chamber of the boiler, and connected to said pipe, and a mud receiver connected to the chamber of the boiler, substantially as described. 20th. The combination, with the supply pipe having the mouth K, of the separator connected thereon, and the concave disc connected therein within the boiler chamber, substantially as described. 21st. A sediment separator, provided with a deflecting disc, a supply pipe connecting the separator with a generating head, said disc causing upward reciprocating water currents which lead to the supply pipe, substantially as described. 22nd. The combination, in generating appliances for steam boilers, of a supply pipe located within the boiler, said pipe connecting the water chamber, the boiler and the generating head, substantially as specified. 23rd. The combination, with the supply pipe having the opening K, of the separator covering said opening, the concave disc below said opening to the supply pipe, and the opening of the separator covered by said disc and opening into the mud receiver, substantially as described

No. 40,312. Meat Cutter. (*Machine à hacher la viande.*)

Amos Shepard, Plantsville, Connecticut, assignee of The Peck, Stowe and Wilcox Company, Southington, Connecticut, U.S.A., 10th September, 1892; 6 years.

Claim. 1st. The combination of the standard having a clamp 12 formed thereon, the segmental case fitted for reception in said clamp and a clamping device for binding the parts of said case within said standard, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of a case having substantially a cylindrical portion, a standard having formed thereon a clamp for embracing the cylindrical portion of said case when it is slipped endwise therein, and a clamping device for binding said cylindrical portion within said clamp, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the clamp having the notches or recesses, the clamping device, and the case having the ledges fitted to said recesses, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the segmental case, a screw fitted thereto, and clamping devices for holding said case and screw together, substantially as and for the purpose set forth. 5th. The combination of a screw having cutting elevations with circumferential grooves or spaces between, a segmental case having cutting elevations and spaces fitted in bearing contact with said cutting elevations and grooves on said screw, and clamping devices, substantially as and for the purpose hereinbefore set forth. 6th. The combination of a screw having the short cylindrical portion 21, web 22, and cutting elevations with circumferential grooves between, a segmental case having the plain band 19, feeding ribs, cutting elevations, and spaces, all fitted to said screw, and clamping devices, substantially as and for the purpose hereinbefore set forth. 7th. The combination of clamping devices, a segmental case having cutting elevations with spaces between, and a screw having cutting elevations and circumferential spaces fitted in bearing contact with said elevations and spaces of said case, with one circumferential space and groove on said case and screw at the delivery end, having its bottom extending continuously around the same, substantially as and for the purpose hereinbefore set forth.

No. 40,313. Gang Saw Mill.

(*Scierie verticale alternative.*)

Theodore S. Wilkin, Milwaukee, Wisconsin, U.S.A., 12th September, 1892; 6 years.

Claim. 1st. In a gang saw mill, the combination, with a frame work, of a reciprocating saw sash, a cranked shaft below but connected with the sash, a cylinder below the shaft, a piston working in the cylinder, and a connection between the piston and cranked shaft. 2nd. In a gang mill, the combination, with a frame work, of a shaft provided with two sets of cranks diametrically opposite each other, a saw sash connected with one set of cranks, a cylinder, and a piston working in said cylinder and connected with the other set of cranks. 3rd. In a gang saw mill, the combination, with a main frame, of a saw frame, a cranked shaft, a cylinder provided with a piston, a pitman or pitmen connecting the saw frame with the cranked shaft, and a pitman or pitmen connecting the cranked

shaft with the piston rod. 4th. In a gang saw mill, the combination, with the main frame, of saw frames, a cranked shaft journalled in the main frame, a cylinder mounted directly beneath the shaft, a piston working within said cylinder, a cross head secured to the piston rod, and a pitman or pitmen connecting the cranked shaft with the cross head, and an independent pitman connecting the saw frame with the cranked shaft. 5th. In a gang saw mill, the combination, with the main frame, of a saw frame, a cranked shaft journalled in the main frame and connected with the saw frame by means of a pitman, a cylinder located upon the main frame beneath the shaft, a single piston working within said cylinder, and having its rod extending from the lower end of said cylinder, a cross head secured to the said piston rod, and pitmen connecting the cross head with the crank shaft. 6th. In a gang saw mill, the combination, with a main frame, of a reciprocating saw gate or frame, a cranked shaft journalled in the main frame, a pitman connecting the saw gate with the cranked shaft, a cross bar c extending across the main frame near its lower end, a cylinder mounted upon said cross bar between the uprights A, A, of the main frame, a single piston working within said cylinder and having its rod extending from the lower end thereof, a cross head secured to said piston rod, and pitmen connecting the cranked shaft with the cross head, all substantially as shown. 7th. In a reciprocating gang saw mill, the combination, with the main frame, of a shaft provided with four cranks K, K^{1}, K^{11}, K^{111}, a reciprocating saw frame, pitman Q, Q, connecting the cranks K^{1}, K^{11}, with the saw frame, a cylinder, a piston working within said cylinder, and pitman R, R, connecting said rod of said piston with the cranks K^{1}, K^{11}.

No. 40,314. Coin Operated Automaton.

(Automate actionné par une pièce de monnaie.)

Arthur Munroe Pierce, Brooklyn, New York, U.S.A., 12th September, 1892; 6 years.

Claim.—1st. In a coin operated automaton, the figures of two cocks in a fighting attitude, a common motor adapted to actuate the necks and legs of both of said cocks, and an independent motor for each of said cocks, one of said motors being arbitrarily controlled by the weight of a coin and adapted to move the respective cock to which it is connected. 2nd. In a coin operated automaton, two figures having their movable parts connected to a common motor, and their bodies each connected with independent motors, each of said motors having a tripping lever adapted to be actuated by the weight of a coin. 3rd. In a coin operated automaton, the figures of two cocks in a fighting attitude, the necks of said figures being articulated as shown and described, and provided with connections to a common motor. 4th. In coin operated automatons, the figures of two cocks in a fighting attitude, the legs of said figures being articulated, and having connection to a common operating motor, independent of the other movable parts of the figures. 5th. In a coin operated automaton, the figures of two cocks in a fighting attitude, the movable legs and necks of said figures having independently operating connections to a common motor. 6th. The combination, with two articulated figures, each connected with a common motor, of a coin chute having branches leading to a tripping lever beneath each of said branches, and adapted to control the movement of said independent motors. 7th. The combination, with the articulated figures, each connected with a common motor, and each provided with an independent motor, of a coin chute terminating in branches leading to the tripping levers of said independent motors, and the tripping levers. 8th. The combination, with the coin chute, the tripping lever connected with the common motor, the branches below said chute, and the tripping levers of the independent motors beneath the branches. 9th. A coin operated automaton, in which is comprised two articulated figures, each movably supported upon independent horizontal pivots, connected with independent motors. 10th. A coin operated automaton, in which is comprised two articulated figures, the movable parts of said figures having connection to a common motor, a movable pivot for each figure having connection to an independent motor, a coin chute, a lever controlling the common motor, branches of said coin chute, and levers controlling the independent motors, arranged below said coin chute. 11th. The combination, with two figures having their necks and legs articulated, as set forth, of a common actuating motor having connection with the figures, a coin chute, and a tripping lever adjacent to said chute adapted to operate by the weight of a coin. 12th. In a coin operated automaton, the combination, with the actuating motor, of a figure having a neck composed of a series of blocks, hinged to each other and a cord passing from the head through the said hinged blocks, and connecting with the actuating motor. 13th. In a coin operated automaton, representing cocks in a fighting attitude, the combination, with the legs pivoted to the body, and normally held in a vertical position by a spring, of connections between the legs and the actuating motor. 14th. The combination, with the coin actuated motor, of a vertically movable yoke having connection with said motor, a horizontal shaft carried by said yoke, and a tube mounted upon said shaft and supporting a figure. 15th. The combination, with the horizontal shaft of the tube journalled upon said shaft, the figure fixed to said tube, and the pulleys over which said cord connected to the movable parts of the figure, and the coin actuated motor pass, pivoted in said tube. 16th. The combination, with a figure having an articulated neck, and a cord passing therefrom, of an arm fixed to a vertically movable bar, bearing a pin engaging with a cam wheel upon the actuating motor, said cord being attached to the movable bar. 17th. In a coin operated automaton, the combination, with the wheel upon the coin actuated motor, provided upon one side with a stud, of a vertically movable lever against which said stud is adapted to strike, and connections between said lever, and the pivoted legs of the figures. 18th. In a coin operated automaton, the combination, with the actuating motor, bearing a wheel having a cam upon one side and a stud or studs upon the other, of connections to the articulated legs and necks of two figures, adapted to be alternately actuated by the rotation of said wheel. 19th. In a coin operated automaton, the combination, with the coin chute, of a horizontal lever projecting in said chute and provided with two fingers, one of which is adapted and arranged to enter a notched disc upon the motor with which said lever is connected, and the other to engage with the fly of the motor. 20th. The combination, with the fixed coin chute having a slidable portion, of the receptacle into which the slidable portion projects. 21st. The combination, with the fixed coin chute having a slidable portion, of a receptacle beneath said chute, having an A-shaped bottom, and independent branch chutes. 22nd. The combination, with fixed coin chute having a slidable portion entering a receptacle having an A-shaped bottom and branch chutes, of levers projecting beneath said branch chutes and controlling the movement of independent motors. 23rd. The combination, with the coin controlled actuating motor, the yoke supporting the horizontal shaft, rotatable tube and figure, of the slotted partition between said yoke and figure, and the slide over said slot. 24th. The combination, with the slidable yoke bearing a horizontal shaft, of a rotatable tube mounted upon said shaft and provided with a toothed wheel, and a rack with which the teeth of said wheel mesh. 25th. The combination, with a slidable yoke bearing a horizontal shaft supporting a movable figure, of the downwardly projecting stem of said yoke, terminating in a horizontal foot, and the arm upon the motor adapted to engage with said foot.

No. 40,315. Hot Water Heating System.

(Système de calorifère à eau.)

Fannie Augustua Gates and Eugene Napoleon Gates, both of Fitchburg, Massachusetts, U.S.A., 12th September, 1892; 6 years.

Claim. 1st. A water heating system comprising a heater, a supply pipe to conduct water from the heater to the radiators, and having an outlet or outlets practically free from pressure, opposing the departure of water therefrom, and a pump of greater capacity than said outlet or outlets connected with the supply pipe and adapted by its excess of capacity to maintain a pressure in said pipe and radiators in excess of the discharge therefrom, as set forth. 2nd. A water heating system comprising a heater, a supply pipe to conduct water from the heater to the radiators, and having an outlet or outlets practically free from pressure opposing the departure of water therefrom, a valve or valves for regulating the velocity of the water escaping at said outlet or outlets, and a pump of greater capacity than the maximum capacity of the said outlet or outlets, connected with the system and adapted to maintain a pressure in the supply pipe and radiators, the said valves enabling the temperature of the radiating surfaces to be regulated by regulating the volumes or velocity of the escape of water, as set forth. 3rd. A water heating system comprising a heater, a supply pipe to conduct water from the heater to the radiators, a return water tank or receptacle, return connections between said tank and the supply pipe and radiators, and a pump adapted to transfer water from the tank to the heater, the capacity of the pump exceeding that of the said return connections, whereby the pump is enabled to maintain a constant pressure in the supply pipe and radiators, as set forth. 4th. A water heating system comprising a heater, a supply pipe to conduct water from the heater, a series of radiators having their inlets connected with the supply pipe, a return or discharge pipe having outlet connections with said radiators, said outlet connections having valves whereby the velocity of escape of water from the radiators may be regulated, a tank receiving the discharge from the return pipe, and pump connected with the tank and heater and adapted to transfer water from the tank to the heater, said pump having a capacity in excess of the capacity of the said outlet connections, all substantially as set forth. 5th. A water heating system including a heater, a supply pipe to conduct water from the heater to the radiators, a tank or reservoir for return water, return connections between said supply pipe and radiators and said tank, a steam pump connected with said heater and adapted to transfer water from the tank to the heater, and to force water through the supply pipe and radiators, and a condensing conduit or receptacle for the exhaust steam from the pump arranged to impart the heat from the exhaust steam to the water passing to the heater, as set forth. 6th. In a water heating system, the combination of a heater or receptacle in which water may be heated, a supply pipe connected with said heater and adapted to conduct water therefrom, said pipe having an outlet practically free from pressure opposing the departure of water therefrom, a pump arranged to force water from the heater through said pipe, and a valve at or near the discharging end of the pipe whereby the temperature of the radiating surfaces supplied by the pipe may be regulated by varying the volume of water passing therethrough, as set forth. 7th. In a hot water heating system, the combination of a boiler or heater, a supply pipe arranged to receive water from said supply pipe without creating back pressure therein, as described, a return pipe having a dead end and a discharging end communicating with said tank, and

a pump arranged to force water from the tank to the heater and through the supply pipe, as set forth. 8th. In a water heating system, the combination of a steam generator, a steam pump operated thereby, a supply pipe, and a series of radiators connected therewith, into which water is forced by said pump, a return water tank or receptacle connected with the supply pipe and radiators and with the pump, and a conduit or receptacle in said tank receiving the waste or exhaust steam from the pump, the return water in said tank being heated by said steam before being forced by the pump through the supply pipe and radiators, as set forth.

No. 40,316. Door Closer and Check.

(Fermeture et arrête-porte.)

Robert Adams, 67 Newington Causeway, Surrey, England, 12th September, 1892; 6 years.

Claim.—The improved method of fitting the levers of door springs and checks, the characteristic feature of which is the special construction of the lever f and the arrangement of the centres and connections, whereby the revolution of the lever, round the centre f^2, carries the centre f^3 to such a position that a constant leverage is secured to operate upon the door, so as to close the same at any angle to which it may be opened, thus obviating an angle of repose being attained, substantially as described and illustrated by the drawing.

No. 40,317. Legging. (*Guêtres.*)

Louis W. Groat and William J. Van Vleck, both of Hudson, New York, U.S.A., 12th September, 1892; 6 years.

Claim.—1st. As a new article of manufacture, a legging provided with an interposed rubber or other elastic strip, substantially as described for the purpose set forth. 2nd. The combination with a legging provided adjacent to its top with ventilation perforations, of a rubber or other elastic strip interposed in a cut out portion in said legging substantially as described for the purpose set forth.

No. 40,318. Secondary Battery. (*Batterie secondaire.*)

Montgomery Waddell, Justus Bulkley Entz, and William Alfred Phillips, all of Bridgeport, Connecticut, U.S.A., 12th September, 1892; 6 years.

Claim. 1st. A battery electrode made up of wire bent upon itself to form a mat or plate in combination with wire loops or straps surrounding the same. 2nd. A battery electrode made up of wire bent upon itself to form a mat or plate in combination with wire loops or straps surrounding the same, and secured thereto by means of binding devices which pass through the mat. 3rd. The combination with a battery plate of an insulated wire extending around the side edges and the bottom for the purpose of insulating and supporting the plate. 4th. The combination with a battery plate of a wire extending around the side edges and the bottom, the bottom portion being offset to elevate the plate, substantially as described. 5th. The combination of a battery plate with a wire extending around the side edges and the bottom thereof and other wires embracing the side and bottom, for the purpose described. 6th. A supporting and insulating device for battery plates consisting of a binding wire or strap of flexible material covered with textile material impregnated with a suitable insulating material. 7th. A supporting and insulating device for battery plates consisting of a binding wire or strap of flexible material, covered with textile material impregnated with whiting and silicate of soda. 8th. In a secondary battery, the combination of a positive and negative electrode, one contained within the other and one being entirely covered or protected with insulating material for the purpose set forth. 9th. In a secondary battery an insulated positive electrode contained within an uninsulated perforated envelope of tin constituting the negative electrode, substantially as described. 10th. In a secondary battery a containing cell forming part of the circuit and having connected with it the conductor c and also provided with a slot or opening for the second electric conductor, the slot being fitted with insulating material, substantially as set forth. 11th. In a secondary battery, a plurality of insulated positive electrodes inclosed respectively in a plurality of negative electrodes, the two sets or groups being in mechanical contact with one another, substantially as described.

No. 40,319. Secondary Battery. (*Batterie secondaire.*)

Justus Bulkley Entz and William Alfred Phillips, both of Bridgeport, Connecticut, U.S.A., 12th September, 1892; 6 years.

Claim.—1st. The method herein described of treating secondary electric batteries containing a metallic solution, which consists in agitating or maintaining a circulation in the solution or electrolyte simultaneously with the operation of charging or discharging. 2nd. The method herein described of treating secondary electric batteries containing a metallic solution, which consists in applying heat to the cells, simultaneously with the operation of charging or discharging. 3rd. The method herein described of treating secondary electric batteries containing a metallic solution, which consists in applying heat to the lower end or bottom of a cell or cells while the same are being charged or discharged.

No. 40,320. Trimmer for Machines for Sewing Looped Fabrics. (*Appareil à garniture pour machines à coudre les tissus troués.*)

Adelbert Lee Traver, Philmont, New York, U.S.A., 12th September, 1892; 6 years.

Claim.—1st. A fabric trimming attachment combining with the pin plate of a turning-off machine, a bar having a wedge shaped end consisting of two parallel sides, a lower edge lying close to and parallel with the points on said pin plate, and an inclined upper edge of sufficient length and inclination to give to the wedge shaped part near the rear end sufficient dimension to draw out or break the loops of the fabric, a guide plate lying against and supporting the opposite side of said fabric from said bar and wedge and having a slot opposite said wedge, mechanism whereby said bar may be reciprocated in the direction of the lower edge of its wedge shaped end through said slot in said guide plate, and a frame for supporting and guiding said bar for supporting said guide plate and carrying said mechanism, substantially as and for the purpose set forth. 2nd. A fabric trimming attachment combining with the pin plate of a turning-off machine, a bar having a wedge shaped end consisting of two parallel sides, a lower edge lying close to and parallel with the points on said pin plate, and an inclined upper edge, a guide plate having a slot of such width as to just admit said wedge shaped end, and lying against and supporting the opposite side of the fabric carried by said pin plate from said wedge shaped end and with its slot opposite thereto, a four motion cam for imparting motion to said bar by acting upon the surfaces thereof at right angles to each other, mechanism for revolving said cam and a frame for supporting and guiding said bar, for supporting said guide plate and carrying said mechanism, substantially as and for the purpose set forth. 3rd. A fabric trimming attachment combining with the pin plate, of a turning-off machine, bars having wedge shaped ends positioned on these bars where they can pierce opposite sides of the fabric impaled on said pin plate, four motion cams, for imparting motion to said bars by acting on the surfaces thereof at right angles to each other, mechanism for revolving said cams and a frame for supporting and guiding said bars and carrying said mechanism, substantially as and for the purpose set forth. 4th. A fabric trimming attachment combining with the pin plate, of a turning-off machine, a lever bearing on its end a jaw opposite the edge of the fabric impaled on said pin plate, a spring between the lever and the jaw, a guide plate lying against and supporting the opposite side of the fabric from said jaw, a four motion cam, mechanism for revolving said cam and a frame for supporting and guiding said lever, for supporting said guide plate and carrying said mechanism, substantially as and for the purpose set forth. 5th. The combination, in an attachment for a turning-off machine, of levers situated on opposite sides of the fabric impaled on the pin plate and guided by fulcrum pins, so that they can slide in a direction to and from the fabric and rock to and from said pin plate, jaws supported from these levers in a position to oppose each other, springs between the levers and the jaws, four motion cams, positive connecting mechanism, and a frame for supporting and guiding said levers through said fulcrum pins and supporting said cams and connecting mechanism, whereby the jaws may be caused to press the edges of the fabric with a spring pressure when lifting, as and for the purpose set forth. 6th. A fabric trimming attachment combining with the pin plate, of a turning-off machine, a lever bearing a wedge shaped end for severing the fabric and a jaw where it can operate on the fabric between said wedge and the sewing mechanism, a guide plate lying against and supporting the opposite side of the fabric from said wedge and jaw, a slot in said guide plate opposite said wedge, a cam acting on this lever to slide it toward the fabric and then rock the end bearing the wedge and jaw upward from the pin plate, mechanism for revolving said cam and a frame for supporting and guiding said lever, for supporting said guide plate and carrying said mechanism, substantially as and for the purpose set forth. 7th. A trimming attachment for a turning-off machine, combining with the pin plate for feeding the fabric, slotted levers guided by fulcrum pins on which they can slide and rock, wedge shaped ends positioned on these levers where they can pierce the fabric, jaws supported on these levers in position to oppose each other on opposite sides of the fabric between the wedge shaped ends and the sewing mechanism, cams acting on these levers to slide them toward the fabric and then rock the ends with the jaws and wedge shaped ends upward from the pin plate, and a frame for supporting and guiding said levers through said fulcrum pins and supporting said cams, as and for the purpose set forth.

No. 40,321. Machine for Sawing Slabs.

(Machine à scier les dosses.)

Albert T. Linderman, Whitehall, Michigan, U.S.A., 13th September, 1892; 6 years.

Claim.—1st. In a slab sawing machine, the combination, with a saw for sawing the slabs, of an endless chain system of carriages for carrying the slabs, means for regulating the space between the carriages and the saw, whereby the thickness of the lumber cut from the slab is regulated, wood or soft metal faced supports upon the carriages for supporting the slabs, wood or soft metal faced receding dogs in the carriages for dogging the end of the slab, whereby it is driven along with the carriages, a reciprocating pressure wheel ahead of the saw for holding the slab against the carriages, and

suitable mechanism for stopping, starting, or reversing the feed of the carriages, substantially as set forth. 2nd. In a slab sawing machine, the combination, with a saw for sawing the slabs, of a moving endless chain system of carriages provided with receding dogs which recess in the carriages when covered by the slab, but become operative to dog the end of the slab when not so covered, whereby the slab is driven with the carriages, substantially as shown and described. 3rd. In a slab sawing machine, the combination, with a saw for sawing the slabs, of an endless chain system of moving carriages, provided with wood or soft metal faced feet for supporting and carrying the slab while it is being cut, means for changing and regulating the distance of the travel of the moving carriages from the saw, whereby the thickness of the lumber cut from the slab is regulated and a presser wheel for holding the slab in position on the carriages, substantially as set forth. 4th. In the moving endless chain system of carriages for slab sawing machines, a carriage provided with wood of soft metal faced receding dogs for driving the slabs, whereby contact of the saw teeth with said dogs is rendered harmless to the saw teeth, substantially as specified. 5th. In the moving endless chain system of carriages for slab sawing machines, a carriage provided with a wood or soft metal faced foot for supporting the slab, whereby contact of the saw teeth with said foot is rendered harmless to the teeth of the saw, substantially as shown and described. 6th. The combination, in a machine for sawing slabs, of a saw for sawing the slabs, an endless chain system of moving carriages for carrying the slab, means for regulating the distance evenly of the carriages from the saw whereby the thickness of the lumber cut is regulated, and the presser wheel 55, arranged to operate in holding the slab to the carriages where they are regulated, substantially as set forth. 7th. The machine for sawing slabs, consisting essentially of a vertical circular saw, a vertical flat surfaced endless carrier moving parallel to the plane of the saw and provided with a bottom support for the slab, and dogs for dogging it at its rear end, and a presser wheel adapted to act upon the rough side of the slab, substantially as set forth.

No. 40,322. Process of Extracting Zein.

(Procédé d'extraction de zeine.)

Thomas B. Osborne, New Haven, Connecticut, U.S.A., 13th September, 1892; 6 years.

Claim.—1st. The herein described process of extracting zein from Indian corn, which consists in removing the starchy constituents from the corn, treating the remaining substance thus obtained with a solvent of zein, and separating the resulting solution from the insoluble residue, substantially as and for the purpose described. 2nd. The herein described process of extracting zein, which consists in treating the nitrogenous remainder left after the manufacture of corn starch with a solvent of zein, substantially as and for the purpose described.

No. 40,323. Pipe Coupling. (*Joint de tuyau.*)

William Carey, Southampton, England, 13th September, 1892; 6 years.

Claim.—1st. A pipe coupling comprising hollow spheres, one of which is arranged within the other and is capable of angular movement relatively thereto, and hollow cylinders, one of which is attached to the outer sphere and is arranged within the other cylinder and is capable of rotation relatively thereto, substantially as and for the purposes specified. 2nd. A pipe coupling comprising a hollow sphere or sector of a sphere connected with a pipe or tube and inclosed in another hollow sphere which is formed in two parts held together by clasps or other fastenings, and which is formed with an elongated slot or opening wherein the said pipe or tube can move to permit angular movement of said spheres relatively to each other, substantially as described. 3rd. A pipe coupling comprising inner and outer hollow spheres, one of which is provided with a groove surrounding an elongated opening in the said sphere and containing metal, India rubber or similar material for making the joint fluid tight, substantially as described. 4th. A pipe coupling comprising inner and outer hollow spheres, one of which is provided with pivots or trunnions that work in bearings in the other sphere, substantially as and for the purposes specified. 5th. A pipe coupling comprising a hollow cylinder formed with a circumferential or annular groove and inclosed in another hollow cylinder having fixed therein pins which extend into the said groove, and metal, India rubber or similar substance arranged between the bearing surfaces of the joint, substantially as described for the purposes specified. 6th. In a pipe coupling, the combination of the inner and outer hollow cylinders having the metal, India rubber or similar substance arranged between them, and the extraneous supports for holding together the two parts of the coupling whilst permitting relative rotation of the same, substantially as described for the purposes specified. 7th. In a pipe coupling, the combination, with an inner hollow sphere and a divided outer sphere inclosing the same, of a fastening consisting of a portion or zone of a hollow sphere of uniform or of varying thickness fitting closely on the said divided sphere, substantially as and for the purposes specified. 8th. In a pipe coupling, the combination, with two hollow cylinders abutting against each other, of a connecting tube or sleeve arranged to slide longitudinally thereon and secured in place by pins or other fastenings, substantially as and for the purpose specified, 9th A pipe coupling comprising inner and outer hollow spheres, and wherein the inner sphere is made with an elongated opening equal, or approximately equal, in width to the bore of the pipe, for the purposes specified. 10th. In a pipe coupling, the combination, with the inner and outer spheres, of the hemispherical cap or cover, and the reinforcing ring or zone, substantially as described and for the purpose specified. 11th. A pipe coupling comprising inner and outer hollow spheres and wherein balls are arranged between said inner and outer spheres, substantially as described.

No. 40,324. Street Indicator for Street Cars.

(Indicateur pour chars de rue.)

George Spoelstra, John Vandermeer and Gerrit Stevens, all of Grand Rapids, Michigan, U.S.A., 13th September, 1892; 6 years.

Claim. An indicator for street cars, consisting of the following elements, to wit: A casing having sight openings in opposite sides, parallel shafts F^1, F^{11}, in said casing between said sight openings, rolls C, C^1, mounted on said shafts, intermeshing gears S, S^1, also fixed on said shafts, pins on gear S^1, a spring pressed pivoted hammer U, operated by said pins, a gong adjacent to said hammer, a ratchet J^1, having a hub mounted on shaft F^1, a shifting lever having a sleeve turning freely on said hub of the ratchet and operating within predetermined limits, pull cords extending in opposite directions from the lower end of said lever, a double pawl pivoted to said shifting lever and designed to engage said ratchet, a retracting spring for said pawl, spring rollers mounted on shafts above and below the adjacent surfaces of said rolls C, C^1, ratchets on the shafts of said spring rollers, pawls engaging said ratchets, and a tape R, lettered on both sides and operating as described.

No. 40,325. Fluid for Primary Batteries.

(Fluide pour piles électriques.)

Theophilus Coad, London, England, 13th September, 1892; 6 years.

Claim.—1st. A fluid for primary batteries composed of nitric acid, mercury, bichromate of potash and water, as and in or about the proportions stated in the foregoing specification. 2nd. A fluid for primary batteries composed of nitric acid, mercury, carbonate of potash, carbonate of soda, bichromate of potash, sulphuric acid, common soda and water, mixed as and in about the proportions stated in the foregoing specification. 3rd. In the preparation of a fluid for primary batteries mainly composed of nitric acid, mercury, carbonate of soda, carbonate of potash, sulphuric acid, common soda and water, adding to a mixture as described, of the above named chemicals, when cold, water, nitric acid and common soda, as and in about the proportions stated in the foregoing specification. 4th. In the preparation of a fluid for primary batteries, the use with other ingredients of a combination of nitric acid, mercury, bichromate of potash and water, in or about the proportions stated. 5th. In fluids for primary batteries, the use of nitric and sulphuric acids, and an alkali or alkalies in proportions, substantially as described.

No. 40,326. Compound Steam Engine.

(Machine à vapeur composée.)

Robert McCandlass Beck, Chambersburg, Pennsylvania, U.S.A., 13th September, 1892; 6 years.

Claim.—1st. In a compound steam engine, a high pressure and a low pressure cylinder, the valves for said cylinders, the governor on the engine shaft, and the intermediate connections between the governor and valves, whereby they are jointly operated, substantially as described. 2nd. In a compound steam engine, the combination, of a high pressure cylinder, a low pressure cylinder, the valves for said cylinders, the governor on the engine shaft, and the valve rods for said valves, the rocker arm to which they are connected, and the eccentric rod connecting the governor and rocker arm, substantially as described. 3rd. In a compound engine, the combination, of a high pressure cylinder, a low pressure cylinder, their pistons and piston rods, the cross head to which the latter are connected, the valves for the cylinders, and the governor for jointly operating said valves, substantially as described. 4th. The combination, of a high pressure cylinder E, a low pressure cylinder D, the cross head F, to which the piston rods of said cylinders are connected, the engine shaft H, crank disc K thereon, and connecting rod G, together with the valve chambers, valves and valve rod, all substantially as described. 5th. The combination, of the high and low pressure cylinders, the valve therefor, the engine shaft, the wheel governor on said shaft having eccentric L, the valve rods P and P^1, connected to the valves of the cylinders, the rocker arm journalled in the main frame and having said valve rods connected thereto, and the eccentric rod connected to said eccentric and to the rocker arm, all substantially as described.

No. 40,327. Typograph. (*Typographe.*)

Fred E. Bright, Cleveland, Ohio, U.S.A., 13th September, 1892; 6 years.

Claim.—1st. The combination, with ways and character members adapted to travel thereon, of latches for releasing said character members, latch connecting rods and finger keys, together with a key board having an upper and a lower key opening, said keys respect-

ively having oblique slots in their portions intermediate of said two key board openings, and said latch connecting rods respectively having cross bars loosely fitted in said slots, substantially as set forth. 2nd. The combination, with ways, character members travelling thereon, and latches which rock on their longitudinal axis, of finger keys and connecting rods between said keys and latches, said latches and connecting rods having engagement by intermediate separate hooks respectively formed independent of other parts, substantially as set forth. 3rd. The combination, with ways, character members travelling thereon, and latches which rock on their longitudinal axis, of finger keys and connecting rods between said keys and latches, said latches and connecting rods having engagement by intermediate separate hooks respectively formed independent of other parts and having ther free extremities respectively engaging with the upper extremities of said latches, substantially as set forth. 4th. The combination, with a key connecting rod and rocking latch having a crank, of a hook fitted on said rod and having its free extremity engaging with said crank, substantially as set forth. 5th. The combination, with a key connecting rod and a rocking latch having a crank provided with an eye, of a hook fitted on said rod between two nuts and having its free extremity loosely engaging with said eye, substantially as set forth. 6th. The combination, with a way, of a character member depending therefrom, said character member having its suspending eye of greater longitudinal dimension than is the corresponding dimension of said way, whereby said character member may have a limited longitudinal play on said way, substantially as set forth. 7th. The combination, with character members, of a latch having two lips respectively formed in line with the shank of the latch, said latch shank having a crank, substantially as set forth. 8th. The combination, with character members, of a latch having two lips respectively located in same line with the shank of the latch, and a connecting rod which is connected to a crank secured to said latch shank, substantially as set forth. 9th. The combination, with character members, of a latch having two parallel lips formed in the lower portion of the latch and respectively located in the same line with the shank of the latch and an actuating rod connected to a crank rigid with the upper extremity of said latch crank, substantially as set forth. 10th. The combination, with character members, of a latch having two parallel lips formed in its lower portion respectively in line with the latch shank, and an actuating rod connected to a crank rigid with the upper portion of said latch, together with a coil spring encircling said latch shank and having one extremity secured thereto, while its opposite extremity is secured to a support of said latch, substantially as set forth. 11th. The combination, with travelling character bars and a latch having two lips formed in its lower portion and parallel with the latch shank, of an actuating rod connected to a crank rigid with the upper portion of said latch, a two arm bracket supporting said latch, and a recoil spring, substantially as set forth. 12th. The combination, with character members and means for assembling and maintaining them in line, of a main rotary shaft, a rock shaft, justifying mechanism connected with the latter, and a connecting rod having one end secured to a slide link which encloses said rotary shaft and has a stud which engages with a cam on the latter, the opposite end of said connecting rod being pivoted to an arm of said rock shaft, substantially as set forth. 13th. The combination, with character members and means for assembling and maintaining them in line, of a rocking compressor shaft located below and in vertical plane with said line, said compressor shaft having a compressing arm at its rear extremity and having a longitudinal rack at its forward extremity, together with a rocking toothed segment which engages with said rack, substantially as set forth. 14th. The combination, with a compressor shaft having a pin projecting from its under side and working in a groove in the machine in part of its length angular to the longitudinal axis of the compressor shaft, of a toothed segment having rocking movement in a plane parallel with the longitudinal axis of the compressor shaft and meshing with a rack stem longitudinally projecting from the compressor shaft, substantially as set forth. 15th. The combination, with a rocking space carrier having its stem provided with a pinion and a rack which engages with said pinion, of an actuating lever connected to said rack, substantially as set forth. 16th. The combination, with a rocking space carrier and an actuating device connected thereto, of a bell crank locking with the latter, and a rocking arm which detaches said bell crank from such lock, substantially as set forth. 17th. The combination, with a rocking space carrier and a longitudinally movable bar engaging therewith, of a rocking shaft which engages by intermediate mechanism with said bar to move it longitudinally, substantially as set forth. 18th. The combination, with a rocking space carrier carrying a pinion and a longitudinally reciprocating rack bar meshing with the latter, of a rocking shaft and intermediate engaging mechanism between it and said rack bar to move the latter in one direction, substantially as set forth. 19th. The combination, with a rocking space carrier carrying a pinion, a longitudinally movable rack bar engaging with the pinion, and a spring actuated lever which engages with the latter to move it in one direction, of a rocking shaft engaging an arm of said rack bar to move the latter in opposite direction, substantially as set forth. 20th. The combination, with the longitudinally reciprocating compressor shaft and the rocking shaft gearing therewith, of the rocking space carrier and the longitudinally movable rack bar gearing therewith, together with rack bar locking mechanism, said rocking shaft having an arm which in its opposite movements respectively forces said rack bar in one direction and trips its locking mechanism, so that it may move in opposite direction, substantially as set forth. 21st. The combination, with a longitudinally reciprocating compressor shaft, a rocking space carrier, and a rack meshing with the latter, of a rocking shaft geared to said compressor shaft and having an arm and a rocking arm which locks said rack from movement, said rocking shaft first actuating said compressor shaft in longitudinal movement, and then its arm tripping said locking arm of said rack, substantially as set forth. 22nd. A compound space having two sections, one section having rocking movement relative to the other section, one section loosely carried by its companion section, and mechanism constructed to expand the compound space when said rocking section is rocked, substantially as set forth. 23rd. A compound space having two sections, one section having rocking movement relative to the other and loosely carrying the latter, and mechanism constructed to expand the compound space when said carrying section is rocked relative to the section loosely carried thereby, substantially as set forth. 24th. A compound space having a rocking disc section and a non-rocking wing section loosely carried by said disc section, said two sections having engaging faces respectively inclined reversely to the other, substantially as set forth. 25th. A compound space having two sections, one section being a circularly moving disc having a hub, the other section being a wing section loosely fitted on said hub, said sections having engaging faces respectively inclined reversely to the other, substantially as set forth. 26th. In a compound space, the combination, with a section provided with a shoulder, of a companion section having bearing against said shoulder, one of said sections having rocking movement relative to the other, said two sections having oppositely inclined adjoining faces, substantially as set forth. 27th. In a compound space, the combination, with one section having a shoulder on one face, of a companion section having edge bearing against said shoulder, one of said sections adapted to have rocking movement relative to the other, said two sections having oppositely inclined adjoining faces, substantially as set forth. 28th. A compound space having two sections, one section being a disc having rocking movement and being formed with a shoulder on its face adjacent to the companion section, said companion section being a wing loosely supported on said disc section and having a rear edge bearing against said shoulder and adapted to be maintained without rocking movement while said disc section is being rocked, said two sections having their adjacent faces oppositely inclined, substantially as set forth. 29th. The combination, with a compound expansible space and a rock shaft which rocks one space section, of a guard which locks the companion space section from rocking and a guide which conducts the latter space section into proper position relative to said guard as the compound space is being assembled in the line of composition, substantially as set forth. 30th. The combination, with a compound expansible space, a rock shaft which rocks one space section, and a guard adjacent to said rock shaft and constructed to lock the other space section from rocking, of a way on which said compound space travels to said rock shaft and a guide located adjacent to the junction of said way and shaft, and with which said non-rocking space section may engage to insure its proper position relative to said guard, substantially as set forth. 31st. The combination, with a travelling compound expansible space, having a disc section and a wing section, a rock shaft which rocks said disc section, and a guard groove in which a projection of said wing section loosely fits when the compound space is assembled in the line, of a way on which said space travels to said rock shaft and a guide which engages with said wing section to conduct said latter's projection into said guard groove, substantially as set forth. 32nd. The combination, with character member ways, character members, and means for assembling and compressing the latter in line on the ways, of spaces, means for assembling them in the same line, a space carrier on which the spaces are fitted when so assembled, and which is formed independent of said character member ways, a space supporter formed independent of the foregoing parts, and means for clamping said supporter against the assembled spaces, substantially as set forth. 33rd. The combination, with character members, means for assembling and compressing them in line, and a space carrier formed independent of said means, of spaces, means for assembling them on said space carrier and in the composed line, the spaces being of such construction that when so assembled certain portions thereof project beyond the assembled character members, and a space supporter formed independent of the foregoing parts and constructed to engage said projecting portions of the spaces without engaging with the character members, substantially as set forth. 34th. The combination, with character members, means for assembling and compressing them in line, and a space shaft formed independent of said means and located out of said line, of spaces, means for assembling them on said shaft, in said line, said spaces being of such construction as when assembled on said shaft to have certain portions projecting outside of said line, a space supporter formed independent of the foregoing parts, and constructed to engage with said projecting portions of the spaces without engaging with the character members and means for moving said support to and from the spaces, substantially as set forth. 35th. The combination, with a movable mold and a space, of a space supporter formed independent of said mold and intermediate devices connecting said mold and space supporter which move the latter in opposite direction to the movement of said mold, substantially as set forth. 36th. The combination, with a mold and a space, of a space carrier

and a space supporter, said space carrier being located between said mold and space support, substantially as set forth. 37th. The combination, with character members and means for assembling and maintaining them in line, of a mold, spaces and means for assembling the spaces in said line, said spaces projecting beyond said assembled character members to that side of the line opposite to the mold, together with a space supporter which surrounds said projecting sides of the spaces and engages therewith without engaging with said character members, substantially as set forth. 38th. The combination, with character members and means for assembling and maintaining them in line, of a mold, spaces and means for assembling the latter in the same line, said spaces being of such greater dimension than the character members as to project beyond them when assembled in line, together with a supporter constructed to fit about said projecting portions of the spaces and to cause said spaces to be centered against the mold, substantially as set forth. 39th. The combination, with a space having a curved bearing, of a supporter having a curved face which fits against said curved space bearing, substantially as set forth. 40th. The combination, with a circular space, of a semi-circular space supporter, substantially as set forth. 41st. The combination, with character members and means for assembling and maintaining them in line, of a mold having a lower section and an upper section constructed to be clamped against the front edges of said assembled character members, said upper mold section being pivoted below the plane of the bottom of the joining wall of said two sections, substantially as set forth. 42nd. The combination, with character members and means for assembling and maintaining them in line, of a mold having a lower section and an upper section constructed to be clamped against said character members, said upper mold section being pivoted below the plane of the lower face of the rear wall of the mold chamber carried by said pivotal section, said rear wall being located opposite the mold opening which is presented to said assembled line of character members, substantially as set forth. 43rd. The combination, with a mold slide having a lower mold section secured thereto, of an upper mold section pivotally connected to said mold slide, the axial centre of said pivotal connection being located in a plane below the plane of the lower face of the rear side wall of the casting chamber, carried by said pivotal mold section, substantially as set forth. 44th. The combination, with a mold slide having reciprocating movement in a horizontal line and having a lower mold section rigidly secured thereto, of an upper mold section pivoted to said mold slide, said two mold sections forming a casting chamber having an open front side and having a rear side sealed metal tight by a wall of said upper mold section joining with a shoulder of said lower mold section, the axial line of the pivotal connection of said upper mold section, with the mold slide being located in a plane below the plane of the lower face of said rear side wall of the casting chamber carried by said pivotal mold section, substantially as set forth. 45th. The combination, with character members and means for assembling them in line, of a mechanical member constructed to clamp said line, means for moving said clamping member to and from said line, an aligning plate moved to and from said line by said clamping member, and a spring which presses the plate toward said line, substantially as set forth. 46th. The combination, with character members and means for assembling them in line, of a mechanical member constructed to clamp said line, means for moving said clamping member to and from said line, an aligning plate loosely connected to and carried to and from said line by said clamping member, and a spring connected to said clamping member, and aligning plate and pressing the latter toward said line, substantially as set forth. 47th. The combination, with character members and means for assembling them in line, of a swinging mechanical member which also has an independent movement bodily toward and from said line and is constructed to clamp the latter, an aligning plate carried to and from said line by said clamping member, and a spring which presses the plate towards said line, substantially as set forth. 48th. The combination, with character members and means for assembling them in line, of a swinging mold section which also has an independent bodily movement toward and from said line, an aligning plate carried toward and from said line by said mold section, and a spring which passes the plate toward said line, substantially as set forth. 49th. The combination, with a rotary shaft carrying a cam, of a metal pump, a lever connected to the latter, and a link having one extremity connected to the said lever, and its opposite extremity provided with a bearing which may at will be maintained in or out of engagement with said cam, substantially as set forth. 50th. The combination, with a rotary driving shaft carrying a cam plate and a cam disc, of a metal pump, a link connecting the latter with said cam plate, and a pin engaging with said link, said pin adapted at will to be adjusted so as to ride on said cam disc and thereby maintain said link idle and free from its said cam, substantially as set forth. 51st. The combination, with a sectional mold, one of whose sections has a swinging movement, of a pin loosely fitted in an opening in the non-swinging section and engaging with the swinging section, said pin engaging with a machine part independent of the sectional mold and thereby opening said swinging mold section, substantially as set forth. 52nd. The combination, with a bodily movable mold having a swinging mold section, of a pin longitudinally fitted in an opening in the non-swinging mold section and engaging with the swinging mold section, said pin also engaging with an inclined plane on a stationary part of the machine, substantially as set forth. 53rd. The combination, with a sectional mold having bodily movement and an upper swinging section, of a pin loosely fitted in an opening in the lower mold section and having its upper end engaging with the lower face of the swinging mold section, the lower end of said pin engaging with an inclined plane on the machine bed, substantially as set forth. 54th. The combination, with a sectional mold having a longitudinal movement in horizontal line and formed with an upwardly swinging mold section, of an ejector longitudinally fitted in a transverse opening formed in said swinging mold section, and and overhead relatively stationary plate having a horizontally inclined bearing with which the upper extremity of said ejector engages, substantially as set forth. 55th. The combination, with a trimmer slide and trimming cutters, of a spring latch which tends to maintain its position in front of said cutters and across the path of movement of said trimmer slide, substantially as set forth. 56th. The combination, with a longitudinally reciprocating trimmer slide having a front projection, of two cutters located, respectively, on opposite sides of the path of said trimmer slide, and a spring latch which tends to maintain its position across the path of said slide and between said cutter and said front projection of said slide, the trimmer slide having the front projection formed with front and rear beveled edges, substantially as set forth. 57th. The combination, with a rocking shaft and a mold slide connected thereto, of a crank loosely fitted on said shaft and adapted at will to be rocked therewith, a trimmer slide, and connection between the latter and said crank, substantially as set forth. 58th. The combination, with a rocking shaft, a mold actuating slide engaging therewith, and a crank loosely fitted on said shaft, of a trimmer slide and a link between the latter and said crank, said crank further provided with a lever adapted at will to be engaged in a notch formed in a mechanical member rigid with said shaft, substantially as set forth. 59th. The combination, with a mold slide, of a rocking shaft having its longitudinal axis in line with the path of movement of the mold slide, and sectional cam mechanism first advancing the mold slide a certain distance and then maintaining it immovable in such advanced position as the rocking shaft moves in one direction, the reverse movement of said rocking shaft first maintaining the mold slide in said advanced position, and then retracting same, substantially as set forth. 60th. The combination, with a mold slide of a rocking shaft having its longitudinal axis in line with the path of movement of the mold slide, and tripartite cam mechanism connecting the two, the central section of the cam mechanism being secured to said rocking shaft and the two end sections of the cam mechanism being respectively secured to the mold slide, each said cam section having a projection parallel with the path of movement of the mold slide, said projection having a side inclined to said path and having an end at right angles to said path, substantially as set forth.

No. 40,328. Saw Set. (*Tourne à gunche.*)

Clark Baker, Greenville, Ohio, U.S.A., 14th September, 1892; 6 years.

Claim. 1st. In a saw set, the oppositely beveled base, a base plate secured to one face of said base and provided with an anvil, a die working over the anvil and provided with a spring shank secured to the base and nominally holding the die above the anvil, a lever having an eccentric head pivotally mounted upon said base and working over said die, a transverse saw rest secured to the base in front of the base plate and the anvil thereon, a gage screw adjustably working in the opposite face of said base, and adjustable gage plates mounted upon opposite sides of said base plate adjacent to the saw rest, substantially as set forth. 2nd. In a saw set, the oppositely beveled base, a base plate secured to one face of said base and provided with an anvil, a spring die working upon said base over the anvil, an eccentric lever pivoted upon the base over said die, a transverse rest plate located in front of the base plate and the anvil thereon, a gage screw, and an adjustable retaining lever adjustably mounted upon said base plate and projecting over the rest plate and adjacent to the gage screw, substantially as set forth. 3rd. In a saw set, the combination with the base plate, setting devices mounted upon said plate, a transverse rest plate, and an adjacent gage screw, of a retaining lever centrally pivoted over the base plate and provided with a forwardly extending retaining arm projecting over the rest plate over one side of the gage screw and an opposite threaded end, and an adjusting screw engaging said threaded end and bearing upon the base plate, substantially as set forth.

No. 40,329. Process for the Extraction of Metals from Ores and Minerals. (*Procédé pour extraire les mètaux des minerais.*)

Jabez Turton, London, England, 14th September, 1892; 6 years.

Claim. The herein described process for extraction of metals from ores and minerals containing them by subjecting the pulverized, roasted or crushed ore or mineral to the action of nitrate of potash or soda, salt and sulphuric acid, substantially in the proportions specified, for solution of the contained metals separating the earthy matters and precipitating the metal from the solution.

No. 40,330. Machinery for the Making of Cigarettes.

(Machine pour la fabrication des cigarettes.)

Anatole Edouard Decouflé, Paris, France, 14th September, 1892; 6 years.

Claim.—1st. In a cigarette making machine, the mechanism for conveying the paper tubes to the mechanism for filling them with tobacco and expelling them after being filled, which consists of two fixed bars furnished with equidistant notches and forming a tube receiver, and of a movable conveyor or transporter furnished with notches spaced to correspond with the notches in the receiver, each conveyor or transporter having upward, forward, downward and backward movements imparted to it, whereby the empty paper tubes are conveyed from notch to notch of the receiver and the completed cigarettes thrown out, substantially as hereinbefore described. 2nd. In a cigarette making machine, the combination of the conveying or transporting mechanism with the mechanism for making and cutting off the tubes, substantially as hereinbefore described. 3rd. The arrangements for raising or lowering the bearings V^1, whereby feed rollers r of various diameters may be employed for the purpose of varying at pleasure the length of the non-pasted tubes, as hereinbefore described. 4th. In combination with the tube forming spindle r, the loose shaper ring u for the purpose of regulating the diameter of the non-pasted tube, as hereinbefore described. 5th. The tube forming spindle r constructed with a groove r^1, the sides of which first diverge and then converge, so as to come fair, or to coincide with the sides of the slit t^1 in the folder t, combined with a presser S taking into the said groove, as hereinbefore described and for the purpose specified. 6th. The improved folding instrument t constructed with an inclined conical hole t^2, a longitudinal slit t^1, and a projecting leak t^3, as hereinbefore described. 7th. The tube forming spindle r, the loose shaper ring u and the folder t, constructed, combined and operating as hereinbefore described. 8th. The machine for making cigarettes with non-pasted paper tubes, which consists of mechanism for making and cutting off the non-pasted paper tubes, the tube conveying or transporting mechanism for conveying the tubes to the filling devices, mechanism for dividing or separating and compressing the tobacco and for forcing the same into the tube, and mechanism for storing the completed cigarettes, all constructed, combined and operating as hereinbefore described and illustrated in the drawings.

No. 40,331. Shield for Carriage Wheels.

(Garde pour roues de voiture.)

Dutee Sayles Paine, Cedar Falls, Iowa, U.S.A., 14th September, 1892; 6 years.

Claim.—The shield attachment for vehicle wheels, consisting of the inner circular vertical shield plate, and the carved rim flange extending at right angles therefrom, the curved brace arms, their horizontal extensions terminating in lugs, the arch plate and clip, and their rivet connections to the extensions of said brace arms, substantially as specified.

No. 40,332. Method of Making Cheese.

(Méthode de faire du fromage.)

Erik Gustaf Nicolaus Salenius, Stockholm, Sweden, 14th September, 1892; 6 years.

Claim.—A method of continuously producting curd or cheese, which consists in introducing into a continuously acting centrifugal drum or other machine suitable for the separation of butter, the liquid designed for making cheese, this liquid being heated to an appropriate degree either before, during or after its introduction, and mixed with rennet or an acid causing coagulation, and in some cases also with extracts or substances used in the making of cheese, and if necessary agitated in a suitable manner either in its passage through the apparatus or during the introduction or discharge of the same in order to accelerate the coagulation.

No. 40,333. Speed Regulator for Governors.

(Régulateur de vitesse pour gouvernateur.)

Freeman N. Saylor, Strathroy, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—1st. A radial arm H, or its substantial equivalent, and the application of a weight C, to said arm H, and means for connecting the latter with the governor, substantially as shown and described and for the purpose specified. 2nd. A radial arm H, or its substantial equivalent, pivoted on a suitable bell or multiple crank F, and means for connecting the latter with the governor, and the application of a weight C, to said arm H, substantially as shown and described and for the purpose specified. 3rd. A radial arm H, or its substantial equivalent, a suitable bell or multiple crank F, and means for connecting the latter with the governor, a lever B, provided with a weight C, about midway between its ends, and a link, substantially as shown and described and for the purpose specified. 4th. An automatic uniform speed regulator for governors, consisting of the radial arm H, hanger or link D, lever B, and link E, in combination with a weight C, and means for connecting these devices with the governor, substantially as set forth. 5th. A radial arm H, or its substantial equivalent, and a bill or multiple crank F, in combination with the hanger or link D, link E, lever B, and weight C, and means for connecting these devices with the governor, substantially as shown and described and for the purpose specified.

No. 40,334. Gate Latch. *(Loquet de barrière.)*

Charles Frederick Bettmann, New Albany, Indiana, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. In a combined lock, the combination of a spring actuated bolt or latch having a slot extending therethrough, a rod or bar with a head thereon movably engaging said bolt or latch and passing through said slot therein and operating the same, and a sleeve on said rod or bar for locking the latter in either one of its adjusted positions against rotatable movement, substantially as described. 2nd. In a combined latch and lock, the combination of a bolt or latch having a slot extending therethrough, a square rod or bar arranged at right angles to said bolt or latch and having a head engaging said bolt or latch, and a square sleeve having a square opening therein through which said rod or bar extends and adjustably fitted to a square seat, the said sleeve being adjustably mounted in a temporary fixed position, substantially as described. 3rd. In a combined latch and lock, the combination of a sliding bolt or latch having a slot therein and extending therethrough, an operating rod or bar arranged at right angles thereto and of square form, the said bar being provided with a cam head with a vertical wall, a square sleeve movably surrounding said bar or rod and having a square opening therein and a flanged head, and a bracket with a square opening therein to receive said square sleeve, said bolt or latch and operating rod or bar having springs in connection therewith, substantially as described.

No. 40,335. Double Action Pump. *(Pompe à double effet.)*

John F. Kievell and Charles Franklin Wilkin, both of Dundas, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—1st. In a double action pump, a cylindrical vessel having inlets, D D and outlet E the cover B attached thereto by means of a series of lugs c, in combination with the rigid wall K, having valves H, H, attached thereto, the central oscillating hub J, having supporting shanks, J^2 blades J^1, valves I, and float valve L, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a double action pump of the cylindrical vessel A, and cover B, having recesses, m, to facilitate the oscillation of the valve L, and grooves to facilitate the rigidity of wall, K, substantially as and for the purpose hereinbefore set forth. 3rd. The combination in a cylindrical vessel with cover, of the oscillating centre, J, having shanks and angled blades provided with valves T, on their upper surface, substantially as and for the purpose hereinbefore set forth.

No. 40,336. Stool. *(Tabouret.)*

George Herbert Ellis, Heathfield, Lansdowne, George Neasden, County of Middlesex, 14th September, 1892; 6 years.

Claim.—1st. In a camp stool, the combination, of two independent parts attached by webbing or seating only, substantially as herein described and according to the accompanying drawing. 2nd. In a camp stool, the combination, of two pieces so shaped that when brought together in the manner herein described a temporary union or fulcrum is furnished sufficient to give firmness to the seat without any actual pivot, joint or the like. 3rd. In a camp stool, the combination, of the two parts b and c, having legs d and e, e, with webbing a, slots f, rod g, and cavity h, substantially as herein described and according to the accompanying drawing.

No. 40,337. Fencing Wire. *(Fil de fer pour clôtures.)*

Theodore Guilleaume, Cologne, German Empire, 14th September, 1892; 6 years.

Claim.—1st. The improved fencing wire, consisting of two triangular wires A and A^1, laid base to base and twisted together, substantially as herein described. 2nd. The improved fencing wire, consisting of two triangular wires A and A^1, laid base to base and twisted together, and furnished with barbs C, substantially as herein described. 3rd. In fencing wire, the combination, with two triangular body wires A and A^1, laid base to base and twisted together, of a barb wire C, coiled about both members of the twisted bipart body wire, substantially as herein set forth.

No. 40,338. Process of Hardening Metal.

(Procédé pour durcir les metaux.)

Joseph S. Durning, Emsworth, Pennsylvania, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. The herein described process of tempering and hardening metals, consisting in coating the surface of the metals with a mixture composed of flour, prussiate of potash, and a liquid concoction from the laurel plant, heating said metal and plunging it when highly heated into liquid, substantially as described. 2nd. The herein described process of tempering and hardening metals, consisting in coating the surface of the metal with a mixture composed of flour, prussiate of potash, and a liquid concoction from the laurel plant, heating the metal and plunging it when highly heated into such liquid concoction, substantially as described. 3rd. A composition for tempering and hardening metals, containing a liquid concoction from the laurel plant, substantially as described. 4th. A composition for tempering and hardening metals, containing flour, prussiate of potash, and a liquid concoction from the laurel plant, in about the proportions specified.

No. 40,339. Pew Back. (*Dossier de banc d'église.*)

John Doherry Pennington, Hamilton, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—The combination of A, A, and B, inside veneer, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of B, and outside veneers A, A, substantially as and for the purpose hereinbefore set forth.

No. 40,340. Ditching Machine. (*Machine à fossoyer.*)

Leonidas H. Turner, Minneapolis, Minnesota, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. The combination in a ditching machine, of the prow, having the forwardly slanting sides, with continuations thereof extending upward and provided with the friction rolls, the upper portion of said sides arranged to twist and to invert the strip of earth excavated and to deposit the same on the ground at one side of the machine, substantially as described. 2nd. The combination in a ditching machine of sills, with the prow, having the forwardly inclined cutting edges and the flaring sides, the inclined sides and the bottom extending upward and back from said prow, one of the sides and the bottom being gradually turned or tilted, said sides and bottom provided with friction rollers and the concaved guide conforming to the shape or the ditch, substantially as described. 3rd. The combination in a ditching machine, of sills, with a shoe arranged in connection with the forward end thereof, the plate 15, the part 13, having the share 14, the slanting sides and bottom extending back from said shoe, the friction rolls arranged therein, the said sides and bottom being arranged to turn the strip of earth excavated and a roller truck arranged to receive said dirt and to deposit the same on the ground at one side of the ditch, substantially as described. 4th. The combination in a ditching machine, of the sills 4, with the supporting shoe for the forward end thereof, the prow, the slanting bottom extending back therefrom, and the draft chain 63 having two strands extending back to said sills, and attaching thereto at a point back of said shoe and above said plow whereby the pull on the machine is more accurately directed, substantially as described. 5th. The combination in a ditching machine, of the sills 4, with the arch strap 6, a supporting shoe or slide 62 therefor, eye block 32, coltors 30, and the coltor arms or rods 31 passing through said eye blocks, substantially as described. 6th. The combination, with the sills 4, and the forward strap ends thereof, of the cross block 61, with a screw 59, the long shoe 62, the slotted block thereon engaging the lower end of said screw, the draft chain 63 secured to said sills and means on the forward end of said shoe for engaging said draft chain, substantially as described. 7th. The combination, in a ditching machine, of the bottom and side mold boards, with the sills, said mold boards provided with and made up of friction rollers whereby the friction between the machine and the ground is minimized, substantially as described. 8th. The combination, in a ditching machine, of the sills 4, with the plank 17, the prow, the guide plate 15, and the compressing beads therein, substantially as described. 9th. The combination, of the sides and the bottom friction rolls having spindles 42, the plates or straps 43, the angle plates 44, and scrapers provided between said rolls, the ends of said scraper rods being secured in said plates 43 and 44, whereby said rods serve as tie beams and braces, substantially as described. 10th. The combination, with the plates 44, of the beams or pipe or pipes 45, provided therewith to strengthen the same, substantially as described. 11th. The combination, with the sills 4, of the track 26, having its bed made up of rolls 27, with the angle brackets 40, and the wheels 51, secured thereon as described. 12th. The combination, of the sills, with the curved sides and bottom and the roller truck secured to one of said sills and adapted to receive the dirt carried over the side of the machine by said curved side and bottom whereby sidewise movement of the machine is prevented, substantially as described.

No. 40,341. Grain Binding Harvester.

(*Moissonneuse-lieuse.*)

Earl G. Watrous, Hoosick Falls, New York, U.S.A., 14th September, 1892; 6 years.

Claim. 1st. The combination, in an automatic grain binding harvester, of the platform frame, the conveying, packing and binding devices, supported thereon from the front thereof, whereby an open passage is left for the crop at the rear, a shaft on the platform frame, from which the conveying, packing and binding devices derive motion, the main frame pivoted to the platform frame in front thereof, and the tongue frame pivoted to the front of the main frame, the driving wheel mounted in the main frame, its driving gear and the driving shaft receiving its motion from the driving gear, and communicating motion to the shaft on the platform frame, substantially as and for the purpose specified. 2nd. The combination, in an automatic grain binding harvester, of the platform frame, the conveying, packing, and binding device, supported thereon from the front thereof, whereby an open passage is provided for the crop at the rear, a counter shaft on the platform frame, from which the conveying, packing and binding devices receive motion, the main frame pivoted to the front of the platform frame, and the tongue frame pivoted to the front of the main frame, the driving wheel and its driving gear mounted in the main frame, the driving shaft communicating motion from the driving gear to the counter shaft on the platform frame, a swivel between the counter shaft and the driving shaft, and a tilting mechanism for rocking the platform frame on its pivotal connections with the main frame, as specified. 3rd. The combination of the main frame, the driving wheel, and its axle mounted thereon, the driving gear on the axle, the platform frame pivoted to the main frame in rear thereof, the tongue frame pivoted to the front of the main frame, the conveying, packing and binding devices carried on the platform frame, a driving shaft interposed between the operating devices and the driving gear on the axle, the reel frame supported on the platform, the reel shaft carried in the reel frame, and direct driving connections between the reel shaft and the driving gear on the axle, substantially as and for the purpose specified. 4th. The combination of the main frame, the driving wheel and its axle mounted therein, a driving gear on the axle, the platform frame pivoted to the main frame in rear thereof, a tilting device to rock the platform frame on its pivotal connections with the main frame, the swinging reel frame mounted on the platform frame, the reel shaft carried in the reel frame, a lever connected with the reel frame to swing the latter, a box pivoted concentrically on the axle of the driving gear, and a shaft journalled in said box, and having pinions meshing with the gear on the axle, and with the gear on the reel shaft, substantially as and for the purpose specified. 5th. The combination, with the main frame, of the platform and tongue frames, pivoted thereto respectively in the rear and front thereof, the swinging reel frame mounted on the platform frame, the reel shaft mounted therein, a gear thereon, a yoke or box pivoted on the reel frame, a driving gear mounted on the axle of the driving wheel, a box pivoted concentrically with the driving gear, an intermediate shaft mounted in the box, and sliding longitudinally in the yoke on the reel frame, and driving pinions on the intermediate shaft, substantially as and for the purpose specified. 6th. The combination with the platform frame of the wind board pivoted to the rear longitudinal sill thereof, on pivots so arranged that when rocked downwardly to form an extension of the horizontal platform, its surface is below that of the horizontal conveyor, substantially as and for the purpose specified. 7th. The combination with the angle iron finger beam, the platform boards secured at their front ends to a strip of sheet metal supported between the guards and the angle iron finger beam, substantially as and for the purpose specified. 8th. The combination with the horizontal conveyor and the driving roller therefor, at the stubble side of the machine, of the platform dropped lower immediately beneath the said roller than at the other portion of the platform, substantially as and for the purpose specified. 9th. The combination of the horizontal bar conveyor and the driving roller therefor, at the stubble side of the machine, the angle iron finger beam, the platform board, secured to a strip of sheet metal fastened to the angle iron finger beam, and a curved block interposed between the strip of sheet metal and the angle iron finger beam, beneath the driving roller of the horizontal conveyor, substantially as and for the purpose specified. 10th. The combination of the horizontal conveyor, the elevated binder platform substantially parallel thereto, curved yielding strips bridging the space between the horizontal conveyor and binding platform, an overlying elevating and packing mechanism to deliver the grain from the horizontal conveyor to the binding platform, and curved yielding float rods overlying the table up which the crop is conveyed to the binders, substantially as and for the purpose specified. 11th. The combination of the horizontal conveyor, the elevated binder platform substantially parallel thereto, curved yielding strips bridging the space between the horizontal conveyor and the elevated binder platform, a rotary overhanging packer, curved yielding float rods extending grainwardly around the packer and then up the incline, and adapted to guide the crop to the binding platform, and to strip the grain from the packer, substantially as and for the purpose specified. 12th. The combination of the horizontal conveyor, the elevated binder platform, the rotary packer interposed between the binder platform and the horizontal conveyor, and adapted to convey the grain from the latter to the former, and composed of rake heads pivoted in radial arms secured to a revolving shaft, said rake heads provided with crank arms, yielding float rods extending grainwardly around the packer and then upwardly to guide the crop against the tripping arm, a tripping arm against which the crop is forced by the rotary packer, a swinging cam pivoted concentrically on the packer shaft, under which the crank arms secured to the rake heads pass, a needle arm shaft, a crank arm thereon, and a link connecting the crank arm and the swinging cam, whereby the starting of the binder swings the cam on its pivot to stop the action of the packer in bringing the grain to the binder during the binding operation, and the float rods are adapted to yield to accommodate the accumulation of the crop during the binding operation, as specified. 13th. The combination with the packer and its controlling cam, mounted on the platform frame, of the sliding binding mechanism, and a link connected to the cam, and having a sliding connection with the binding mechanism, substantially as and for the purpose specified. 14th. The combination of the horizontal conveyor, the binding platform, the rotary packer and elevator interposed between the binding platform and the horizontal conveyor, and the rake heads pivoted in radial arms secured to a revolving shaft, crank arms on the rake heads, a swinging cam under which the crank arms pass to determine the operation of the packers, curved yielding strips bridging the space between the horizontal conveyor and the binding platform, and a link connected with the binding mechanism

to operate the swinging cam, substantially as and for the purpose specified. 15th. The combination of the rotary packer, composed essentially of rake heads pivoted to the ends of spider arms secured to a revolving shaft supported from the platform frame, the crank arms secured to the pivoted rake heads, a swinging cam pivoted concentrically on the revolving shaft of the packer, a sliding binding mechanism and a link having a sliding connection with the binder operating mechanism and the swinging cam, substantially as and for the purpose specified. 16th. The combination of the front longitudinal sill, the reel post secured thereto, and the rotary packer and feeder suspended from the reel post, substantially as and for the purpose specified. 17th. The combination of the front longitudinal sill, the vertical reel post secured thereto, an elliptical brace rod supported at its lower end from the front longitudinal sill, extending thence diagonally upwards, surrounding and bolted to the reel post at about the middle of its length, a box secured to the upper end of the brace rod, and the swinging reel frame journalled to the vertical reel post and in the box on the upper end of the brace rod, substantially as and for the purpose specified. 18th. The combination, with the horizontal conveyor and the elevated binding receptacle, of a rotary packer and elevator adapted to convey the crop from the horizontal conveyor to the binding platform, the tripping arm overhanging the binding platform, and the float rods adapted to hold the grain upon the incline upon which the crop is conveyed, and to guide the crop against the tripping arm, and the curved yielding strips bridging the space between the horizontal conveyor and the elevated binding platform, substantially as and for the purpose specified. 19th. The combination, with the horizontal conveyor and the driving roller therefor, at the stubble side of the machine, of the platform dropped lower immediately beneath the said roller that at its other portion, the longitudinal sill of the platform frame, and diagonal braces secured to the sills and to each other at the centre of the platform, substantially as and for the purpose specified. 20th. The combination of the binding platform, the binding apparatus and the tripping arm overhanging the binder platform, the horizontal conveyor, the yielding strips bridging the space between the horizontal conveyor and the binding platform, the rotary packer mounted on the platform frame, and the eccentric yielding float rods between which and the yielding strips, the teeth of the rotary packer are projected to convey the crop to the binding receptacle and beneath the tripping arm, substantially as and for the purpose specified.

No. 40,342. Washing Machine. (*Machine à blanchir.*)

James Taylor, Toledo, Ohio, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. A tub, a clasp secured on the exterior thereof and having looped bands on its outer face, a leg removably inserted through said bands from below, and a hook secured on the inner face of the leg and taking under the chine of the tub, the angle of the hook having a pin, as and for the purpose set forth. 2nd. A tub, a plate secured on its cover and having an upturned lip, a stationary bearing having two boxes, a dasher shaft journalled through the plate and in one box of this bearing and having a driving gear, a second bearing having a depending lug adjustably connected with said lip, this bearing also having a shoulder, a horizontal rock shaft journalled in the second box of the stationary bearing and in the adjustable bearing, and an operating gear on the rock shaft meshing with said driving gear, the shoulder bearing against the back of the operating gear, as and for the purpose set forth. 3rd. A tub, a plate secured on its cover and having an upturned lip at one edge, a stationary bearing on said cover, a dasher shaft journalled through the plate and in said bearing and having a driving gear above the cover, an L-shaped bearing having its foot adjustably secured to the cover, threaded connections between said lip and bearing for drawing the latter toward the shaft, a rock shaft carried at the upper end of the stationary and adjustable bearings, and an operating gear on this shaft meshing with the driving gear, substantially as described. 4th. A gear wheel having tapered journals, with hole through hub of the gear wheel, having bolt or key passing through said gear, adjustably arranged to take up the wear on the journals by drawing the boxes together upon hub of said gear wheel.

No. 40,343. Device for Holding the Globe in Tubular Lanterns. (*Appareil pour tenir les cheminées dans les lanternes tubulaires.*)

George Lorenzo Flower, Belleville, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—1st. The combination of a perforated plate A with wire guards B and B¹, and with metallic clips D and D¹, hinged or otherwise attached to the upper parts of the said guards B and B¹, substantially as and for the purpose set forth. 2nd. The combination of a perforated plate A with wire guards B and B¹, and with metallic clips D and D¹ hinged or otherwise attached to the upper parts of the guards B and B¹, and with projecting lugs C and C¹ resting against and touching the globe, substantially as and for the purpose set forth.

No. 40,344. Lock for Bags. (*Serrure pour sacs.*)

Hector McKinnon, Eureka, California, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. In a lock, an elongated casing having a series of receiving openings in one edge or side thereof, oppositely working spring actuated bolt plates working within said casing and having a series of corresponding locking openings, operating stems secured to the inner ends of said bolt plates and projecting through the top of the casing, and an intermediate locking device between the inner ends of said plates, substantially as set forth. 2nd. In a lock, the casing having a series of catch receiving openings in one side thereof, an oscillating disc pivotally secured within the casing and provided with a limit notch working over a projecting stop, oppositely working spring actuated bolt plates secured at their inner ends to said disc and provided with a locking flange having a series of locking openings corresponding to the casing operating stems secured to said bolt plates, and a catch bar, substantially as set forth. 4th. In a lock, the combination of a casing having a series of catch receiving openings in one side, oppositely working spring actuated bolt plates having locking openings corresponding to the casing openings, a catch bar, an oscillating disc connected to the inner ends of said bolt plates, and a locking device arranged above said disc between said inner ends of the plates, substantially as set forth. 5th. In a lock, the combination of a casing having a series of catch openings, oppositely working spring actuated bolt plates having locking openings, a catch bar and a bolt plate locking and unlocking plate centrally located within the lock casing between the inner ends of said bolt plates and adapted to be locked against the same or locked out of the path of the movement of said plates, substantially as set forth. 6th. In a lock, a casing having a series of catch receiving openings, oppositely working bolt plates having locking openings, a catch bar, a locking plate working between the inner ends of said bolt plates and provided with a locking stud or pin, and a series of spring actuated locking tumblers working over said locking plate and engaging said locking stud or pin, substantially as set forth. 7th. In a lock, a casing having a series of catch receiving openings, oppositely working bolt plates having locking openings, a flanged catch bar, a locking plate having slots working over pins projecting within the casing between the inner ends of said bolt plates, a centrally disposed locking stud or pin and an operating notch in one edge thereof, and a series of spring actuated tumblers pivotally mounted upon one of said casing pins and provided with opposite locking openings, adapted to receive said locking stud or pin, and communicating slots between said openings to allow said locking stud or pin to pass from one locking opening to another, substantially as set forth.

No. 40,345. Boot and Shoe. (*Chaussures.*)

George L. Williams, Milton, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—1st. A boot or shoe, having outer side overlap B, the bellows tongue *c*, and the inner tongue D, continuously attached together, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in a boot or shoe, having overlap B, the lace I attached to said overlap, as at *b*, the eyelet H, one or more hooks *a*, and the lace fastener E, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of a boot or shoe, with the fastener E, constructed with a projecting curvature *e*, stitching bar *m*, and the raised and partially detached bar K, substantially as and for the purpose hereinbefore set forth.

No. 40,346. Surface Printing Plate.

(*Plaque pour impression de surface.*)

John Mullaly and Lothrop Lamb Bullock, both of New York, State of New York, U.S.A., 14th September, 1892; 6 years.

Claim. The herein described plate for use in surface printing having a surface of aluminium on which any suitable design has been placed, substantially as described.

No. 40,347. Adjustable Book Shelving.

(*Rayon pour livres.*)

George Stikeman, Brooklyn, New York, U.S.A., 14th September, 1892; 6 years.

Claim. 1st. An adjustable shelf structure comprising the upright posts C, C, having upturned teeth or hooks on their edges, the self supporting brackets B, B, consisting of metallic plates having their lower horizontal edges flanged to receive the shelves and having each two vertically aligned laterally projecting pins *a*, *a*, at or near its rear edge, said pins being parallel with the line of shelves and adapted to enter said hooks, substantially as described. 2nd. The posts C, formed each of two T-shaped iron plates *d*, *d*, and two plates *c*, *c*, secured between and bolted to said T-plates, said posts being formed with upturned teeth or hooks to support shelf brackets, in combination with the self supporting brackets B, B, consisting of metallic plates having their lower horizontal edges flanged to receive the shelves and having each two vertically aligned laterally projecting

pins *a*, *a*, at or near its rear edge, which are designed and adapted to enter the teeth or hooks of the posts C, C, substantially as described. 3rd. In a self supporting structure, the self supporting posts C, consisting of the T-plates *d*, *d*, and the plates *c*, *c*, secured between the plates *d*, *d*, and the plates *c*, *c*, being formed with upturned teeth or hooks, substantially as described.

No. 40,348. Halter. (*Licou.*)

Harry W. Sisson, Toronto, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—The improved halter described, consisting of the two-part adjustable throat piece, the cheeks adjustably connected therewith, and having loops at the lower end connected with each other, the nose band adapted to bear upon the nostrils below the bridge of the nose and passed loosely through the loops of the cheeks, and the divided chin tug independent of the nose band connected with the throat piece and having loops at their forward ends, the ends of the nose band being passed loosely through said loops united adjustably and the free end provided with a ring, substantially as and for the purpose specified.

No. 40,349. Wash Board. (*Planche à savonner.*)

Mary C. Burke, Montpelier, Idaho, U. S. A., 14th September, 1892; 6 years.

Claim.—As an improved article of manufacture, the herein described wash board, having the rubbing surface formed by the flexible wire chain fabric, substantially as set forth, stretched within the frame of the wash board and secured thereto at its four sides, the fabric being relatively mounted above the bottom plane of the wash board, so that the entire fabric is unsupported as the back, whereby the connected links composing the flexible metallic fabric are adapted to individually move under pressure of the articles of clothing rubbed against the same in the operation of washing, while the fabric as an entirety offers flexible resistance against pressure inwardly in the operation of washing, substantially as set forth.

No. 40,350. Drainage Trap for Steam Pipes.

(*Purge d'épuisement pour tuyaux de vapeur.*)

Edward Ethel Gold, New York, State of New York, U. S. A., 14th September, 1892; 6 years.

Claim.—1st. A steam drainage trap consisting of a body or casing having an opening through it, and formed with a seat, combined with a valve arranged to close outwardly against said seat under an internal steam pressure, and a counterweighted stem attached to said valve and projecting laterally therefrom, with its centre of gravity arranged sufficiently to one side to impart to the valve a tendency to open by tilting on its seat, whereby upon being relieved of pressure it automatically tilts open and drains out the water of condensation. 2nd. A steam drainage trap consisting of a plug or body having an opening through it, a seat at its inner end, a valve arranged to close outwardly against said seat, and a counterweighted stem, projecting fixedly from said valve, passing through the opening, and a sufficient weight and projecting sufficiently to one side of the valve, to impart to the valve a tendency to open by tilting on its seat. 3rd. A stem drainage trap, consisting of a body or casing having an opening through it, a seat at its inner end, a valve arranged to close outwardly against said seat, and having a stem passing through said opening, and a baffle disc mounted on said stem outside of said opening in the path of an issuing current of steam, whereby the weight of said disk and stem imparts to the valve a tendency to open, while the impact of steam against the disc contributes a tendency to close the valve. 4th. A steam drainage trap consisting of a body or casing having an opening through it, made tapering and smaller at the inner end, a seat at the inner end of said opening, a valve arranged to close outwardly against said seat and having a stem passing through said opening and nearly filling the smaller end thereof, whereby it guides the valve relatively to the seat, and said stem made of sufficient weight and projecting laterally sufficiently to one side of the valve to throw the valve open on the relief internal pressure against it. 5th. A steam drainage trap consisting of a plug or body having an opening through it in lateral direction and formed at its inner end with an inclined seat, combined with a valve arranged to close outwardly against said seat, and having a counterweighted stem passing through said opening, with its centre of gravity sufficiently to one side of the valve to impart to the valve a tendency to open by tilting on its seat. 6th. A steam drainage trap consisting of a plug or body having an opening through it in lateral direction and formed at its inner end with an inclined seat at an inward inclination from the vertical, combined with a valve arranged to close outwardly against said seat, and having a counterweighted stem passing through said opening, with its centre of gravity sufficiently to one side of the valve to impart to the valve a tendency to open by tilting on its seat, whereby the valve when closed by internal pressure tilts past the vertical, and its stem is thrown upwardly to an inclination above the horizontal, thus securing a maximum opening when opened. 7th. A steam drainage trap consisting of a plug or body having a conical opening through it in lateral direction, smaller at the inner end, an enlarged head at the outer end of said plug with a recess within it, a seat formed on the inner end of the plug, a valve arranged to close outwardly against said seat and formed with a stem passing through said opening, and a baffle disc mounted on the outer end of said stem and arranged within said recess so that it is protected thereby. 8th. A steam drainage trap consisting of a plug or body having a horizontal opening through it, a seat at its inner end, a valve arranged to close outwardly against said seat, a counterweighted stem projected laterally through said opening and arranged to impart to said valve a tendency to open, and a cup-shaped strainer fastened to the inner end of said body and inclosing the valve.

No. 40,351. Dash Board. (*Garde-crotte.*)

Philo M. Barnes, Alexander Clark and John H. Clark, all of Lockport, New York, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. In a dash or fender, the combination of an interior supporting frame consisting of a base portion 1, two upright portions 2, a horizontal cross bar 3, and upright supporting bars 4, having a covering of wood fibre, or its equivalent, on one side a covering of sheet metal on the opposite side, having its edges overlap the edges of the wood fibre, and a coating of baking japan over the whole, substantially as described. 2nd. In a dash or fender, the combination of an interior supporting frame consisting of the base portion 1, and two upright portions 2, all formed in one piece of metal, and a horizontal cross piece 3 and upright bars 4, a sheet metal covering inclosing a non-conducting material on the inside, and an outside covering of baking japan, substantially as described.

No. 40,352. Carpet Sweeper.

(*Balai mecanique pour tapis.*)

Jacob Warren Roop, Harrisburg, assignee of Joseph Oscar Boggs, Fayettsville, all of Pennsylvania, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. In combination with a sweeper, a supplemental brush and means for giving it vertical movement into and out of contact with the surface to be swept. 2nd. A sweeper consisting of a suitable casing, a main rotating brush and a vertically movable supplemental brush arranged in advance of the main brush and held normally out of contact with the surface to be swept, substantially as described. 3rd. A sweeper consisting of a suitable casing, a rotary brush supported in yielding bearings, means for rotating said brush, a supplemental brush vertically movable, held normally above the surface to be swept, and a handle for depressing the supplemental brush in its movement in one direction, and for applying pressure to the main brush in its movement in the opposite direction, substantially as described. 4th. A sweeper consisting of a suitable casing, a main brush with means for rotating the same, a supplemental brush, a spring for holding said brush normally above the surface of the floor, a lever connecting the said brush and means for operating said lever to depress the brush, substantially as described. 5th. In combination with a suitable casing, a main brush supported in yielding bearings, an axially moveable handle provided with a cam or finger, and intermediate means between said cam and brush whereby pressure may be applied to said brush, substantially as described. 6th. In a sweeper, a casing and a main rotating brush, in combination with a supplemental brush outside the frame or casing, a lever connected therewith, and an axially movable handle for engaging the lever, substantially as described. 7th. In combination with a suitable casing, a rotary brush having yielding bearings, a supplemental brush and a lever for operating the same, and an axially movable handle provided with a cam or finger on its lower end, said finger in the movement of the handle in one direction, operating to apply pressure to the main brush, and in the main movement in the other direction to apply pressure to the supplemental brush, substantially as described. 8th. In combination with a suitable casing and a rotary brush, within the same, supplemental side brushes extending parallel to the sides of the casing mounted on spindles having their bearings in pivoted arms, the said spindles being provided with friction discs adapted to engage with the forward wheels of the sweeper and thus drive the side brushes, substantially as described. 9th. In combination with the casing, a main brush, a supplemental brush held normally above the floor, means for depressing the same, pivoted arms on the sides of the casing carrying side brushes, the said brushes being driven by contact with the front wheels, and a rod carried by the front brush adapted to depress in the depression of the said brush, the arms carrying the side brushes, substantially as described. 10th. In combination with a suitable casing, a main brush within the same, a supplemental brush arranged in advance of the main brush, and independent tufts connected to the ends of the said supplemental brush, at each end thereof, substantially as described. 11th. In a sweeper, the casing, a rotating brush within the same, and a supplemental brush arranged in front of the casing and extending beyond the line thereof, substantially as described. 12th. An attachment for sweepers consisting of an elongated brush with operating means, and means for connecting it to the sweeper, whereby it is adapted to be given vertical movement into or out of contact with the surface to be swept, substantially as described. 13th. In combination with a sweeper, an attachment therefor consisting of a supplemental brush, a casting for attachment to the casing of the sweeper, and an interposed spring connection between the casting and the supplemental brush, substantially as described.

No. 40,353. Apparatus for Burning Liquid Fuel.

(*Foyer à combustible liquide.*)

Warren Mar Abbott and Harvey Klapp Flagler, both of Boston, Massachusetts, U.S.A , 14th September, 1892; 6 years.

Claim.—1st. A burner for liquid fuel comprising means for holding oil and a chemical solution, a nozzle or burner, means for conducting the oil and chemical solution to the burner, and a conduit for steam leading to the burner or burner casing, all as and for the purposes hereinbefore set forth. 2nd. The combination, with a burner for liquid fuel comprising a chamber or conduit terminating in a burner and a steam injecting nozzle therein, of a reservoir adapted to contain a mixture of oil and a chemical solution, a connection between said reservoir and the casing of the burner, and an agitating or stirring device in said reservoir, whereby the oil and the chemical solution are kept mixed, as set forth. 3rd. The combination of the atomizing burner, tank connected by a pipe or tube therewith, means for heating said tank and its contents, and an agitating device in said tank, as set forth.

No. 40,354. Window Blind. (*Store de fenêtre.*)

William G. Brown and George Manewal, both of Bucklin, Missouri, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. An improved window blind having one of its stiles provided with a right angular recess, a longitudinal projection on said stile, and provided with tenon holes, a slat operator located and operating in said recess, the same answering as a device for operating the slats, substantially as set forth. 2nd. An improved window blind having one stile provided with a right angular recess, a slat operator located and operating in said recess, and a cleat adapted to be secured to the stile and over the slat operator and other parts, substantially as set forth. 3rd. An improved window blind having one of its stiles provided with a right angular recess, a slat operator located and movable in said recess, a connecting link connecting said slats and said slat operator, provided with a suitable catch for manipulating said operator, substantially as set forth. 4th. An improved window blind having a slat operator, connecting links, said slat operator and slats connected by said connecting links, transverse slots in said slat operator, and said connecting links secured in said slots, substantially as set forth.

No. 40,355. Smoke Consumer. (*Appareil fumivore.*)

George E. Bates, San Francisco, assignee of Frank Lewis Bates, Sacramento, California, U.S.A., 14th September, 1892; 6 years,

Claim.—1st. In a furnace, a smoke consuming attachment consisting of an air shield extending into the furnace to direct the air draft down upon the fuel, and a slotted shaft or bar through which the air shield passes, whereby it is supported and may be adjusted forward and back, substantially as herein described. 2nd. In a furnace, the smoke consuming attachment consisting of the air shield extending into the furnace to direct the draft of air upon the fuel, the slotted shaft or bar through which the air shield passes, whereby it is supported and may be adjusted forward and back, and the removable pin adapted to be dropped through any of a series of holes in the shield for holding said shield in the position to which it is adjusted, substantially as herein described. 3rd. In a furnace, the adjustable smoke consuming attachment consisting of the air shield passing into the furnace for directing the draft of air upon the fuel, the slotted rock shaft through which the air shield passes, whereby it is supported and may be adjusted forward and back, and means for adjusting said shaft axially to raise or lower the shield, substantially as herein described. 4th. In a furnace, the adjustable smoke consuming attachment consisting of the air shield passing into the furnace for directing the draft of air upon the fuel, the slotted rock shaft through which the air shield passes, whereby it is supported and may be adjusted forward and back, the arm of the rock shaft, and the set screw of the arm for adjusting said shaft axially to raise or lower the shield, substantially as herein described. 5th. In a furnace, and in combination with its fire door, having the air door, the shaft or bar mounted in bearings on the door casing above the air door and having a slot through it, and the air shield passing through the slot of said rock shaft and extending into the furnace, whereby said shield is supported and is adjutsable forward or back, substantially as herein described. 6th. In combination with the fire door of a furnace having the air door, the slotted rock shaft mounted in bearings on the door casing above the air door, the arm and set screw whereby said shaft is adjusted axially, the air shield passing through the slotted shaft and extending into the furnace and adjustable forward and back in said shaft, and the removable pin fitting through holes in the shield for holding it in place, substantially as herein described. 7th. In combination with the fire door of a furnace having the air door, the vertically movable draft regulating plate I fitted behind the door and adapted to regulate the air opening, substantially as herein described.

No. 40,356. Mechanical Stoker.

(*Appareil d'alimentation pour fournaises.*)

Richard Harley Williamson, Ashton Under Lyne, County of Lancaster, England, 14th September, 1892; 6 years.

Claim.—1st. A mechanical stoker, consisting essentially of an archimedian screw working in a tube for conveying the coal into the furnace, and an adjustable vibrating shoot for shaking out the coal into the conveying tube, substantially as hereinbefore described. 2nd. In a mechanical stoker, as set forth, in Claim No. 1, the box *e* at the end of the conveying tube, provided with a hinged bottom for closing the entrance to the furnace during temporary stoppage. 3rd. In a mechanical stoker, the use of an archimedian screw rotating in a tube, disemboguing beneath the burning fuel, substantially as and for the purpose hereinbefore set forth.

No. 40,357. Vehicle. (*Voiture.*)

Henry Seeman, Durham, North Carolina, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. In a vehicle, the combination, with a front axle, a rear axle, a bolster pivoted to the front axle, and two parallel side bars, of two spring bars secured on the side bars near their centres, two rock shafts loosely connected by their cranked ends to the ends of these spring bars, two other spring bars clipped by their ends, to the bodies of the rock shafts between the outer spring bars, and a vehicle body held on the inner spring bars near their centre of length, substantially as described. 2nd. In a vehicle, the combination, with a front axle, a rear axle, a bolster, two arched side bars, and two re-enforce plates secured to the side bars and attached by their ends to the axles, of two spring bars, that are upwardly curved and affixed near their centres upon the side bars, two rock shafts having cranks on their ends and clipped by their journalled terminals to the ends of the outer spring bars, two inner spring bars clipped by their ends to the bodies of the rock shafts and a vehicle body having its side parts curved on their lower edges to form rockers, which rest on the inner spring bars and are thereto secured near their centre of length, substantially as described. 3rd. The combination, with a pair of side bars and spring bars secured centrally and longitudinally upon said side bars, of cranked bars suspended at their extremities from the ends of the spring bars, and parallel body supporting springs mounted at their ends on the said cranked bars, substantially as described.

No. 40,358. Waggon Box. (*Boîte de wagon.*)

William McCubbin, Chatham, Ontario, Canada, 14th September, 1892; 6 years.

Claim.—1st. The combination of the sides A of a waggon box, having the under edge shaped B, and the metallic truss C, bolted or riveted to said side A, substantially as and for the purpose heretofore set forth. 2nd. The combination of the sides A of a waggon box, having the under side shaped B, and the metallic truss C, bolted or rivetted to said side A, and the bottom E, having the recesses D, and the cap P, substantially as and for the purpose heretofore set forth.

No. 40,359. Halter. (*Licou.*)

Robert Bruce, Pendleton. Oregon, U.S.A., 14th September, 1892; 6 years.

Claim.—1st. As an improvement in halters, a cord C, passing around a horse's neck, and through an eye I in the crown piece of the head stall, and a ring T at the end of the cord travelling loosely upon its body, said cord passing loosely through the bit ring R, and extending rearwardly, and an operating strap connected to said cord and leading to within reach of the driver, substantially as set forth. 2nd. The combination, with the head stall H, having an eye I in its crown piece and having rings R, connected to the bit, of a ring T between the bit and eye, two cords C, connected at one end to said ring, passing thence through the eye, thence through the ring, and then diverging and leading through the bit rings to the back of the horse's neck, and an operating strap O, detachably connected to the rear ends of said cords, and extending to within reach of the driver, the whole constructed and operating, substantially as hereinbefore set forth.

No. 40,360. Sewing Machine Attachment.

(*Attache pour machines à coudre.*)

Anthony Butler McDowell, Edna, Texas, U.S.A., 15th September, 1892; 6 years.

Claim.—1st. The combination, with the fly wheel A, of the grinding attachment, consisting of the barrel portion *b*, having a central socket B^1, radial spring arms b^2, secured to the barrel and adapted to clamp over the wheel A, and the grinding wheel C, carried by and revolved with the said barrel portion *b*, substantially as and for the purpose described.

No. 40,361. Machine for Making, Repairing and Clearing Roads. (*Machine pour construire, réparer et désobstruer les chemins.*)

George Warner Taft, Kennett Square, Pennsylvania, and Elias L. Lathrop, Fort Wayne, Indiana, both in the U.S.A., 15th September, 1892; 6 years.

Claim.—1st. In a machine for the purpose specified, having its body or carriage frame mounted on front and rear travelling wheels, the combination, with said carriage frame, and the scraper blade, of a reach or draft bar for sustaining the scraper, having its forward end confined and adjustable in a transverse slot in the front end of the carriage frame, and its rear end confined by an eye on a laterally movable supporter connected with the carriage frame, whereby said

reach is laterally adjustable in relation to said carriage frame at both its front and rear ends, and fastenings for retaining the same at positions of adjustment, for the purpose set forth. 2nd. In a machine for the purpose specified, having a body or carrying frame supported at front and rear on wheels, the combination, with said body and the diagonal scraper, of a reach or scraper connecting frame sustained at its ends beneath said body, and provided at an intermediate position in its length with a transverse hinge having a nominally horizontal axis, substantially as and for the purpose set forth. 3rd. In a machine for the purpose specified, the combination, with the diagonal scraper blade and the body or carrying frame mounted on front and rear axles and wheels, of a reach or draft bar, to which said scraper is attached, having its ends supported in connection with the body frame and provided with a hinge in rear of the scraper attachment to permit upward and downward movement of the scraper while the ends of said draft bar remain at a given position in relation to the frame, and means, substantially as described, for raising and depressing the respective ends of the scraper, as set forth. 4th. In a machine for the purpose specified, the combination, of the carrying frame mounted on front and rear axles and wheels, the reach having both of its ends pivotally sustained in connection with said carrying frame and provided with a central horizontal hinge, the scraper connected to said reach by a pivoting axis and provided with a semicircle D^1, the brace L, and guides whereby the front of said semicircle is held in connection with said reach, a fastener or locking bolt arranged thereon for confining the semicircle, and connections for operating said fastener or locking bolt, substantially as set forth. 5th. In a machine for the purpose specified, the combination, of a carrying frame mounted on wheels, an adjustable diagonal scraper having a semicircle attached thereto, a reach bar to which said scraper is pivoted, having a hinge in rear of the scraper pivot, its ends supported in connection with the carrying frame and laterally adjustable thereon, a swing beam pivoted on said carrying frame, and hand wheels and operating gear mounted in bearings on said swing beam, with connections and rods at the respective ends of the scraper for effecting adjustment of the same, all substantially as set forth. 6th. In a machine for the purpose specified, the combination, with the scraper and its carrying frame, having a transverse slot at its forward end, of the reach or scraper draft bar F, its forward end extending through and laterally adjustable in said slot and furnished with a head plate *g*, and means for retaining the head of the reach at different positions of adjustment in relation to the carrying frame, all substantially as and for the purpose set forth. 7th. In a machine for the purpose specified, the combination, substantially as described, of the carrying frame, the longitudinally adjustable rear axle, the laterally adjustable reach F, the diagonal scraper blade pivotally connected to and adjustable with said reach, the traverse guide bar J, the slide I, provided with a loop *i*, that supports the rear end of said reach, the hand wheels shafts C and K, and connecting gear for shifting said slide and rear axle, for the purpose set forth. 8th. In a machine, for the purpose specified, the combination, of the carrying frame mounted on front and rear wheels, the circular traverse track V fixed thereon, the diagonal adjustable scraper blade, the laterally adjustable reach supporting said scraper, the swing beam R, centrally pivoted in the carrying frame and supported on said traverse circle V, the lifting rods N, connecting the scraper with lifting arms, and operating mechanism supported on said swing beam for working said scraper all combined, substantially as and for the purpose set forth. 9th. In a machine, for the purpose specified, in combination, with the diagonal adjustable scraper and its support, substantially as described, the guide bar J fixed to the carrying frame, the slide I mounted on said guide bar, having a toothed rack and a dependent loop *i*, that embraces the tail end F^2, of the scraper support *k*, the pinion shaft K, hand wheel K^1, locking wheel 6, lever 7, all arranged for operation, as and for the purpose set forth. 10th. In a machine, for the purpose specified, the combination, with the scraper blade D, semicircle D^1, reach F, and brace *h*, of the locking bolt M, its spring *m*, actuating cam lever M^1, and handle rod M^2, substantially as described. 11th. In a machine, for the purpose specified, the combination, with the swing beam R, carrying the scraper adjusting gearing, and the traverse circle V fixed to the carrying frame, of the clamping plate *n*, its cam lever X, and connecting bolt n^1, substantially as and for the purpose set forth. 12th. In a machine, for the purpose specified, the combination, with the main carrying frame, and the laterally adjustable reach or draft bar, of the primary scraper blade D, having the semicircle D^1, with downwardly curved ends attached thereto pivotally connected for oblique adjustment, and the auxiliary scraper blade D^5 arranged on said primary scraper blade, and attached thereto by clips 20, and detachably fastening bolts 18, fitted in slots or openings 16 in said blade, said auxiliary blade being longitudinally adjustable for extension at the right or left of said primary blade, all substantially as shown and described. 13th. In a machine, for the purpose specified, the combination, of a carrying frame mounted on wheels, a diagonally and vertically adjustable scraper, a reach to which said scraper is connected supported by and laterally adjustable in relation to the carrying frame at both its front and rear ends, a longitudinally adjustable rear axle, hand wheels and gearing mounted on the rear part of the carriage for effecting adjustment of said reach and axle, and means for holding the parts at different positions, substantially as set forth. 14th. In a machine, for the purpose specified, the combination, with the carrying frame mounted on wheels, of the traverse circle V, fixed on said frame, the laterally adjustable reach, the scraper pivoted to said reach, and scraper operating mechanism supported by a carrier or swing beam that moves on said traverse circle, substantially as set forth.

No. 40,362. Machine for Cutting Staves or Barrel Covers. (*Machine pour découper les douelles ou couvercles de barrils.*)

Jay Wellington Chapman, Detroit, Michigan, U.S.A., 15th September, 1892; 6 years.

Claim. 1st. The combination, in a veneer cutting machine, of the veneer cutting knife made in two sections hinged together in the centre and secured to oscillating knife blocks which vary the angle of the two knives, of straining rollers, one for each section of the knife, substantially as described. 2nd. The oscillating knife blocks J, in combination with the knife bars O, hinged together in the centre and secured at their outer ends upon the oscillating knife blocks, and each carrying one section of the veneer cutting knife, substantially as described. 3rd. The combination, of the oscillating knife blocks with the knife bars O, hinged together at the centre and secured to or integral with the oscillating knife blocks, said knife bars being concave upon the side towards the log and convex upon the reverse side, substantially as described. 4th. The combination, of the oscillating knife blocks, with the knife supporting bars O, integral therewith or secured thereto at their outer ends and hinged at the centre, and of a throat formed between them and adapted for the discharge of the veneer in a downward direction, substantially as described. 5th. The combination, of the oscillating knife blocks, the knife bars O, secured thereto at their outer ends and hinged in the centre, the transverse bars Q^2, adjustably supported upon the knife blocks, and the straining rollers Q, journalled thereon, all substantially as described. 6th. The combination, with the veneer cutting knife made in sections hinged together and secured to oscillating knife blocks, of the cross head upon which the knife blocks are secured, the slots K^1 in the knife blocks, and the pivot pins K, all substantially as described. 7th. The combination, with a veneer cutting knife made in two sections pivotally secured together in the centre and secured to oscillating knife blocks, of the sliding cross head upon which said knife blocks are supported, the rack bar M, sliding in bearings in the cross head, and the links N, connecting said rack bar with the oscillating knife blocks, substantially as described. 8th. The combination, with a veneer cutting knife made in two sections hinged together in the centre, of oscillating knife blocks, to which said knife is secured, the sliding cross head F, upon which they are supported, the rack M, slidingly secured in the centre of the cross head, the links N, the traverse shaft M^2, carrying the pinion M^1, engaging the rack, the segmental rack M^3, and the stationary rack bar M^4, all arranged to operate, substantially as described. 9th. The combination, with a veneer cutting knife made in sections hinged together in the centre, of the oscillating knife blocks J, to which the ends of the knife supporting bars are secured, the cross head actuated by the feed screws, the pin pivotally securing the knife blocks to the cross head and passing through slots in the knife blocks, the sliding rack in the centre of the cross head, the pinion engaging therewith, the transverse shaft upon which said pinion is secured, the gear or gears M^5 on said shaft, and the stationary rack or racks M^4 engaging therewith, all substantially as described. 10th. The combination, with a veneer cutting knife constructed in sections hinged together in the centre, of the dividing knives W in rolling contact with each half of the log, and means substantially as described, for correspondingly changing the angle of the veneer cutting knives and of the dividing knives, substantially as described. 11th. The combination with a veneer cutting knife constructed in sections hinged together in the centre and provided with devices for gradually changing the angle of the knives of the process of cutting substantially as described, of the sliding carriage S, the the shafts V, pivotally connected at their inner ends and supported in pivotal boxes upon the carriage at their outer ends, and the knife frames W, carrying the knives W^1 in rolling contact with the log, substantially as described. 12th. The combination of the sliding carriage S, the shafts V, hinged together at their inner ends and supported in pivoted boxes at their outer ends, the frame W, supported on the shafts V, the knives W^1, secured in these frames, the friction bearings on said frames in rolling contact with the log, and the actuating mechanism for changing the angle of the shafts V, substantially as described. 13. The combination, with the veneer cutting knife constructed in two sections, of a serrated roller for each section of the knife, said roller having an inner portion bearing at or near the centre of the log in advance of the cutting edge of the knife, and an outer portion bearing upon the veneer back of the cutting edge of the knife and adapted to strain said veneer, substantially as described. 14th. The combination with the veneer cutting knife provided with crozing and chamfering cutting edges, of the knife T, secured in yielding bearings and provided with the guides T^4, substantially as described.

No. 40,363. Hydro-carbon Engine. (*Machine à hydro-carbures.*)

George Bailey Brayton, Boston, Massachusetts, U.S.A., 15th September, 1892; 6 years.

Claim. 1st. The combination with a cylinder provided with a valve guarded air inlet, a piston which moves forward while said in-

let is open and then rearward after it is closed, for compressing air thus supplied to the cylinder, of a spraying device within the cylinder, and a pump which forces a charge of liquid fuel through and from said spraying device into said cylinder in a finely divided condition fit for immediate combustion in the presence of compressed air, substantially as set forth. 2nd. In an engine organized to be operated by the combustion of fuel within the cylinder, or in a chamber communicating therewith, the combination of an intermittingly operated oil forcing pump, an oil duct leading to the firing end of the cylinder, and a spraying device which delivers the liquid fuel in a finely divided condition within the firing portion of the cylinder, whereby, as a result of each forcing stroke of the pump, liquid fuel is mechanically sprayed within the firing chamber in a condition for prompt and practically instantaneous combustion, substantially as set forth. 3rd. The combination with the engine cylinder, its piston and an air inlet valve through which air is admitted to the cylinder, of an oil receiving chamber having an outlet into the engine cylinder, a conduit through which compressed air is admitted to said chamber, a conduit through which oil is admitted to said chamber, and a discharge valve applied to said chamber, whereby the charge of oil is blown out of said chamber and delivered into the cylinder by the compressed air upon opening the valve substantially as set forth. 4th. The combination with the engine cylinder having an air inlet and valve, and a piston which moves forward while said inlet is open, and rearward after it is closed for compressing the admitted air, of a spray pipe arranged within the cylinder, an oil receiving chamber communicating with said spray pipe, an oil pump which feeds oil to said chamber, a conduit through which compressed air is supplied to said chamber, and a valve which is opened for permitting the compressed air to drive the oil from said chamber through the spray pipe into the cylinder, substantially as set forth. 5th. The combination, with the engine cylinder, its piston and an air inlet and valve, which is opened during the forward stroke of the piston for admitting the air and closed during the return stroke for compressing the air, of a burner arranged within the cylinder, an oil receiving chamber provided with a discharge valve and with a spray pipe terminating near the burner, an air compressor communicating with said chamber, an oil pump connected with said chamber, and an automatic regulator, whereby variable charges of oil are fed to said chamber, substantially as set forth. 6th. The combination, with the engine cylinder, its piston and an air inlet and valve, of a burner arranged within the cylinder, a chamber having a spray pipe terminating near the burner, an oil pump, and an air pump feeding oil and compressed air to said chamber, and a valve whereby the discharge of oil from said chamber is controlled, substantially as set forth. 7th. The combination, with the engine cylinder, its piston, and the air inlet and valve, which is open during the forward stroke of the piston for admitting air and closed during the return stroke for compressing the air, of a burner arranged within the combustion chamber of the cylinder, a receiving chamber provided with a spray nozzle within the combustion chamber, and oil and air conduits through which oil and air are supplied to said chamber, substantially as set forth. 8th. The combination, with the engine cylinder open at one end, of a piston provided with an air inlet valve, a burner arranged within the cylinder near the closed end thereof, a receiving chamber arranged at the closed end of the cylinder and having a spray nozzle within the cylinder near the burner, conduits for oil and compressed air entering said chamber, and a valve which is opened at intervals for discharging the oil from said chamber, substantially as set forth. 9th. The combination, with the engine cylinder provided at one end with an oil receiving chamber and a spray pipe extending from said chamber into the cylinder, of an exhaust passage through which said spray pipe extends, and an exhaust valve which is seated in said passage and which surrounds said spray pipe, substantially as set forth. 10th. The combination, with the engine cylinder provided at one end with an oil receiving chamber and having a spray pipe extending into the cylinder, of an exhaust passage in which said spray pipe is arranged, an exhaust valve surrounding said spray pipe and seated in said passage, a discharge valve arranged within the oil receiving chamber, and an actuating lever connected with both valves, substantially as set forth. 11th. The combination, with the engine cylinder and the burner arranged therein, of an oil supply pipe extending into the cylinder and provided on one side of the burner with a spray nozzle, and on the opposite side of said burner with a vaporizing shield, substantially as set forth. 12th. The combination, with the hollow base provided with an unobstructed opening through which the external air can freely enter said base, of an engine cylinder connected with its open end to said base, a piston provided with an air inlet and valve through which air is taken from the hollow base into the cylinder, an oil supply conduit and valve arranged at the upper end of the cylinder, and a burner arranged within the cylinder, whereby the open base is ventilated into the engine cylinder, substantially as set forth. 13th. The combination, with the engine cylinder provided with a fuel supply valve and an exhaust valve, of an actuating lever connected with both valves, and a rotating cam and pin whereby said lever is moved three times in succession for every two revolutions of the engine shaft, the first movement opening the exhaust valve partly and discharging the surplus air, the next movement opening the fuel supply valve and the last movement opening the exhaust valve for discharging the products of combustion, substantially as set forth. 14th. A burner composed of a shell provided with an oil and air supply, an absorbent packing arranged in said shell, a perforated plate for holding said packing in place and an incandescent medium for preserving the flame, substantially as set forth. 15th. The combination, with the burner and the passage through which oil is supplied thereto, of a wick arranged in said passage, and an air jet device whereby a spray of oil is delivered on said wick, substantially as set forth. 16th. The combination, with the burner and the passage through which oil is supplied thereto, of a wick arranged in said passage, an oil reservoir, and a blast pipe arranged in said reservoir and provided with inlets through which the oil enters said pipe, substantially as set forth. 17th. The combination, with the burner and the passage through which oil is supplied thereto, of an oil reservoir communicating at its upper end with said passage, a wick arranged at the upper end of said reservoir and entering said passage, a branch passage whereby air is conducted from the upper portion of said reservoir past the wick into the passage leading to the burner, and a blast pipe arranged in the lower portion of the reservoir and provided with inlets for the oil, substantially as set forth.

No. 40,364. Machine for Making Metal Balls.

(Machine pour faire des boules de métal.)

Edward Alfred Jones, Tonawanda, New York, U. S. A., 15th September, 1892; 6 years.

Claim.—1st. The combination, with two discs arranged in line and rotating in opposite directions, of ball forming dies secured to the opposing sides of the discs and provided with curved grooves formed in the opposing flat sides of the dies, substantially as set forth. 2nd. A ball forming die having a curved groove in which the outer side of the groove has a longer radius than the inner side, and flat faces beginning at the front end of the die on both sides of the groove and extending to the rear end of the die, substantially as set forth. 3rd. A ball forming die, having a groove which ascends from the front end of the die to a summit point and descends from said point to the rear end of the die, substantially as set forth. 4th. The combination of two curved dies rotating about the same axis, and each provided with a curved groove in its flat side, one of said dies being provided on its rear portion with side faces which project toward the other die beyond the centre line of the groove, and the other die being provided in its rear portion with correspondingly receding side faces, substantially as set forth. 6th. In a ball forming machine, the combination, with two revolving discs, arranged axially in line, of curved dies secured to said discs, and having their faces arranged about at right angles to the axis of the discs, substantially as set forth. 7th. In a ball forming machine, the combination, with the two revolving discs arranged axially in line, of dies secured to the faces of said discs, and a gauge whereby the inward movement of the blank between the dies is limited, substantially as set forth. 8th. In a ball forming machine, the combination, with the two revolving discs arranged axially in line, of dies secured to the faces of said discs, and a gauge secured to the face of one of said discs opposite the front end of the die, substantially as set forth. 9th. In a ball forming machine, the combination with the main frame, of two revolving discs arranged axially in line and journalled in bearings on the main frame, dies secured to the faces of the discs, and thrust rollers bearing against the rear sides of said discs, substantially as set forth. 10th. In a ball forming machine, the combination with two revolving discs arranged axially in line, of dies secured to the faces of the discs, and a thrust bearing interposed between the faces of the discs, substantially as set forth. 11th. In a ball forming machine, the combination with two revolving discs arranged axially in line, and dies secured to their flat faces, of a cup provided with a threaded shank which enters one of said discs, a follower provided with a threaded shank which enters the disc, and balls interposed between the cup, substantially as set forth. 12th. In a ball forming machine, the combination with the main frame, of two revolving discs arranged axially in line and provided with shafts journalled on the main frame, and thrust bearings engaging with the ends of the shafts, whereby the end thrust of the discs is relieved, substantially as set forth. 13th. In a ball forming machine, the combination with two revolving discs mounted on shafts arranged axially in line and having dies secured to their flat faces, of a main frame in which said shafts are journalled, and thrust bearing composed of brackets extending over the ends of the shafts, screw followers working in said brackets, and balls interposed between said followers, and recessed rests in the end of the shafts, substantially as set forth.

No. 40,365. Machine for Grinding Metal Balls.

(Machine pour polir les boules de métal.)

Edward Alfred Jones, Tonawanda, New York, U.S.A., 15th September, 1892; 6 years.

Claim.—1st. A ball grinding disc having its working face composed of concentric metallic rings and intermediate abrasive fillings arranged between the metallic rings and depressed below the same, thereby forming concentric grooves having metallic sides and abrasive bottoms, substantially as set forth. 2nd. In a ball grinding machine, the combination, with the upper grinding disc, of a lower grinding disc having its upper face provided with annular grooves having metallic sides and abrasive fillings forming the bottoms of the grooves, whereby the balls wear the grooves downwardly into the abrasive fillings and are restrained radially by the metallic sides of

the grooves, substantially as set forth. 3rd. In a disc for ball grinding machines, the combination, with the series of grinding rings provided in their upper sides with annular grooves, and division rings arranged between said grinding rings, of a plate supporting said grinding rings and division rings, and adjusting screws engaging against said plate, whereby the disc is adjusted, substantially as set forth. 4th. In a disc for ball grinding machines, the combination, with the series of grinding rings provided in their upper sides with annular grooves, and division rings arranged between said grinding rings, of a plate supporting said grinding rings and division rings, adjusting screws bearing against said supporting plate, and an annular frame containing said rings and supporting plate, substantially as set forth. 5th. In a ball grinding machine, the combination, with a grinding disc and its support, of a weighted lever pivotally secured to said support and connected with said grinding disc, whereby the latter is moved vertically, substantially as set forth. 6th. The combination, with the movable grinding disc and its supporting frame, of a lever connected with said disc and having fulcra arranged on opposite sides of its connection with said disc, and a weight attached to the lever, substantially as set forth. 7th. The combination, with the movable grinding disc and its supporting frame, of a lever attached to said disc, and a sliding weight arranged on said lever, whereby the leverage is automatically increased or decreased, substantially as set forth. 8th. The combination, with the movable grinding disc and its supporting frame, of a lever connected with said disc and frame near one end, a weight arranged to slide upon the opposite end of said lever, and stops whereby the sliding movement of said weight is limited, substantially as set forth. 9th. The combination with the movable grinding disc, a movable sleeve connected with said disc, and a supporting frame in which said sleeve is guided, of a lever connected with said sleeve, a pivoted support on said frame for one arm of said lever, and a weight arranged on the opposite arm of said lever, substantially as set forth. 10th. The combination with the movable grinding disc, a movable sleeve connected with said disc, and a frame supporting said sleeve, of a lever attached to said sleeve, a pivoted bar to which one arm of said lever is adjustably attached, and a weight arranged on the opposite arm of said lever, substantially as set forth. 11th. The combination with the bed plate, the shaft and the rotating disc secured to said shaft, of a sleeve surrounding said shaft, and provided with a vertical series of openings, an arm secured to said plate, and provided with a collar surrounding said sleeve, a lever pivotally supported by a bolt entering one of the openings in the sleeve, an adjusting bar pivotally supported on said arm, a bolt capable of adjustment in said bar, and adapted to serve as a fulcrum for the lever on one side of the sleeve, a pin or roller attached to the arm and adapted to serve as a fulcrum for the lever on the opposite side of the sleeve, and a weight attached to said lever, substantially as set forth.

No. 40,366. Toy. (*Jouet.*)

Waldo V. Snyder, Canton, Ohio, U.S.A., 15th September, 1892; 6 years.

Claim.—1st. The combination of the travelling platform A, mounted on wheels, the posts or standards B and C, the body D, the pitman H, the crank I, and means for communicating motion to the legs b, b^1, substantially as and for the purpose specified. 2nd. The combination of the platform A, a hollow post or standard C, located over the crank I, the pitman H, the crank I, the bell crank G, the arms c, c^1, and the wires or bars e, substantially as and for the purpose specified. 3rd. The combination of the body D, the centre band J, and the bars E, substantially as and for the purpose specified. 4th. The combination of the body D, the centre band J, the bars E, and means for communicating motion to the legs b, and b^1, substantially as and for the purpose specified. 5th. The combination of the body D, the centre band J, having fixed thereto the strips h, substantially as and for the purpose specified.

No. 40,367. Machines for Pressing and Blowing Glassware. (*Machine pour le pressage et soufflage de la verrerie.*)

Evan Jones and John Abram Jones, both of Pittsburg, Pennsylvania, U.S.A., 15th September, 1892; 6 years.

Claim.—1st. The combination of a glass blow mold, a hollow press mold insertible within the cavity of the blow mold, and a plunger insertible within the cavity of the press mold to form therein a hollow article within the limits of the cavity of the blow mold, said plunger having a hollow stem for the introduction of air to expand the pressed glass article without removal of the plunger, substantially as and for the purposes described. 2nd. The combination of the blow mold d, an insertible and removable press mold, and a plunger having a hollow stem and a movable end adapted to close the passage through said stem, substantially as and for the purposes described. 3rd. The combination of the glass mold d, former m, n, removable mold bottom q, slide r, and plunger g^1, with the levers h, h^1 and h^2 for operating the same, substantially as described. 4th. The combination of the former m, n, capable of a vertical movement, the hollow plunger rod g, capable of connection with an air supply, the plunger g, capable of motion relatively to the rod so as to close it when depressed, and the glass mold d, together with the levers for operating the moving parts, the movable bottom q, and the slide r for bringing either the former or the mold bottom in the vertical line of the axis of the mold, substantially as described

No. 40,368. Dovetail Joint Closing Machine.

(*Machine d'assemblage à fermeture de joint.*)

Albert T. Linderman, Whitehall, Michigan, U.S.A., 15th September, 1892; 6 years.

Claim.—1st. A machine for closing together lumber which is provided with interfitting dovetail joints upon its edges, having the following elements:—a table for the receiving and incoming lumber, a pusher for driving the incoming into the receiving stock, a guide fence alongside the pusher's travel for regulating the position of the incoming piece, and adjustable follower block to support the end of the receiving stock against the push of the incoming piece, and gages to regulate the position of the receiving stock when it is pressed against them, which gages are so arranged as to recede from before the incoming stock as it is driven home, substantially as specified. 2nd. In a dovetail joint closing machine, the combination, with a reciprocating pusher for driving the stock and an adjustable guide fence alongside the pusher's travel to regulate the position of the incoming stock, of two sets of devices at opposite sides of the table, each of which sets of devices consists of an adjustable follower block to support the end of the receiving stock against the push of the incoming stock, and gages to regulate the position of the receiving stock, so arranged to recede from before the incoming stock as it is driven home, substantially as set forth. 3rd. The combination, with the table for the receiving and incoming lumber, a guide fence, a stop for the receiving lumber to resist the push of the incoming piece, and receding gages to regulate the position of the receiving lumber, of a gluing device for applying liquid glue to the edge of the incoming piece as it is driven into the receiving piece, substantially as set forth. 4th. In a machine for closing dovetail tenon joints, the combination, with a table for the receiving and incoming lumber, a stop for the receiving lumber, receding gages to regulate the position of the receiving piece, and a gluing device for spreading liquid glue from a glue pan underneath upon the edge of the incoming piece while in transit, of a waste glue spout opposite the gluing device recessed in the table top, and a pusher for driving the incoming stock having overhanging ends, whereby the stock is driven home without interference to the waste glue spout, substantially as shown and described. 5th. In a machine for closing dovetail tenon joints, the combination, with the table for the lumber, a guide fence and a reciprocating pusher having overhanging driving ends, of two sets of devices at opposite sides of the table, each set consisting of a gluing device, a stop block for the receiving lumber, pendent sidewise yielding gages, and a trough recessed in the table for the waste glue, as and for the purposes set forth. 6th. In a machine for closing dovetail tenon joints, the combination, with a table for the receiving and incoming lumber, a guide for the incoming lumber, and a gluing device, of the bar n above the table, and gage pins m pivotally attached to the bar to gage the position of the receiving lumber and recede successively before the incoming lumber, substantially as specified. 7th. The combination, with a table for the receiving and incoming lumber, a guide fence, a gluing device, a pusher for the incoming piece of lumber, and a stop for the receiving lumber to resist the push of the incoming piece, of gages pivotally arranged above the table to regulate the position of the receiving lumber and to yield sidewise before the incoming piece, substantially as set forth. 8th. The machine for closing dovetail joints, consisting essentially of a pusher reciprocating along a table for supporting the material to be joined, and adapted to drive the incoming stock, and a stop for holding the other portion of the stock against the push of the incoming stock, in combination with said table, and separate devices for positioning both parts of the stock preparatory to uniting them, substantially as set forth. 9th. In a machine for uniting tongued and grooved lumber, the combination, with a table for supporting the material to be joined, and a power driven pusher reciprocating along such table and acting to drive the incoming stock, of one or more gauges for positioning the receiving stock, such gauges being located in the path of and adapted to be moved out of the way by the incoming stock, and a holding device for the receiving stock, substantially as specified. 10th. In a machine for uniting tongued and grooved lumber, the combination of a table for supporting the material to be joined, a reciprocating pusher for driving the incoming stock moving along said table, and a fence against which the incoming stock is positioned, with a stop for holding the receiving stock against the push of the incoming stock, and a gauge or gauges against which the receiving stock is positioned, substantially as set forth. 11th. In a machine for uniting tongued and grooved lumber, the combination with a table for supporting the material, a reciprocating pusher moving along said table and adapted to drive the incoming stock into the receiving stock by a lengthwise sliding movement, and a stop for holding the receiving stock of a brush wheel located essentially as shown and adapted to apply glue to the edge of the moving stock as it enters the receiving stock, substantially as specified. 12th. The combination, in a machine of this character, with a reciprocating pusher adapted to drive the incoming stock in both directions, and a table for supporting the material, said pusher moving along over said table, of a stop at each side of said pusher for holding the receiving stock against the push of the incoming stock, substantially as set forth.

No 40,369. Steam Engine. (*Machine à vapeur.*)

Elmer Stillman Smith, Bound Brook, New Jersey, U. S. A., 15th September, 1892; 6 years.

Claim.—1st. The combination, with the case having the form of a spherical segment and the similarly shaped piston filling the case partially, of a follower pin arranged in the case and bearing centrally against the piston, and an adjusting screw having a swivelling connection with the follower pin, substantially as set forth. 2nd. The combination, with the case having the form of a spherical segment, and the similarly shaped piston filling the case partially, of a hollow central follower pin provided at its outer end with a notched hub, and an adjusting screw arranged in the case, and having a reduced neck which engages in the notch of the hub, substantially as set forth. 3rd. The combination, with the case having the form of a spherical segment, and the similarly shaped piston filling the case partially, of a division plate or abutment consisting of a main, portion having a pivotal or rocking connection with the case, and a wing connected with the main portion by a flexible joint and entering a pocket in the piston, substantially as set forth. 4th. The combination with the case having the form of a spherical segment, and the similarly shaped piston filling the case partially, of a rigid division plate having a pivotal or rocking connection with the case, and jointed division plates composed of a main part and a wing connected by a flexible joint, substantially as set forth. 5th. The combination, with the spherical case and the spherical piston, of a jointed division plate consisting of a main part and a wing connected by a tapering knuckle and socket, substantially as set forth. 6th. The combination, with the spherical case and the spherical piston, of a jointed division plate consisting of a main part and a wing connected by a flexible joint, and a packing composed of a curved strip applied to the peripheral edge of the main part and a cross bar applied to the wing, substantially as set forth. 7th. The combination, with the spherical case and the spherical piston, of a division plate provided with a conical knuckle seated in a similarly shaped recess in the case, substantially as set forth. 8th. The combination, with the case having the form of a spherical segment, of a division plate having at one end a pivotal or rocking connection with the case and having its sides converging toward the centre thereof, and a spherical piston filling the case partially and provided with a pocket receiving the free end of the division plate and having converging sides which fit against the converging sides of the division plate, substantially as set forth. 9th. The combination, with the spherical case and the spherical piston, of a division plate capable of radial movement in the case and a spring, whereby the plate is pressed inwardly, substantially as set forth. 10th. The combination, with the spherical case and the spherical piston, of a division plate provided with a tapering knuckle which is loosely seated in a similarly shaped socket in the case, and a spring arranged in the case and bearing against the outer end of the knuckle, substantially as set forth. 11th. The combination, with the spherical case and the spherical piston, of a division plate provided with a tapering knuckle which is loosely seated in a similarly shaped socket in the case, a packing strip arranged on the peripheral edge of the plate and provided with an annular enlargement over the knuckle, and a spring arranged in the case and bearing against the knuckle within the annular enlargement of the strip, substantially as set forth. 12th. The combination, with the case having the form of a spherical segment and provided with a circular opening in its crown, of a steam chest attached to the case outside of said opening, a spherical piston provided with a wrist pin rotating in said opening, a crank disc arranged in the steam chest and connected with the wrist pin, a valve whereby the flow of steam from the steam chest to the case is controlled, and an annular packing strip loosely seated in the circular opening of the case and pressed by the steam pressure in the steam chest against the back of the piston, substantially as set forth. 13th. The combination, with the spherical case having an opening in its crown and a steam chest attached to the case outside of said opening, of a wrist pin attached to the piston and projecting through said opening into the steam chest, a crank disc arranged in the steam chest and provided with a socket for the wrist pin, and rollers interposed between the wrist pin and its socket, whereby the steam pressure is equalized around the wrist pin, substantially as set forth. 14th. The combination, with the spherical case, having an opening in its crown, and a steam chest attached to the case outside of said opening, of a wrist pin attached to the piston and projecting through said opening into the steam chest, a crank disc arranged in the steam chest and provided with a spherical socket, a spherical sleeve seated in said socket, and rollers interposed between the sleeve and the wrist pin, substantially as set forch. 15th. The combination, with the spherical case, of a spherical piston provided with a wrist pin, a crank disc provided with a socket for the wrist pin, interposed rollers provided with reduced middle portions, and a notched ring carrying said rollers, substantially as set forth. 16th. The combination, with the spherical case, of a spherical piston provided with a wrist pin, a series of connected rollers arranged between the wrist pin and its socket, and a ball bearing whereby the outward thrust of the rollers is received, substantially as set forth. 17th. The combination, with the spherical case, of a spherical piston provided with a wrist pin, a ring secured around the end of the wrist pin, rollers interposed between the wrist pin and its socket, a ring carrying said rollers, and balls interposed between said ring and the ring secured to the wrist pin, substantially as set forth. 18th. The combination, with the spherical case, of a spherical piston provided with a hollow wrist pin, a valve seated in the piston and provided with a stem extending through the wrist pin and a carrier attached to the crank disc and engaging with the valve stem, substantially as set forth. 19th. The combination, with the spherical case, of a spherical piston provided with a hollow wrist pin, which is connected with the piston by a hollow collar having steam inlet openings, a hollow valve arranged within the piston and having a hollow neck and stem arranged within the collar and wrist pin, the neck of the valve being provided with steam inlet openings, substantially as set forth. 20th. The combination, with the spherical case, the spherical piston provided with a hollow wrist pin and the crank disc, of a main valve seated in the piston and provided with a hollow stem extending through the wrist pin, a carrier attached to the crank disc and rotating the main valve, a cut-off valve arranged in the main valve and provided with a stem extending through the stem of the main valve, and a governor mechanism attached to the crank disc and connected with the stem of the cut-off valve, substantially as set forth. 21st. The combination, with the spherical case and the spherical piston, of a hollow main valve, a cut-off valve arranged in the main valve, and a ball bearing interposed between the stem of the cut-off valve and that of the main valve, substantially as set forth. 22nd. The combination, with the cut-off valve and the crank disc, of governor weights pivoted to the crank disc, springs secured to the crank disc, and adjustable bearing pieces attached to the weights and bearing against the springs, substantially as set ferth. 23rd. The combination, with the cut-off valve and the crank disc, of springs attached to the crank disc, governor weights pivoted to the crank disc, and bearing pieces attached to the weights by pivot bolts passing through slots, and adjusting screws bearing against the bearing pieces, substantially as set forth. 24th. The combination, with the spherical case, the spherical piston arranged obliquely in the case, and the crank disc, of governor weights pivoted to the crank disc, a cut-off valve arranged centrally in the piston, a carrier secured to the stem of the cut-off valve, and links having spherical heads which connect the weights with said carrier, substantially as set forth. 25th. The combination with the spherical case and the steam chest attached thereto, of a main bearing opening into the steam chest, a shaft and a crank disc arranged in the steam chest, and rollers interposed between the shaft and the main bearing, whereby the steam pressure on the shaft is balanced, substantially as set forth. 26th. The combination, with the piston having a cylindrical valve seat, of an open ended cylindrical valve provided on one side with an induction port and having its closed cylindrical portion adjacent to the steam inlet, depressed on the opposite side of the valve, whereby steam pressure is applied against the outer surface of the valve to counteract the steam pressure exerted against the induction side of the valve, substantially as set forth.

No. 40,370. Sash Balance for Windows.

(*Contre-poids de croisée.*)

John Sharp and Robert Harrison Reid, both of Toronto, Ontario, Canada, 15th September, 1892; 6 years.

Claim. 1st. A window sash balance consisting of a spiral formed rod working in a bracket attached to the sash, the spiral formed rod being supported by a bracket at the one end and suitably connected at the other end to a spiral spring having sufficient tension to support the sash, substantially as and for the purpose specified. 2nd. A window sash balance consisting of the spiral formed rod D, the bracket *d* attached to the sash, through which the rod D passes, and the bracket E, in combination with the collar F, secured on the end of the rod, and having a socket in it to receive the square end of the spiral formed rod D, and the spiral spring K having one end fastened to the loop *i* attached to or forming part of the plate I, and the other end secured in the opposite end of the rod G, substantially as and for the purpose specified. 3rd. The spiral spring attached at one end to the rod G, which passes through it, and at the other end to a plate on the sill or head, in combination with the collar F secured on the opposite end of the rod G and having holes made in it for the insertion of the end of the lever for turning the rod G, substantially as and for the purpose specified.

No. 40,371. Combined Liquid Gauge and Tap.

(*Jauge et robinet combinés.*)

John Sharp and Robert Harrison Reid, both of Toronto, Ontario, Canada, 16th September, 1892; 6 years.

Claim. 1st. A tap provided with a double spigot end connected together by a union coupling and washer, and having a hollow socket formed at the top of the tap to receive the bottom end of the gauge tube, which has a graduated scale marked on it, substantially as and for the purpose specified. 2nd. A tap provided with a double spigot end connected together by a union coupling and washer, and having a hollow socket formed at the top of the tap to receive the gauge tube, in combination with a cylindrical casing designed to fit closely around the tube, and provided with a slot, substantially as and for the purpose specified. 3rd. A tap provided with a double spigot end connected together by a union coupling and washer, and having a hollow socket formed at the top of the tap to receive the bottom end of the gauge tube, which has a graduated scale marked on it, in

combination with the guard, the ring bracket for holding the gauge tube in position, the extension arm adjustable vertically on the guard, and the clamps adjustably secured on the extension arm, substantially as and for the purpose specified. 4th. A tap provided with a double spigot end connected together by a union coupling and washer, and having a hollow socket formed at the top of the tap to receive the bottom end of the gauge tube, in combination with the cap of the tube, connected by a rigid tube and a flexible tube to a spile inserted in the head of the cask, the rigid tube having a vent hole covered by a stopper held in position by a suitable spring to which the stopper is secured, which spring is connected to a crank on the end of the plug of the tap, substantially as and for the purpose specified. 5th. A tap having a hollow socket formed at the top to receive the bottom end of the gauge tube, in combination with the cylindrical casing provided with a vertical slot, and the cap of the gauge tube having a vent hole which is closed by a stopper, operated substantially as and for the purpose specified.

No. 40,372. Steam Engine. (*Machine à vapeur.*)

Anselme Hippolyte Larochelle, Levis, Quebec, Canada, 16th September, 1892; 6 years.

Claim. 1st. In combination, the second cylinder, as applied to one end of walking beam A, with pin or gudgeon B, and main connecting rods C, also side rods D, as already described. 2nd. In combination, valve motion connecting rod E, as applied to the working of cam shaft lever I, and connected to the gab end P, of the eccentric rod T, by the gudgeon F, as already described. 3rd. In combination, the trip shaft levers K, connected to the connecting bar H, by the gudgeons Y, as already described. 4th. In combination, the rock shaft levers *a*, connected to valve rods crosshead *b*, by the coupling links *d*, and the gudgeons *e*, as already described and shown in drawing.

No. 40,373. Book Stapling Machine.

(*Chasse-crampe pour livres.*)

Joseph Lynam, San Jose, California, U.S.A., 16th September, 1892; 6 years.

Claim. 1st. In a stapling machine, the combination, of a slotted table to support the sheets, a staple forming device consisting of a swinging anvil to support the staple blank in horizontal position above the table, having a width of supporting surface corresponding to the size of the staple to be formed, a pair of reciprocating jaws setting outside of said anvil to reciprocate against the sides thereof, and having edges to strike and turn down the end portions of the blank against the sides of the anvil, and grooves in the inner faces to take in the turned down portions, a vertically acting hammer reciprocating between said jaws and adapted to drive the formed staple and force back the anvil from beneath it, a prong clinching device beneath the table, and in the same plane with the driver, and a wire feed and cutting device arranged at one side of the forming device above the table to feed and place the blank or cut-off portion of wire at right angles to said staple forming device, substantially as described. 2nd. In a stapling machine, the combination, of the swing anvil held rigidly in position during the forming operation while the ends of the blank are being bent squarely and released and allowed to swing from beneath the staple during the driving operation, and the vertically reciprocating jaws arranged outside of said anvil to work in close relation to the sides thereof, and having grooves in the inner faces to take in and confine the bent prongs of the staples, substantially as described. 3rd. In a stapling machine, the combination of the swinging anvil C, spring C^7, stop lever C^8 operating as described to hold and release the anvil, the reciprocating jaws D, D, adapted to bend the staple blanks over the anvil, and the driving hammer E, arranged to work between said jaws and to force back the anvil from under the staple during the driving operation, substantially as described. 4th. A staple forming device consisting of a swinging anvil having a blank supporting face of equal width to the length of the staple to be formed, a pair of bending jaws embracing and reciprocating outside of said anvil at right to the supporting face and in close relation to the sides of the anvil, and having grooves in the inner faces to take in the bent portions of the stables, and the driver moving in the same plane with the said jaws, and in the grooves thereof above the staple and adapted to force out the formed staple and throw back the anvil from beneath it, substantially as decribed. 5th. In a staple forming and driving mechanism, the combination with staple bending jaws and a driving hammer of the swinging anvil and mechanism substantially as described, whereby the anvil is held in position to receive the staple blank during the feeding operation, and is set and locked to hold the blank while the jaws are bending the prongs, and is finally released and allowed to turn and be pressed back from under the formed staple by the stroke of the hammer, as specified. 6th. The swinging anvil C, having a straight top face to support the staple blank, vertical sides over which the prongs of the staple are bent, and a curved bottom edge set for operating with relation to the work supporting table, as described, in combination with the reciprocating jaws having grooves for confining and guiding the prongs of the staple, and the driving hammer arranged for joint operation, as specified. 7th. In a staple forming mechanism, a pair of reciprocating jaws formed of two parallel plates with a space between them corresponding to the length of the staple to be formed, and having vertical grooves in their inner faces, in combination with a staple blank support of corresponding width of blank supporting surface, which is adapted to present the blank to said jaws while they descend and bend the prongs, and then move outwardly from beneath the stable as the latter is pressed down, substantially as specified. 8th. In a staple forming and driving machine, the combination of staple forming jaws and a driving hammer adapted to place and drive the formed staple, and then remain in position to hold it down while the clinching is being done, and the clinching dies and hammer arranged for operation, as described to turn and clinch the prongs of the staple. 9th. The wire feed consisting of the stationary carriage guide, reciprocating carriage having a rest or support for the wire, the pivoted dog with wire gripping face set with relation to the said rest as described mechanism connected directly to said dog above its pivot to move the carriage, and a resistance spring applied to produce the required friction of the carriage on its guide in the feeding movement, as specified. 10th. In combination with the wire feed and the blank supporting anvil, the stationary cutter *b*, the vibrating jaw B, having a cutter b^2 and means whereby said jaw is actuated with respect to the movements of the wire feed, as specified. 11th. In a stapling machine the combination of staple forming and driving mechanism, a yielding table or support for the sheets to be bound, and a reciprocating clinching hammer operating in an upward direction through a slot in the table and capable of adjustment to regulate the intensity of the blow, substantially as specified.

No. 40,374. Corner Joint for Packing Boxes.

(*Joint pour coins de boîtes d'empaquetage.*)

Albert T. Linderman, Whitehall, Michigan, U.S.A., 16th September, 1892; 6 years.

Claim.—The joint for the corners of packing boxes, wherein one part is provided with the bevel groove *c*, and tongue *d*, and the other part is provided with the bevel *e*, and groove *f*, substantially as set forth.

No. 40,375. Combined Churn and Butter Worker.

(*Baratte et batte à beurre combinées.*)

Reuben B. Disbrow and Darius W. Payne, both of Minneapolis, Levi A. Disbrow, Havana, all of Minnesota, U.S.A., 16th September, 1892; 6 years.

Claim.—1st. The combined churn and butter worker herein described, comprising the cylinder, means for rotating said cylinder, said cylinder being provided with heads having open centres, independent heads arranged in said cylinder and supported independently thereof, rolls arranged in said cylinder and mounted in said heads, and means for rotating said rolls. 2nd. The combination with the cylinder, provided with heads having the open central portions, heads 35 mounted in said cylinder and arranged to cover the open portions of the cylinder heads, independent means for supporting said heads 35, rolls 37, arranged in said cylinder and mounted in said heads 35, means for rotating said cylinder, and means for connecting said rolls with said cylinder, so as to be rotated therewith, and means for disconnecting them from said cylinders, substantially as described. 3rd. The combination, with the cylinder 2, provided with heads having open central portions, the independent discs or heads 35 arranged to cover said open portions of the cylinder heads, the rolls 37 mounted in said heads 35, and means for clamping said heads 35 to said cylinder heads, so as to cause said heads 35 to be rotated with said cylinder, substantially as described. 4th. The combination with the cylinder, provided with heads having open central portions, of the rolls extending longitudinally in said cylinder, and having their journals projecting through the open portions of the cylinder heads, means for rotating said cylinder, and means for rotating said rolls. 5th. The combination with the cylinder, having the heads with the open central portions, the rolls arranged in said cylinder and provided with journals extending through the open portions of the cylinder heads, means for supporting and rotating said cylinder, independent means for supporting and rotating said rolls, and the heads or discs 35 arranged to close the open central portions in the cylinder heads. 6th. The combination with the cylinder, provided with heads having open central portions, rolls mounted in said cylinder and provided with journals extending through the open portions of the cylinder heads, discs or heads 35 for closing the open portions of said cylinder heads, means for driving said cylinder, and means arranged to connect said rolls with said cylinder, or disconnecting them therefrom, and means for clasping said heads 35 to the heads of the cylinder, substantially as described. 7th. The combination with the cylinder, provided with heads having open central portions, the rolls 37 mounted in said cylinder, and provided with journals extending through the open portions of said cylinder heads, the disc 35, means for clamping said dics to the cylinder heads, means for driving said cylinder, gearing connecting said rolls with said cylinder, and means for throwing said gearing into or out of operation, substantially as described. 8th. The combination with the cylinder, and the heads 35, of the rolls and their journals, the sleeve 63 surrounding said journal, the disc 67, ring 65, and the cap plate 69, substantially as described. 9th. The combination with the cylinder, the head 35, and the rolls 37, of the shaft 23, provided with the plate 57 in which the roll journals are mounted, the wooden sleeve

63, surrounding said journal, the wooden disc 67, and cork ring 65, surrounding said journal outside of said head 35, the plate 73 secured to the disc 35, and cam ring 75 provided with the handle 77, all substantially as described. 10th. The combination with the cylinder, provided with the flights upon its inner surface and with the heads having the open central portions, of the independent heads 35, the rolls 37, rotated in said cylinder with their journals extending through the heads 35 and through the open central portions of the cylinder heads, means for supporting said rolls, means for driving said cylinder, means for connecting said rolls with said cylinder, or disconnecting them therefrom, and means for clamping said heads 35 the cylinder heads, for the purpose specified. 11th. The combination with the cylinder, provided with the spiders 19, the longitudinally movable shafts 23 and 21, upon which said spiders are mounted, plates upon said shaft, rolls 37, provided with journals mounted in the spiders upon said shafts, the heads 35, means for driving said cylinder, and means for driving said rolls from said cylinder, substantially as described. 12th. The combination with the cylinder, and the rolls arranged therein, of the sliding journals 43, the plate in which said journals are mounted, the shaft 21 to which said plate is secured, and the lever for moving said shaft, substantially as described. 13th. The combination with the cylinder, and the head 35, the rolls and the hollow shaft 23, provided with a plate supporting the journals of said rolls, of the vent tube 85 extending through said hollow shaft and through the head 35, and provided with the upturned end 87, substantially as described.

No. 40,376. Meter for Water. (*Compteur à eau.*)

The Rogers Liquid Meter Company, Portland, Maine, assignee of Richard Jackson Rogers, Chelsea, Massachusetts, U.S.A., 16th September, 1892; 6 years.

Claim.—1st. In a water meter, the combination, of a fixed outer casing provided with an inlet pipe and a segmental chamber, the inner wall of which is composed of a perforated plate or strainer, a measuring cylinder provided with trunnions at the centre of its length and mounted in bearings within said outer casing, a movable plunger fitted to a bearing in the centre of each head of said measuring cylinder, a piston fitted to and movable endwise in said cylinder and constructed and arranged to act upon and move one of said plungers outward at the end of its stroke in each direction, a pair of locking levers each constructed and adapted to engage with a shoulder on said measuring cylinder to lock it at its most elevated end and to be disengaged therefrom by the outward movement of said plunger, and a counter weight for insuring said locking. 2nd. The combination, of a fixed outer casing provided with an inlet pipe, a segmental chamber composed of a frame, and perforated covering plate removably secured in the interior of said outer casing in position to cover said inlet passage, an oscillating measuring cylinder provided with suitable trunnions and mounted in bearings within said outer casing, suitable pipes and inlet and discharge valves for controlling the flow of water to and from said measuring cylinder, a piston movable endwise in said measuring cylinder, a plunger fitted to a bearing in each head of said cylinder in position to be acted upon by said piston, a pair of weighted oscillating levers each constructed and arranged to be acted upon directly by one of said plungers and to engage with a lug or shoulder on a head of said cylinder and lock it in its most elevated position. 3rd. In an oscillating water meter, the combination, of a fixed outer casing, an oscillating measuring cylinder mounted by suitable trunnion bearings within said outer casing, a reciprocating piston in said cylinder, a reciprocating plunger fitted to a bearing in each head of said cylinder, a locking lug or shoulder formed upon each head of said cylinder, a stand or lug formed upon or secured to each of said heads and having its inner and upper surface inclined as set forth, a pair of weighted levers fulcrumed in a stand formed in or secured to the interior of said outer casing, one at each end, in positions to be acted upon by said plungers to move them outward, each of said levers being provided with a shoulder to engage the locking lug or shoulder on the head of said cylinder, and with a lug having an inclined outer and lower surface to engage the inclined surface of the lug or stand on the cylinder head whereby the pressure of the water behind the piston is made to aid in tilting the measuring cylinder when the piston is nearing the end of its stroke. 4th. In an oscillating water meter, the combination, with the oscillating measuring cylinder A, and the pipes a^2, i^2, and C, of the two valve casing E, E, the inlet valves F, and discharge valves G, connected together by the stem m, said discharge valve having an inclined or conical seating surface, and provided with the cylindrical section n, to fit into and fill the opening through its seat, and also provided with a series of guiding ears, the outer surfaces of which are coincident with the periphery of said cylindrical section, substantially as described. 5th. In an oscillating water meter, the combination, with the oscillating measuring cylinder A, and the pipes a^2, i^2, and C, of the valve casings E, E, the two pairs of puppet valves F and G, each pair connected together by the stem m, and provided with the pendent piston H, the lever J, fulcrumed at its centre and resting at each end upon one of the valves or valve stems, and the fixed inclosing casing B, provided in its interior with the bosses I, I, all constructed, arranged and adapted to operate substantially as and for the purposes described. 6th. In a water meter, the combination, of a fixed outer casing or cylinder provided with an inlet pipe, an oscillating measuring cylinder mounted by suitable trunnions in bearings within said outer casing, a piston movable endwise in said measuring cylinder, a device to be acted upon by said piston to transmit motion from said piston to the exterior of said measuring cylinder, suitable pipes and valves for controlling the flow of water, locking devices for locking said cylinder at each extreme of its oscillations, and cam surfaces to be operated by the movements of said piston and aid in oscillating said cylinder, substantially as described. 7th. The combination, of the outer casing B, provided with the inlet pipe B^3, and the bosses I, I, the measuring cylinder A, provided with trunnions and mounted in bearings in said casing, the piston D, the plunger b, b, two pairs of valves F and G, each pair connected by a common stem and provided with the pendent piston H, the cylindrical hub n, forming part of each discharge valve G, suitable inlet and discharge pipes, the lever J, the inclined surfaced lugs h^1, and the shoulders e, on the heads of the cylinder A, a pair of pivoted levers f, provided with the shoulders f^1, and the inclined faced lug f^3, and the counter weight f^4, all constructed, arranged and operating substantially as described.

No. 40,377. Ore Concentrator. (*Concentrateur de minerai*)

Charles Evarts Seymour and Charles Frederick Staver, both of Hurley, Wisconsin, U.S.A., 16th September, 1892; 6 years.

Claim.—1st. In an ore concentrator, the combination of a concave ore receptacle fixed upright on a centrally piercing shaft, which shaft is provided with a collar bearing against a corresponding block on the frame, the block having a cam and the collar a corresponding recess, whereby as the shaft is rotated the receptacle is intermittingly raised and dropped, compressive springs coiled around the shaft having their bearings arranged to control the vertical motion of the shaft, and a circular trough located about the receptacle near its upper edge to catch the overflow from the receptacle, substantially as described. 2nd. In an ore concentrator the combination, with a revoluble vertical shaft, supporting thereon centrally a bowl adapted to hold a supply of ore and water, of a collar and block bearing against each other, one fixed to the shaft and the other a recess for receiving the cam whereby by revolution of the shaft it is given an endwise motion, and springs arranged about the shaft having their bearings so located as to limit and control the endwise movement of the shaft, substantially as described. 3rd. In an ore concentrator, the combination, with an ore receiving bowl fixed upright on a centrally piercing hollow revolving shaft, provided with ports within the bowl near its bottom of vertically moving cup valve arranged to fit water tight about the shaft on the inner surface of the bowl and to close the ports in the shaft, which valve is provided with a stem for lifting it and thereby opening the ports, substantially as described. 4th. In an ore concentrator, the combination, with an ore receiving bowl fixed on a centrally piercing hollow shaft provided with ports within and near the bottom of the bowl, of a cup valve arranged to fit water tight on the inner surface of the bowl, a stem movable vertically within the hollow shaft connected to the cup valve and a wedge arranged to be forced between a bearing on the stem of the valve and the end of the shaft whereby the valve is opened, substantially as described. 5th. In an ore concentrator, the combination, with an ore receiving bowl fixed upright on a hollow vertical revolving shaft having ports within the bowl, of a valve about the shaft arranged to close the ports therein, which valve is provided with a stem located and arraged to move vertically in the shaft, a tilting lever pivoted to the frame, and a wedge hinged to one arm of the lever, and arranged to be thrust by the tilting of the lever between a bearing on the valve stem and a relatively fixed part of the machine, substantially as described. 6th. In an ore concentrator, the combination, with a vertical shaft carrying an ore bowl fixed upright thereon, of a driving pulley loose on the shaft a friction wheel feathered on the shaft and arranged to be thrown into engagement with the pulley and in engagement with a fixed bearing on the frame by means of a tilting lever, substantially as described. 7th. In an ore concentrator, a vertical shaft carrying an ore receivig bowl fixed thereon and provided with a driving pulley revolubly loose on the shaft, in combination with a friction wheel feathered on the shaft and arranged to be thrown into engagement with the pulley, and out of engagement with the pulley, and into engagement with a bearing fixed on the frame, a tilting lever pivoted on the frame one arm of which rides in a groove therefor in the friction wheel and is adapted to shift it on the shaft, the other arm of which lever is provided with a limitedly elastic rod the outer end of which rides in a groove in a nut turning by a screw thread on a fixed standard whereby the lever is titled, substantially as described. 8th. In an ore concentrator, having a revolving shaft and a shifting friction wheel thereon, the combination, with a tilting lever pivoted on the frame and arranged to shift the friction wheel by means of an adjustable nut with which it has mechanical connection, of a part W, supported movably thereon, and the wedge Y hinged to the part W, and arranged to be inserted removably between a bearing on a valve stem of the concentrator and the end of the shaft, substantially as described. 9th. In an ore concentrator, the combination, with a hollow vertical revolving shaft carrying an upright bowl fixed thereon, the shaft being provided with ports within the bowl and a valve about the shaft arranged to close the ports therein which valve is provided with a stem movable vertically within the shaft, of a friction wheel feathered on the shaft and arranged to be thrown into and out of engagement with a driving

pulley revolubly loose on the shaft, a tilting lever pivoted on the frame one arm of which rides in a groove therefor in the friction wheel and a wedge on the other arm of the tilting lever arranged to be thrown between a bearing on the valve stem and the end of the shaft, substantially as described.

No. 40,378. Whiffletree Attachment.

(Attache de palonnier.)

William J. Lohr, Johnstown, Pennsylvania,, U. S. A., 16th September, 1892 ; 6 years.

Claim.—1st. A draft clevis or coupling made up of a central portion consisting of upper and lower plates rigidly connected to each other and provided with studs, loops pivoted between said plates and provided at their free ends with notches for engagement with the studs, and a spring for holding said loops in engagement with the studs, substantially as set forth. 2nd. The combination, in a clevis or draft attachment, of a body portion having recesses, loops having on one end laterally projecting pins which engage with said recesses and at the opposite end notches, a turning pin carrying a lug for engaging with the notched ends of the loops, so as to throw the same out of engagement with the studs with which said notches engage, and a spring bearing upon the pivoted ends of the loops, substantially as shown, and for the purpose set forth. 3rd The combination, in a clevis or draft attachment, of a central body portion made up of upper and lower plates rigidly connected to each other, said plates having recesses *g* and projecting portions, as shown, loops pivotally secured within said recesses, the opposite ends thereof being notched, and a spring held between said plates so as to throw the pivoted ends of the loops outwardly, substantially as shown, and for the purpose set forth. 4th. In combination with a clevis, a solid link or plate made in a single piece and having oppositely arranged angle openings L L, substantially as set forth. 5th. As a new article of manufacture, a draft link made in a single piece and having oppositely arranged angle openings L L, the ends of said openings being of different distances from each other, so as to adapt the device as either a long or short coupling link, substantially as set forth.

No. 40,379. Combined Advertising Device and Cigar Tip Cutter. (*Appareil d'annonce et coupebout de cigare combinés.*)

Frederick Russell White, Boston, Massachusetts, U.S.A., 16th September, 1892 ; 6 years.

Claim.—1st. A combined advertising device and cigar tip cutter, consisting of an outer stationary cylinder *c*, provided with an opening at or through which an advertisement may be displayed at the opening in the outer cylinder, a shaft connected with said inner cylinder, a ratchet wheel on said shaft, a pawl engaging said ratchet wheel, a lever and connections to operate said pawl, a sliding blade or knife to cut off the cigar tip, and connections between said knife or blade and lever, whereby when the latter is operated the former will also be moved, substantially as set forth. 2nd. A combined advertising device and cigar tip cutter consisting of a bed plate and casing or support therefor, said bed plate being provided with openings through which cigar tips may be passed, a stationary cylinder provided with an opening supported on the bed plate, a rotary cylinder arranged within the stationary cylinder, a shaft connected with said rotary cylinder, a ratchet wheel on said shaft, a pawl engaging said ratchet wheel, a lever and connections to operate said pawl, a blade arranged to slide beneath the bed plate and on a line across the holes in said bed plate, and connections between said knife and blade, whereby when the latter is operated the former will also be moved, as set forth. 3rd. In a cigar tip cutter, the combination, with the cigar tip cutting mechanism, of the outer stationary cylinder provided with an opening through which advertisements may be displayed, and an inner rotary cylinder containing a series of advertisements to be successively displayed at the opening in the outer cylinder, said inner cylinder being connected with the said cutting mechanism to be operated thereby, substantially as herenbefore set forth.

No. 40,380. Damper Regulator. (*Régulateur de régistre.*)

Charles Gregory Jewett, Howell, Michigan, U.S.A., 16th September, 1892 ; 6 years..

Claim. 1st. In a damper regulator, the combination, with a vessel or chamber within the circulating system containing an expansive fluid, of a connection with said vessel, and means for regulating the amount of fluid within the vessel independent of the temperature of the heating medium, substantially as described. 2nd. In a damper regulator, the combination, with a vessel or chamber within the circulating system containing an expansive fluid, of a connection with said vessel and means for increasing or diminishing the amount of fluid within said vessel independent of the heating medium, substantially as described. 3rd. In a damper regulator, the combination, with a fluid containing chamber or vessel within the circulating system, of a connection with said chamber, and a pump in said connection, substantially as described. 4th. In a damper regulator, the combination, with a fluid containing chamber or vessel within the circulating system, of a connection with said chamber, a pump and a three-way valve in said connection, substantially as described.

No. 40,381. Railway Surface Cattle Guard.

(Garde-bétail à niveau de chemin de fer.)

James Thomas Hall, Chicago, Illinois, U.S.A., 16th September, 1892 ; 6 years.

Claim.—1st. In a surface cattle guard, the gratings formed of guard rails having a base and an upwardly extending metallic flange of a separate piece, substantially as described. 2nd. In a railway surface cattle guard, gratings formed of wooden guard rails, each having an upwardly extending metallic flange supported its entire length upon said guard rail, substantially as described. 3rd. In a railway surface cattle guard, gratings formed of guard rails, each having an upwardly extending metallic flange secured in position by means of the flanges, such as *g*, and bolts *h*, substantially as described. 4th. In a railway surface cattle guard, the thimble I, having apertured foot *d*, said foot forming means for securing the guard sections in the track, substantially as described. 5th. In a railway surface cattle guard, the thimble I, having web *b*, aperture *c*, and foot *d*, apertured to receive a spike, substantially as described. 6th. In a surface cattle guard, the gratings formed of wooden guard rails, combined with a metallic strip secured on the top thereof, substantially as described.

No. 40,382. Apparatus for Unloading Cargoes.

(Appareil pour décharger les cargaisons.)

Michael John Paul, of 12 Montague Place, Russell Square, County of Middlesex, England, 16th September, 1892 ; 6 years.

Claim.—1st. An apparatus adapted for coaling vessels, and for conveying coal or similar cargo from vessels to wharves or other places, consisting of a barge or "lighter" A, provided with a travelling bed B, which extends along the floor of the barge and over a pivoted arm such as C, the cargo being gradually fed to the travelling bed, whereby it is carried and whence it is discharged on arrival at the outer extremity of the said arm. 2nd. The combination, with a barge or "lighter" A, provided with burkers D, for containing coal or similar cargo, of a travelling bed B, arranged partly along the floor of the barge and partly over an elevated arm such as C, carried by and pivoted to the said barge, substantially as and for the purposes set forth. 3rd. For elevating coal and similar cargo, and discharging the same from a barge or "lighter," a travelling bed or endless chain B formed of plates or links *b*, jointed together by means of rods b^1, the hailing ends of the plates being of greater depth than the leading ends so as to compensate for the inclination of the elevator and to overcome the tendency of the cargo to fall back whilst ascending the incline.

No. 40,383. Steam Engine. (*Machine à vapeur.*)

Elmer Stillman Smith, Bound Brook, New Jersey, U.S.A., 16th September, 1892 ; 6 years.

Claim—1st. The combination with the case having the form of a spherical segment and the similarly shaped piston filling the case partially, of a reversible main valve arranged in the piston and moving therewith, and a reversable cut-off valve arranged in the main valve, substantially as set forth. 2nd. The combination with the case having the form of a spherical segment and the similarly shaped piston filling the case partially, of a reversible main valve arranged in the piston and moving therewith, a reversible cut off valve arranged in the main valve, and a reversing rod arranged in the cut off valve, substantially as set forth. 3rd. The combination with the case having the form of a spherical segment and the similarly shaped piston filling the case partially, of a reversing rod capable of rotative movement, a reversible cut off valve which is rotated by said rod, and a reversible main valve which is arranged in said piston and shifted by the cut off valve, substantially as set forth. 4th. The combination with the case, the piston and the crank disk, of a valve arranged in the piston, and capable of rotary movement but held against longitudinal movement, a reversing rod capable of longitudinal movement in said valve and rotary movement with said valve and provided with a spiral groove, and a carrier attached to the crank disk and provided with a projection which enters said groove, substantially as set forth. 5th. The combination with the spherical case and piston, of a main valve arranged in the piston, a cut off valve arranged in the main valve, and provided with a hollow stem having a guide at its front end, a reversing rod arranged in said hollow stem and provided at its front end with a spherical socket which moves in said guide, a shifting rod provided with a spherical socket, and a link having spherical knuckles and connecting said sockets, substantially as set forth. 6th. The combination with the spherical case and piston, of a cylindrical extension arranged in the head of said case, a hollow follower pin arranged in said extension and provided with a cylindrical guide, a spherical socket arranged in said guide and connected with a shifting rod, a reversible valve arranged in the piston, a reversing rod arranged in said valve and provided with a spherical socket, and a link having sperical knuckles and connecting said sockets, substantially as set forth. 7th. The combination with the spherical case, the piston and the crank disk, of a carrier revolving with the disk and provided with a projection, and a reversible main valve arranged in the piston and provided with two projections, either of which can be brought in contact with the carrier, substantially as set forth. 8th. The combination with the spherical case, the piston and the crank disk, of a carrier attached to the disk

and provided with a projection, a reversible main valve provided with two projections, either of which can be brought in contact with the projection of the carrier, and a reversible cut off valve provided with a movable segment whereby the main valve is moved, substantially as set forth. 9th. The combination with the main valve and the cut off valve, both provided with induction ports, of a detached cut off segment arranged in the induction ports, substantially as set forth. 10th. The combination with the spherical case, the spherical piston provided with a wrist pin, and the crank disc provided with a socket for the wrist pin, of a sleeve surrounding the wrist pin and arranged in the socket of the crank disc to rotate therewith, a carrier secured to the sleeve, and a valve arranged in the piston and rotated by said carrier, substantially as set forth. 11th. The combination with the case having the form of a spherical segment, the similarly shaped piston filling the case partially, and provided with a seat for the wrist pin, and the crank disc provided with a seat for the wrist pin, of a main valve arranged in the piston, and having a stem which extends through the wrist pin, and a ball bearing which is interposed between said valve stem and its support in the crank disc, and whereby the inward thrust of the main valve is taken up, substantially as set forth.

No. 40,384. Rotary Pump. (*Pompe rotative.*)

Benjamin Franklin Taber, Buffalo, New York, U.S.A., 16th September, 1892; 6 years.

Claim.—1st. The combination with the inclosing case, of a rotary cylinder arranged eccentrically in said case and provided with independent curved grooves or pockets, each extending in the arc of a circle from the periphery of the cylinder inwardly toward the axis of the cylinder and outwardly toward the periphery thereof, and segmental or arc-shaped pistons arranged loosely in said grooves and capable of sliding bodily in the same, the pistons having no attachment to the cylinder and being guided in their movements by the walls of the grooves, substantially as set forth. 2nd. The combination with the enclosing case, of a rotary cylinder arranged eccentrically in said case and provided with independent arc-shaped grooves, each arranged on one side of the axis of the cylinder and trending with both ends toward the periphery of the cylinder and having one end terminating near the periphery of the cylinder and the other opening through the periphery, and sliding arc-shaped pistons arranged loosely in the grooves of the cylinder and guided by the walls of said groves, substantially as set forth. 3rd. The combination with the enclosing case, of a rotary cylinder arranged eccentrically in said case and provided with independent curved grooves or pockets, each extending in the arc of a circle from the periphery of the cylinder inwardly toward the axis of the cylinder and outwardly toward the periphery thereof, segmental or arc-shaped pistons sliding in said grooves, and a cam or projection whereby the pistons sliding are moved outwardly in their grooves, substantially as set forth.

No. 40,385. Process for Applying Sand Blast in Engraving and Etching. (*Procédé pour l'application des jets de sable dans la gravure et art de graver à l'eau forte.*)

Jessie Mills, Great Yarmouth, Norfolk, widow and administratrix of the estate of Joseph Lewis Mills, in his lifetime of Baldwins Gardens, Grays Inn Road, Middlesex, both in England, 16th September, 1892; 6 years.

Claim.—1st. For etching purposes, the process described for removing by the sand blast, the coating of Brunswick Black Asphaltum or other suitable resist placed on the metal plate, substantially as mentioned. 2nd. For etching purposes, the process described, of successively stopping out within the tracing on the coating of Brunswick Black Asphaltum, or other suitable resist and subjecting the said coating to the action of the sand blast, substantially as herein specified.

No. 40,386. Secondary Battery. (*Pile secondaire.*)

The Gerry-Long Manufacturing Company, Jersey City, New Jersey, assignee of James Henry Gerry, Brooklyn, and Charles Edward Long, New York, all in the U. S. A., 17th September, 1892; 6 years.

Claim.—1st. In a secondary battery, the combination, with a cell containing shallow compartments or troughs, formed by insulating partitions and containing active material, of lead plates arranged in said cell with their lower edges extending down into the active material, as set forth. 2nd. In a secondary battery, the combination, with a cell formed or provided with narrow insulating partitions across the bottom and up the sides dividing said cell into a number of shallow troughs at the bottom and grooves up the sides, of active material contained in the troughs and lead plates, the lower edges of which extend down into the active material in the said troughs, as herein set forth. 3rd. The combination, with a cell, the bottom of which is divided by low insulating partitions into a series of vertical troughs, an active material contained in said troughs, and positive and negative plates composed of woven strips or ribbons of metallic lead with their lower edges extending down into the active material in said troughs, as herein set forth.

No. 40,387. Car Coupler. (*Attelage de chars.*)

Peter Hoff, Edward E. Bryant, G. Howard Barnes, and Ed. H. Gillman, all of Detroit, Michigan, U.S.A., 17th September, 1892; 6 years.

Claim.—1st. In a car coupler, the combination of a draw head, of a draw bar consisting of opposite spring pressed plates or jaws at the end of draw head, and a hook adapted to engage between said jaws, substantially as described. 2nd. In a car coupler, the combination of a draw head, a draw bar consisting of opposite spring pressed flaring plates or jaws at the end of said draw head, a hook having an arrow shaped head adapted to engage between said jaws, substantially as described. 3rd. In a car coupler, the combination of a draw head, a draw bar secured thereto and consisting of oppositely inclined plates or jaws arranged across the open end of the draw head, of springs for causing said plates to approach each other, a draw bar pivoted in the draw head having an arrow shaped head, said bar being held in its coupling position by the tension of the spring, substantially as described. 4th. In a car coupler, the combination of a draw head, a draw bar secured thereto and consisting of oppositely inclined jaws arranged across the open end of the draw head, of springs for causing said plates to approach each other, a draw bar pivoted on a transverse bar in the draw head, having an arrow shaped coupling head, said bar being clamped between the jaws, and adapted to be turned out of coupling position, substantially as described. 5th. In a car coupler, the combination of a draw head formed of the two halves *a*, *b*, the flanges *c*, bolts therethrough for securing the halves together, the half bearing in each half, the shaft in said bearings, the hook secured to said shaft, and the spring jaws with which said hook is adapted to couple, substantially as described.

No. 40,388. Rotary Machine for Cutting Veneer and Lumber. (*Machine rotative pour couper les feuilles de placage et le bois.*)

Heman Swift Smith and John Frank Plumb, both of Syracuse, New York, U.S.A., 17th September, 1892; 6 years.

Claim.—1st. In a veneer and lumber cutting machine, in combination with the spindle B, the chuck or log on the end thereof, and a supplemental chuck consisting of a sleeved disc feathered upon the spindle and having arms carrying knives that engage the dog, a bifurcated lever fulcrumed on the main frame of the machine engaging the supplemental dog and acted upon by a movable part of the machinery, so that at the proper instant the supplemental dog may be disengaged from the log, substantially as described. 2nd. In a veneer and lumber cutting machine, the combination with the spindle B, carrying on its inner end a dog or chuck, of means for imparting thereto an endwise movement for the purpose of driving the chuck into the log or disengaging it therefrom, consisting of a box E, loosely engaged by the outer end of the spindle, which is provided with collars located inside of the box, and the screw shaft *d*, having the collar d^1 located loosely within the box E, said screw shaft being provided with an operating hand wheel B, substantially as described. 3rd. In a veneer and lumber cutting machine, the combination of the series of four feed screws, O, P, Q and R, at one end of the machine, and a similar series of feed screws at the other end of the machine, said feed screws being arranged substantially as described, the gears J engaging pinions on said feed screws, the spindles B and B^1, the driving gears thereupon, and the connecting gearing between the driving gears, and the gear J at one end of the machine and between the feed screws at one end and those at the other end of the machine, substantially as described. 4th. In a veneer and lumber cutting machine, the combination of the four feed screws O, P, Q, R, at one end of the machine, and the four feed screws O, P, Q, R, at the other end of the machine, said feed screws P and Q being horizontal, and said feed screws O and R being inclined upward and downward, the head block having the knife and pressure rollers and carried by feed screws P, P, the upper pressure rollers carried by feed screws O, O, the lower pressure rollers carried by feed screws R, R, the dividing roller carried by the feed screws Q, Q, the gears J, J, engaging pinions on the several feed screws, and the actuating mechanism whereby said gears J, J, are rotated in one direction to feed the cutter, dividing roller, and pressure rollers against the log or in another direction to cause them to recede from the log, substantially as described. 5th. In a veneer and lumber cutting machine, the combination of the four feed screws O, P, Q, R, at one end of the machine, and a like number at the other end, the head block S, having knife *t*, and roller *u*, and actuated by feed screws P, P, the dividing roller T, actuated by the feed screws U, U, the upper pressure rollers V, V, journalled in boxes O^1, O^1, actuated by the feed screws O, O, the lower feed screws V^1, V^1, journalled in boxes R^1, R^1, actuated by the feed screws R, R, the gears J, J, connecting pinions on the several feed screws, and actuating mechanism for said gears, substantially as described. 6th. The combination of the spindle B, the driving gears thereon, the double gear J loosely mounted thereon, a feeding mechanism consisting of feed screws having pinions engaged by the bevel face of said double gear, the gear I feathered upon spindle B, a shaft *e* carrying bevelled pinions e^1 and e^2, said pinion e^1 engaging the gear I, and said pinion e^2 engaging the pinion e^3, on the movable shaft *f* carrying the pinion *g*, and the train of gears K, L, L^1 and M, said gear K engaging the flat face of the double gear J, all arranged so that the pinion *g* may be caused to engage the gear M or the gear

L, so that the feeding devices may move in one direction or the other, substantially as described. 7th. In a veneer and lumber cutting machine, the combination of the feed screws having pinions thereon, the gears J engaging said feed screws, the spindles B and B^1 carrying the dogs that engage the log, the driving gears on said spindles, the connecting gearing between said spindles and the gears J, and the rod *h* connected to the movable shaft *f* carrying transfer pinion *g*, said rod *h* having the lug h^1 adapted to come into contact with a lug on the bottom of the head block, substantially as and for the purpose described.

No. 40,389. Heater. (*Calorifère.*)

Elijah Smith Wilber, Englewood, Illinois, U.S.A., 17th September, 1892: 6 years.

Claim.—1st. In a heater, substantially of the nature set forth, in combination with the shell and fire chamber, a pair of intercommunicating fluid receptacles forming respectively a receptacle for the cooler or return fluid, and a receptacle for the discharge or heated fluid, the latter being nearest and the former farthest from the fire chamber, and partitions for the said receptacles, one extending from the lower part of the return fluid receptacle toward its top, and the other from the upper part of the discharge fluid receptacles toward its base, substantially as described. 2nd. In a heater, substantially of the nature set forth, in combination with the shell and fire chamber, a pair of intercommunicating fluid receptacles supported one above the other within the shell, a manifold for the return fluid, communicating with the upper of said receptacles, and a manifold for the supply of heated fluid, communicating with the lower of said receptacles, and partitions for the said receptacles, one extending from the lower part of the return fluid receptacle toward its top, and the other from the upper part of the discharge fluid receptacle toward its base, substantially as described. 3rd. In a heater, substantially of the nature set forth, in combination with the shell and fire chamber, a pair of intercommunicating fluid receptacles, I and K, the latter supported above the former within the shell, a partition I^1, for the receptacle I extending from its upper side short of its base, a partition K^1, for the receptacle K, extending from its base short of its upper side, a return fluid inlet e^1, leading into the receptacle K near its base, and an outlet *e* for the heated fluid, leading from the receptacle I, near its top, substantially as described. 4th. In a heater substantially of the nature set forth, in combination, with the shell and fire chamber, a series of receptacles I, supported within the shell near the fire chamber at intervals affording intervening spaces *h*, a cover *i*, surmounting the said receptacles and closing the spaces *h*, an open passage *g*, between two of the rearmost receptacles, a series of receptacles K, supported above the receptacles I, at intervals affording intervening spaces h^1, and each communicating with one of the last named receptacles, a cover i^1, surmounting the receptacles K, and closing the spaces h^1, an open passage g^1, between two of the foremost receptacles K, an inlet opening e^1, for return fluid in each receptacle K, and an outlet opening *e*, for the heated fluid in each receptacle I, substantially as described. 5th. In a heater substantially of the nature set forth, in combination, with the shell and fire chamber, a series of receptacles I, supported within the shell near the fire chamber at intervals affording intervening air spaces *h*, a cover *i*, surmounting the said receptacles and closing the spaces *h*, an open passage *g*, between two of the rearmost receptacles, a partition I^1, and an outlet *e*, for the heated fluid in each receptacle I, a manifold M, communicating with the outlets *e*, a series of receptacles K, supported above the receptacles I, at intervals affording intervening spaces h^1, and each communicating with one of the last named receptacles, a cover i^1, surmounting the receptacles K, and closing the spaces h^1, an open passage g^1, between two of the foremost receptacles K, a partition K^1, and an outlet e^1, for the return fluid in each of the last named receptacles, and a manifold N, communicating with the inlets e^1, substantially as described. 6th. In a heater substantially of the nature set forth, in combination, with the shell, a pair of intercommunicating fluid receptacles supported one above the other within the shell, the upper one having an inlet for the return fluid and the lower one having an outlet for the heated fluid, and a fire chamber having a grate C, and an adjustable back G, on the grate, substantially as described. 7th. In a heater having a fire chamber B, provided with a grate and an adjustable back G, a sectional folding apron H, extending from the adjustable back over the grate beyond the fire chamber outside the back G, substantially as described. 8th. In a heater, the combination, of a fire chamber B, having a grate C, an adjustable back G, a water back E, E, in the fire chamber, and lining plates *b*, supported between the water back and fire chamber, and affording air spaces *o*, and confining the adjustable back between them, substantially as described. 9th. In a heater, the combination, of the fire chamber B, water back E, E, and lining plates *n*, supported between the said water back and chamber and out of contact with the water back, and forming the air space *o*, substantially as described. 10th. In a heater, the combination, of a fire chamber B, having a grate C, an adjustable back G, a folding apron H, extending from the back G, over the grate beyond the fire chamber outside the adjustable back, a water back E, E, in the fire chamber, and lining plates *n*, supported between the water back and fire chamber, and affording air spaces *o*, and confining the adjustable back between them, substantially as described. 11th. In a heater, the combination, of a fire chamber B, having a grate C, an adjustable back G, a folding apron H, extending from the adjustable back over the grate beyond the fire chamber outside the back G, a water back E, E, in the fire chamber, lining plates *n*, supported between the water back and fire chamber and affording intervening air spaces *o*, a disc P, on a rotary rod *m*, extending through the shell of the heater, and links connecting the opposite lining plates with the disc, eccentrically thereof, substantially as described.

No. 40,390. Typewriter. (*Clavigraphe.*)

Godfrey Henry Lasar, St. Louis, Missouri, U. S. A., 17th September, 1892; 6 years.

Claim.—1st. In a typewriter, the combination of the levers 4, pivoted frame 6, and tension spring 12, substantially as set forth. 2nd. In a typewriter the combination of the levers 4, pivoted frame 6, escapement plate 11, and tension spring 12, substantially as set forth. 3rd. In a typewriter, the combination of the levers 4, the pivoted frame 6, and adjustable tension spring 12, substantially as set forth. 4th. In a typewriter, the combination of the levers 4, pivoted frame 6, and spring 12, having a threaded rod 38, with a thumb nut 40, substantially as and for the purpose set forth. 5th. In a typewriter, the combination of the levers 4, pivoted frame 6, and a spring 12, provided with a non-circular threaded rod 38, passing through a lug 39, having a non-circular opening, and a thumb nut 40, substantially as set forth. 6th. In a typewriter, the combination of the levers 4, escapement plate 11, and dogs 21 and 23, pivoted to the plate 11, substantially as set forth. 7th. In a typewriter, the combination of the levers 4, escapement plate 11, and dogs 21 and 23, the dog 21 having a lug 31, substantially as and for the purpose set forth. 8th. In a typewriter, the combination of the levers 4, escapement plate 11, dogs 21 and 23, and double acting spring 28, substantially as set forth. 9th. In a typewriter, the combination of the levers 4, escapement plate 11, having flanges or lugs 19 and 20, and dogs 21 and 23, substantially as set forth. 10th. In a typewriter, the combination of the levers 4, escapement plate 11, and pivoted segment 34, substantially as set forth. 11th. In a typewriter, the combination of the levers 4, escapement plate 11, pivoted segment 34, and pin 37 connecting the pivoted segment to the escapement plate, substantially as set forth. 12th. In a typewriter carriage, the combination of the roller or platen, and the clip 50 and 51, substantially as set forth. 13th. In a typewriter carriage, the combination of the roller or platen, the clip 50 and 51, and roller 52, substantially as set forth. 14th. In a typewriter carriage, the combination of the roller or platen, and the clip having the rollers 52, and bearing at its upper edge against the platen, substantially as set forth. 15th. In a typewriter carriage, the combination of the roller or platen, a clip 50, 51, and means for shifting the clip to and from the roller, substantially as set forth. 16th. In a typewriter carriage, the combination of the roller or platen, the rod 44, arms 46 to which the clip is pivoted, and slot and pin connection 49 between the clip and arms, substantially as set forth. 17th. In a typewriter carriage, the combination of the roller or platen, rod 44, clip pivoted to the rod, and means for turning the rod to operate the clip, consisting of a lever 55, having a dog 56, 60, and ratchet teeth 57 at one end of the carriage, substantially as and for the purpose set forth. 18th. In a typewriter carriage, the combination of the roller or platen, provided with a ratchet wheel 43, arms 65, and lever 70, substantially as set forth. 19th. In a typewriter carriage, the combination of the roller or platen, the ratchet wheel on one end of the roller, an arm 65, and a lever 70 pivoted to the arm and engaging the ratchet wheel at one end, substantially as set forth. 20th. In a typewriter carriage, the combination of the roller or platen, ratchet wheel 43, arm 65 having end 68, and pivoted lever 70, having end 71, substantially as set forth. 21st. In a typewriter carriage, the combination of the roller or platen, ratchet wheel 43, arm 65 having keeper 72, and pivoted lever 70, substantially as set forth. 22nd. In a typewriter carriage, the combination of the platen or roller, ratchet wheel 43, arm 65, pivoted lever 70, and spring 73, substantially as set forth. 23rd. In a typewriter carriage, the combination of the roller or platen, ratchet wheel 43, arm 65, pivoted lever 70, and changeable stop 75, substantially as set forth. 24th. In a typewriter carriage, the combination of the roller or platen, an arm secured to the carriage, and a lever pivoted to the arm, whereby the platen is turned, and the carriage moved endwise, substantially as and for the purpose set forth. 25th. In a typewriter carriage, the combination of the rod 81, bar 83, and lugs 82 and 84, the lug 84 being provided with a roller and extension, substantially as and for the purpose set forth. 26th. In a typewriter carriage, the combination of the roller or platen, the bell 91, clamp 90, having screw 92, and grooved graduated rod 81, substantially as set forth. 27th. In a typewriter carriage, the combination, of the bell 91, having pivoted hammer 93, with a pivoted dog 95, clamp 90, and rod 81, substantially as set forth. 28th. In a typewriter carriage, the combination, of the rod 81, clamps 97 and 90, and a grooved rod receiving feathers in the clamps, substantially as set forth. 29th. In a typewriter, the combination, of a carriage having a graduated clip, and a fixed finger 80, pointing at the graduations on the clip, substantially as set forth. 30th. In a typewriter, the combination, of the levers 4, type bars 111, clips 124, and rods 119, having threaded hooks 125, substantially as set forth. 31st. In a typewriter, the combination, of the levers 4, type bars 111, connecting rods 119, and screw hooks 125, substantially as set forth. 32nd. In a typewriter, the combin-

ation, of a type bar 111, having hooks 116 and 118, substantially as set forth. 33rd. In a typewriter, the combination, of a bar for carrying the type formed in one piece with hooks 116 and 118, and journals 114, substantially as set forth. 34th. In a typewriter, the combination, of a bar for carrying the type having hooks 116 and 118, the hooks 118, having spring tongues 120, and slots 121, at their inner ends, substantially as set forth. 35th. In a typewriter, the combination, of the levers 4, and clips 124, having eyelets 126, and points 128, substantially as set forth. 36th. In a typewriter, the combination, of the levers 4, frame 6, and plate 11, the latter having a head 17, and a hook 18, substantially as set forth. 37th. In a typewriter ribbon holder, the combination, of a frame 140, ratchet wheels 143, and spools 146, substantially as set forth. 38th. In a typewriter ribbon holder, the combination, of the frame 140, ratchet wheels 143, having hubs 144, and spools 146, substantially as set forth. 39th. In a typewriter ribbon holder, the combination, of the frame 140, ratchet wheels 143, having hubs 144, spools 146, journals 145, and springs 148, substantially as set forth. 40th. In a typewriter ribbon holder, the combination, of the frame 140, spools 143, having hubs 144, spools 146, and pins 147, substantially as set forth. 41st. In a typewriter, the combination, of the carriage having a roller or platen, and a device for holding the ribbon in a horizontal position over the carriage, and in a transverse position to the roller or platen, substantially as set forth. 42nd. In a typewriter, the combination of the roller or platen, and a device for holding the ribbon over the roller or platen, said device being constructed so as to remove the ribbon from over the roller or platen at will, substantially as set forth. 43rd. In a typewriter, the combination of the roller or platen, and a movable ribbon holder, substantially as set forth. 44th. In a typewriter, the combination of a roller or platen, and mechanism for holding the ribbon over and in close proximity to the platen, substantially as set forth. 45th. In a typewriter, the combination of a ribbon holder having a plate 151, with arms 152 and 155, substantially as set forth. 46th. A ribbon holder for typewriters, having a plate 151, a slotted projection 152, having a head 153, substantially as set forth. 47th. In a ribbon holder for typewriters, the combination of a plate 151, having slotted projections 152, and head 155, with projections 156, substantially as set forth. 48th. In a ribbon holder for typewriters, the combination of the plate 151, having arms or projections 150, head 155, and roller 158, substantially as set forth. 49th. In a ribbon holder for typewriters, a plate 151, having arms or projections 152, head 155, rollers 158, and runner-shaped projections 159, substantially as set forth. 50th. In a ribbon holder for typewriters, the combination of the frame 140, plate 151, connecting links 194 and 195, and means for moving the links, substantially as set forth. 51st. In a ribbon holder for typewriters, the combination of the frame 140, head 161, plate 151, head 161, plate 151, links 194 and 195, and means for moving the links, substantially as set forth. 52nd. In a ribbon holder for typewriters, the combination of the frame 140, head 161, projections 167 on the head, links 194 and 195, and plate 151, substantially as set forth. 53rd. In a ribbon holder for typewriters, the combination of the frame, 141, head 161, projection 197, having inclined faces 196 and 198, links 194, 195, and plate 151, substantially as and for the purpose set forth. 54th. In a ribbon holder for typewriters, the combination of the spools, ratchet wheels, and shifting dogs for engaging the respective ratchet wheels, substantially as set forth. 55th. In a ribbon holder for typewriters, the combination of the ratchet wheels 143, and pawls 164 and 165, with means for operating them, substantially as set forth. 56th. In a ribbon holder for type writers, the combination of the spools 146, ratchet wheels 143, pawls 164 and 165, having plates 182, spring 183, and means for operating the pawls, substantially as set forth. 57th. In a typewriter, the combination of the spools and ratchet wheels, pawls 164 and 165 movable block 172, and rod 171, substantially as set forth. 58th. In a ribbon holder for typewriters, the combination of the ratchet wheels and spools, pawls 165 and 164, block 172, spring 177, plate 174, projection 175, and rod 171, substantially as set forth. 59th. In a ribbon holder for typewriters, the combination of the spools and ratchet wheels, the pawls, and a shifting spring, block for moving the pawls from one ratchet wheel to the other, substantially as set forth. 60th. A ribbon holder for typewriters having spools for holding the ribbon, and provided with mechanism whereby it may be moved in a direction transverse to the length of the roller or platen of the carriage, substantially as set forth. 61st. In a typewriter, the combination of the roller or platen, a holder adapted to support the ribbon, and to be moved in a direction transverse to the platen, substantially as set forth. 62nd. In a ribbon holder for typewriters, the combination of the frame 140, dovetailed projection 106, and screw rod 185, substantially as and for the purpose set forth. 63rd. In a ribbon holder for typewriters, the combination of the frame 140, dovetailed projection 106, rod 185, and bracket 189, substantially as set forth. 64th. In a ribbon holder for typewriters, the combination of the plate for supporting the ribbon, and means for moving the plate, consisting of a key 199, spring rod 207, and lever 211, substantially as set forth. 65th. In a ribbon holder for typewriters, the combination of the plate for holding the ribbon over the platen, and means for moving the plate consisting of a key 199, spring rod 207, lever 211, and rod 217 for adjusting the lever to regulate the tension of the spring, substantially as set forth. 66th. In a ribbon holder for typewriters, the combination of the ratchet wheels, pawls 164 and 165, lever 168, escapement plate 11, and connection 170, substantially as set forth. 67th. In a typewriter the combination of the graduated rod 81, and the frame 100, having ends 101, and pieces 103, 104 and 105 substantially as set forth. 68th. In a typewriter, the combination of the frame 6, having lugs 127, spacing levers 223, and key 224, substantially as set forth. 69th. In a typewriter, the combination of the spacing levers 223, and key 224 extending across behind the bank of the keys 5, substantially as set forth. 70th. In a typewriter, the combination of the spacing levers 223, key 224, and plates 225, substantially as set forth. 71st. In a typewriter, the combination of the frame 6, carriage 26, dogs 21 and 23, and the throw out lever 300, substantially as set forth. 72nd. In a typewriter, the combination of the frame 6, carriage 26, dogs 21 and 23, and the throw out lever 300, having a rod 303, and spring 302 passing through a perforated lug 304, substantially as set forth. 73rd. In a typewriter, the combination of the type bars 111, bar 220, and rubber 222, substantially as set forth. 74th. In a typewriter, the combination of the base 1, arms 230, and bars 233, substantially as set forth. 75th. In a typewriter, the combination of the base 1, pivoted arms 230, and bars 233, having notches 236, substantially as set forth. 76th. In a typewriter, the combination of the base 1, pivoted arms 230, bars 233, and springs 239, substantially as set forth. 77th. In a typewriter, the combination of the base 1, having notched bars 233, substantially as set forth.

No. 40,391. Typewriter. (*Clavigraphe.*)

Godfrey Henry Lasar, St. Louis, Missouri, U.S.A., 17th September 1892; 6 years.

Claim.—1st. In a typewriter, in combination with the keys, the finger pieces having laterally swinging stems, as set forth. 2nd. In a typewriter, in combination with the keys, the finger pieces having laterally swinging stems, perforated plate through which the stems pass, and mechanism for moving the plate, substantially as set forth. 3rd. In a typewriter, in combination with the keys, the finger pieces having laterally swinging stems, perforated plate through which the stems pass, hinged links supporting the plate, and mechanism for moving the plate, substantially as set forth. 4th. In a typewriter, in combination with the keys, the finger pieces having laterally swinging stems, movable perforated plate, and mechanism for moving the plate to shift the keys, consisting of a rock shaft provided with an arm, keys, link connecting the arm to perforated plate, and a spring for moving the parts in one direction, substantially as set forth. 5th. In a typewriter, in combination with the keys, the fixed plate, sleeves or tubes secured to the plate, finger pieces having stems passing through the sleeves, springs located in the sleeves, and acting to support the finger pieces, and mechanism substantially as described for shifting the stems of the finger pieces laterally, substantially as and for the purpose set forth. 6th. In a typewriter, in combination with the keys, the fixed plate, slotted sleeves secured to the plate, finger pieces having stems passing through the sleeves, collars secured to the stems, and provided with lugs fitting to the slots of the sleeves, springs located between the collars and the bottoms of the sleeves, and mechanism, substantially as described, for shifting the stems of the finger pieces laterally, substantially as specified. 7th. In a typewriter, in combination with the keys, the finger pieces provided with stems having collars, fixed plate, sleeves secured to the plate through which the stems of the finger pieces pass, and slotted buttons hinged to the fixed plate, substantially as and for the purpose set forth. 8th. In a typewriter, in combination with the finger pieces provided with stems and arranged in diagonal series, the keys and mechanism, substantially as described, for shifting the stems of the keys laterally, substantially as and for the purpose set forth.

No. 40,392. Extension Table. (*Table à rallonge.*)

A. D. Kirby & Co., assignee of Warren Williams, all of Detroit, Michigan, U. S. A., 17th September, 1892; 6 years.

Claim.—1st. In an extension table, the stationary part having a receptacle, the sliding part, of leaves resting upon the extension bars and connected by hinges to each other and to the sliding part, one of the hinges being detachable, of leaf supports extending under one tier of leaves and adapted to support them in the receptacle, substantially as described. 2nd. In an extension table, having a stationary part and a sliding part, having sides *b*, and top *a*, having moulding *c*, of leaves connected together and adapted to be stored in a receptacle in the stationary part, the ends of the leaves being in line with the ends of the top of the stationary and sliding parts, substantially as described. 3rd. In an extension table, wherein the levers are adapted to be stored under the top, of stationary and sliding parts, having slides *b*, of the bevel *c*, or moulding on the sides of the top, a bevel or moulding on the ends of the leaves in line with the moulding *c*, and the moulding *f* on the sides, substantially as described. 4th. In an extension table, a stationary part having a receptacle, a movable part having leaves hinged thereto, of sliding bars E, and extension bars F connecting the two parts of the table, of a locking device attached to the extension bar, and adapted to engage with the leaves and hold them in their adjusted extended position, substantially as described.

No. 40,393. Flue for Fireplaces.

(*Tuyau pour foyer de cheminée.*)

Gilbert Robert Anderson, assignee of Kenneth McKenzie, both of Edinburgh, Scotland, 17th September, 1892; 6 years.

Claim.—The tube or channel A, metal plates B, B, diamond shaped pieces C and E, and damper D, as and for the purposes hereinbefore described, and shown on the accompanying sheets of drawings.

No. 40,394. Harrow. (*Herse.*)

The J. W. Mann Manufacturing Company, assignee of James Alfred Publow, all of Brockville, Ontario, Canada, 17th September, 1892; 6 years.

Claim.—1st. In a two wheeled spring tooth harrow, the springs 16, one end secured to a rock bar journalled to the vehicle frame and the free end bearing upon the harrow frames, and released therefrom when said bar is rocked by a lever, as set forth. 2nd. In a two wheeled harrow, the runners 18, secured to the harrow frames, and adjustable, as set forth. 3rd. The combination, with the vehicle frame of the harrow, of a rock bar journalled therein and operated by a lever, harrow frames hung from said bar by chains and provided with spring teeth, and springs secured at one end to said bar and the other end engaging and disengaging the harrow frames, whereby the harrow frames are depressed by the springs and operation of the lever, and the free end of the springs set back simultaneously with the lifting of the harrow frames by said lever, as set forth.

No. 40,395. Tire Heater.

(*Appareil de chauffage des bandages de roues.*)

Charles Goodnight, of Goodnight, James H. Parks, Clarendon, Roseman E. Brice, Salisbury, Jerome D. Stocking, Clarendon, assignees of William B. Neville, Salisbury, all of Texas, U.S.A., 17th September, 1892; 6 years.

Claims.—1st. In a revolving tire heater or furnace, a stationary bottom plate having circular tracks or ways and friction wheels or rollers, and provided with openings to admit the flames from independent burners to contact with rotated tire supported upon a suitable rack. 2nd. In a tire heater, the tire rack, means for rotating the same in a horizontal plane, a bottom having perforations C, C, and independent burners beneath said perforations, substantially as shown and described. 3rd. In a tire heater or furnace, a tire rack consisting of the hub H, arms *h*, and bands G, G, and means for rotating the same in a horizontal plane, substantially as shown and described. 4th. A tire heater, having a bottom plate A, provided with perforations C, trackways D, D^1, flanges *d*, d^1, and rollers B, B, B^1, B^1, mounted upon a suitable frame *z*, an axle *x*, mounted upon said frame, and a tire rack journalled to said axle, said rack consisting of arms *h*, and bands G, G^1, and hub H, and provided with a cover K, substantially as shown and described.

No. 40,396. Cattle Guard. (*Garde bétail.*)

The National Surface Guard Company, assignee of James Whittemore, all of Detroit, Michigan, U.S.A., 17th September, 1892; 6 years.

Claim—1st. In a cattle guard, the combination, with cross bars, of guard rails rigidly secured on the same and means for movably supporting the cross bars, substantially as described. 2nd. A cattle guard, consisting of one or more gratings and means for movably suspending and securing the gratings, substantially as described. 3rd. A cattle guard, composed of gratings, supporting bars secured upon the track, and means for suspending said gratings from the supporting bars, substantially as described. 4th. In a cattle guard, the combination, with the gratings having cross bars at their ends, of supporting bars beside said cross bars and of double cranks having their ends journalled respectively in the cross bars and supporting bars. 5th. In a cattle guard, the combination, of the guard rails *c*, the cross bars *b*, notched to receive said guard rails, and the connecting rod *e*, securing the cross bar and guard rails together, substantially as described. 6th. In a cattle guard, the combination, with the grating having cross bars *b*, of the supporting bars E, having the vertical portion *f*, and the inclined portion *g*, and the crank F, engaging in the cross bars *b*, at one end and the vertical portion *f*, of the supporting bars at the other end, substantially as described.

No. 40,397. Temperature Regulator.

(*Regulateur de la température.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignee of James Finney McElroy, Albany, New York, both in the U.S.A., 17th September, 1892; 6 years.

Claim.—1st. In a temperature regulator, the combination of the thermostat, the valve and a connection rod between, of a ball and socket joint in said rod at or near the valve, substantially as described. 2nd. In a temperature regulator, the combination of the thermostat, the actuating lever, a valve, the connecting rod, a screw engagement between the rod and lever, and a ball and socket joint in the rod at or near the valve, substantially as described. 3rd. In a temperature regulator, the combination of the thermostat, the valve, the connecting rod, the lever D, the block E pivoted in said lever, the screw threaded engagement between the rod and block, the ball and socket joint in the rod at or near the valve, substantially as described. 4th. In a temperature regulator, the combination, with the thermostat, the valve and the connecting rod, of the ball I formed on the end of the rod, the coupling K engaging with the valve stem at one end, and having a socket at the other end in which the ball is secured, substantially as described.

No. 40,398. Pneumatic Pump. (*Pompe pneumatique.*)

The Canadian Rand Drill Company, assignee of Frederic Arthur Halsey, all of Sherbrooke, Quebec, Canada, 17th September, 1892; 18 years.

Claim.—1st. In a pneumatic pump, the combination, with a water tank or chamber having a valved water outlet at or near its bottom, and an air passage opening into said chamber, of a main air valve which controls said air passage for the inlet and exhaust of air to and from said water chamber, a supplementary air valve which governs said main air valve, and a float which is adapted to move in said water tank or chamber by and with the inflow and outflow of water thereto and therefrom, and which is connected to and governs said supplementary air valve, substantially as and for the purpose set forth. 2nd. In a pneumatic pump, the combination, with a water tank or chamber having a valved water inlet and a valved water outlet at or near its bottom, an air chamber or cavity separate from said water chamber, and an unimpeded air passage connecting said air chamber to said water chamber at or near the top thereof, of a main air valve which is connected to and controls an air inlet and exhaust aperture of said air chamber, a supplementary air valve in said air chamber and which governs said main air valve, a float which is adapted to move in said water chamber by and with the inflow and outflow of water thereto and therefrom, and valve operating mechanism engaged by said float and extending into said air chamber and therein connected to said supplementary air valve, whereby said float governs said supplementary air valve, substantially as and for the purpose set forth. 3rd. In a pneumatic pump, the combination, with a water tank or chamber, having a valved water inlet and a valved water outlet at or near its bottom, and an air passage opening into said chamber, of a piston valve which registers with a port communicating with said air passage and alternately with a port communicating with a compressed air supply and a port communicating with the external air, whereby the inlet and exhaust of live air to and from said water chamber are controlled, together with a supplementary air valve which governs said piston valve, and a float which is adapted to move in said water chamber by and with the inflow and outflow of water thereto and therefrom, and which is connected to and governs said supplementary air valve, substantially as and for the purpose set forth. 4th. In a pneumatic pump, the combination, with a water chamber having a valved water inlet and a valved water outlet at or near its bottom, and an air passage opening into said chamber, of a main air valve which controls said air passage for the inlet and exhaust of live air to and from said water chamber, a reciprocating, rotary slide valve working in a cavity or chest which has constant connection with the live air supply and which registers with a port communicating with an air exhaust and alternately with ports communicating respectively with opposite ends of the main air valve, whereby the said main air valve is governed in its movements, a float which is adapted to move in said water chamber by and with the inflow and outflow of water thereto and therefrom and valve operating mechanism which connects said float to said rotary slide valve and positively reciprocates the same, substantially as and for the purpose set forth. 5th. In a pneumatic pump the combination with a water chamber having a valved water inlet and a valved water outlet at or near its bottom, and an air passage at or near its top of a main air valve which controls the said air passage for the inlet and exhaust of live air to and from said water chamber, a reciprocatory, rotary slide valve fixed on a rock shaft in a cavity or chest, which has constant connection with the live air supply, and which valve registers with a port communicating with an air exhaust, and alternately with parts communicating with opposite ends, respectively, of the main air valve, a lever keyed to said rock shaft, a rod linked to one arm of said lever and extending therefrom to and into the water chamber, a counter balance weight on the opposite arm of said lever, a float apertured to fit loosely to and transverse said rod, in and by the inflow and outflow of water to and from said water chamber, and stops on the respective ends of said rod adapted to be engaged by said float in its movements thereon, substantially as and for the purpose set forth. 6th. In a pneumatic pump, the combination with a water chamber having a valved water inlet and a valved water outlet at or near its bottom, of a neck at its upper end, an air passage in the top of said neck, air valve mechanism to control said air passage for the inlet and exhaust of air to and from said water chamber, and a float which is approximately similar in length and diameter to those of the interior of said neck, and which is adapted to move in said chamber and neck by and with the inflow and outflow of water thereto and therefrom, and which is connected to and governs the air valve mechanism, whereby the dead space to be filled with air at the upper part of the water chamber is diminished to a minimum, substantially as and for the purpose set forth. 7th. In a pneumatic pump, the combination with a water chamber having an air passage at its upper end, an

air valve mechanism which controls said air passage for the inlet and exhaust of air to and from said water chamber a float which is adapted to move in said water chamber by and with the inflow and outflow of water thereto and therefrom, and is connected to and governs said air valve mechanism, of a neck extending below the bottom of said water chamber and of an internal length and diameter approximately equal to the length and diameter of said float, and a valved water inlet and valved water outlet at or near the bottom of said neck, whereby when said float in its movement in said water chamber descends into said neck the practically complete discharge of water from said chamber and neck through said valved water outlet is accomplished, substantially as and for the purpose set forth. 8th. In a pneumatic pump, the combination with the water chamber having a valved water inlet and a valved water outlet at or near its bottom, an air passage at or near its top, an air valve mechanism which controls said air passage for the inlet and exhaust of air to and from said water chamber, and a longitudinally apertured float which is adapted to move in said water chamber, by and with the inflow and outflow of water thereto and therefrom, of a rod connected to said air valve mechanism, extending longitudinally of said water chamber, adapted to be traversed by said apertured float in the said movement thereof, and provided with stops at its opposite ends, adapted to be engaged by said float, whereby while said float will, through said rod, govern said air valve mechanism, said water chamber and rod may be made of any desired length, substantially as set forth. 9th. In a pneumatic pump, the combination with a water chamber which has a valved water inlet and a valved water outlet at or near its bottom, a detachable lid at its top, an air passage in said lid, and a valve governing float adapted to move in said water chamber by and with the inflow and outflow of water thereto and therefrom, of a separate air chamber mounted on said detachable lid, communicating with said water chamber through said air passage, and provided also with a detachable lid, an air valve mechanism located in and upon said separate air chamber to control through the same and said air passage the inlet and exhaust of live air to and from said water chamber, and air valve operating mechanism connecting said float to said air valve, whereby the valve mechanism is isolated from said water chamber, and whereby the operative parts of the apparatus may be exposed to view, or be repaired or removed without disturbing the water chamber, substantially as specified.

No. 40,399. Shifting Rail for Carriages.

(Rail de changement pour voitures.)

James E. Parker and E. S. Heaton, both of Woodston, Kansas, U.S.A., 17th September, 1892; 6 years.

Claim.—In a shifting rail, the combination, with two back bars having their inner ends hinged together and having slots in their forward edges, of side bars pivoted to the outer ends of said back bars, the said side bars having open slots in their forward ends and in their outer sides, as described.

No. 40,400. Air Pump. (*Pompe à air.*)

Allen A. Dittmar, Hugo Falkenhausen and Albert Louis Reinmann, all of New York, State of New York, U.S.A., 17th September, 1892; 6 years.

Claim.—1st. In an electric air pump, suction and discharge compartments communicating with the pump cylinders by valve openings, in combination with solenoids placed over openings in the top plates of the compartments and having movable cores which pass through the openings in the said top plates and act as valve stems, so as to open and close the respective valve openings by electric currents conducted alternately through the respective solenoids, substantially as set forth. 2nd. In an electric air pump, the combination of the top plates of the suction and discharge compartments, which have openings for the valve stems with the movable solenoid cores passing through said openings of the top plates and acting as valve stems for the valve openings, by which the said compartments communicate with the pump cylinders, substantially as set forth. 3rd. In an electric air pump, suction and discharge compartments communicating with the pump cylinders by valve openings, in combination with solenoids placed over openings in the top plates of the compartments and having movable cores which pass through the openings in the said top plates, and an electric commutator connected with the solenoids, by which commutator electric currents are conducted alternately through the respective solenoids and the cores magnetized, so as to open and close the respective valve openings in the pump cylinders, substantially as set forth. 4th. In an electric air pump, suction and discharge compartments communicating with the pump cylinders by valve openings, in combination with solenoids placed over openings in the top plates of the compartments and having movable cores, and the piston crank bearing an electric commutator which is electrically connected with the solenoids, so that by the rotation of the crank shaft electric currents are conducted through the respective solenoids, and the cores are magnetized, and open and close the respective valve openings simultaneously with the stroke of the pump pistons, substantially as set forth.

No. 40,401. Pulley for the Transmission of Power.

(Poulie pour la transmission de la force.)

The Cant Bros. Co., assignee of Bernard Maurer, all of Galt, Ontario, Canada, 17th September, 1892; 6 years.

Claim.—1st. A pulley comprising a rim, a body to said rim, a hub centrally located in said body, a flange at an angle to and forming part of said hub, and means for securing said flange to the body, substantially as described. 2nd. In a split pulley comprising two sections, the combination of the web having an opening formed therethrough, a hub comprising two sections, each section of which is provided with an outwardly extending flange secured to the web, and means for locking the two sections together, substantially as described. 3rd. In a split pulley, the combination of the rim, a web secured to said rim, said rim and web divided into two equal sections,, a hub secured to said web, said hub comprising two sections, each of said sections provided with an outwardly projecting flange secured to said hub, and means for locking the said sections of the hub together, substantially as described.

40,402. Tap Socket for Barrels, etc.

(Douille de robinet pour barils.)

Christopher John Mayhew, Welmer, County of Kent, England, 19th September, 1892; 6 years.

Claim.—1st. In a tap socket, the inner sliding tube closed at its inner end, provided with a rubber joint for the tap, and segmental plates behind the said rubber, and studs projecting beyond the periphery of the tube, substantially as described. 2nd. In a tap socket, the inner sliding tube provided with a rubber joint for the tap, and segmental plates behind the said rubber, and studs projecting beyond the periphery of the tube, substantially as described. 3rd. In a tap socket, the inner sliding tube provided with a rubber joint for the tap, and segmental plates behind said rubber, studs projecting beyond the periphery of said tubes, the external bush provided with a rubber joint on its inner end for the inner sliding tube, and a circular groove within its upper end into which the joint studs of the tube engage, substantially as set forth. 4th. In a tap socket, the inner perforated sliding tube with a rubber joint for the tap, and segmental plates behind said rubber, studs projecting beyond the periphery of said tube, the external bushing provided with a rubber joint on its inner end for the inner sliding tube, and a circular groove within its upper end into which the joint studs of the inner tube engage, substantially as set forth.

No. 40,403. Core Attracting Solenoids.

(Solénoïde à attraction centrale.)

Wenzel Robert Michl, Wetter, on the Ruhr, Prussia, 19th September, 1892; 6 years.

Claim.—The method of producing in a solenoid uniformity, or any desired ratio of increase and decrease of core-attracting force, which consists in varying the number of coils of wire in the different sectional portions of the solenoid or in making the coils composing the said portions of different diameter, or in varying the influence of the coils on the core either by means of other coils traversed by the current in opposite direction, or by means of a metal tube inserted into the solenoid and having slits that increase or decrease in width in proportion to the force required at the different points, substantially as described.

No. 40,404. Door Bell. (*Timbre de porte.*)

Joseph Allen and Samuel Goulden, both of Newark, New Jersey, U.S.A., 19th September, 1892; 6 years.

Claim.—1st. The door bell herein shown and described, consisting of the case B, adapted to be secured to the inside of a door or door casing and provided with the post *a* and arched support *b*, formed integral with said case, the gong having a screw threaded aperture and screwed upon the threaded end of said post *a*, the disks *c* and *d*, secured to said case, as described, the hammer shaft *i*, carrying a pinion and having its bearings in said disks, the slotted hammer carrier *g*, secured to said shaft, the hammer *h*, pivotally adjusted to the slotted ends of said carrier, the driving shaft *o*, having one end squared and projecting through the back or inner disk *c*, a train of gears and pinions connecting the driving shafts with the hammer shaft as described and a rotating key adapted to pass through the door or door casing and to engage with the end of said driving shaft, said parts being arranged to operate as described, for the purposes set forth. 2nd. In a door bell the combination, with a plurality of rotating hammers a gong and gearing for speeding said hammers, of a rotary spindle or shaft connecting with said gearing and adapted to extend through a door or jamb, and a key connecting with said shaft and provided wiih a knob or finger piece, whereby a continuous ringing may be produced by rotating said key in either or both directions as described and for the purposes set forth. 3rd. In a door bell the combination, with the driving shaft thereof and an escutcheon adapted to be secured to the outside of a door or jamb of a key, adapted to engage with said shaft and to pass through said escutcheon and door or jamb, and having a knob or finger piece with shoulders adapted to engage with the outside of said escutcheon and a pin or holder engaging the inside thereof and the shank of said key, whereby the latter is prevented from longitudinal movement, as set forth.

No. 40,405. Motor for Pumps. (*Moteur pour pompes.*)

Thomas Ferguson, Fort Dodge, Iowa, Eugene C. Ferguson, Bloomington, Illinois, and Albert L. Ferguson, Winamac, Indiana, assignee of George F. Wightman, Shell Rock, Iowa, all of the U.S.A., 19th September, 1892; 6 years.

Claim.—1st. The combination, with the fulcrum, the lever mounted pivotally thereon, and adapted at one end for engagement with a pump or other rod, and the motor for operating the lever, of an air pump located between the motor and fulcrum, provided with a faucet, and having its piston rod pivoted to the lever, and the weight adjustably mounted on the lever between the fulcrum and motor, substantially as specified. 2nd. The combination, with the fulcrum, the lever mounted thereon and adapted at one end to engage with a pump or other rod, and the motor for operating the lever, of an air pump located between the motor and fulcrum, provided with an air faucet, and having its piston rod pivoted to the lever, substantially as specified. 3rd. The combination, with a tower, the cable suspended therein, the weight connected to one end of the cable, a pitman wheel, and a train of gearing for operating the same, of a fulcrum post, a lever fulcrumed upon the post, a post located between the motor and fulcrum, and having a keeper for the lever, a series of teeth located upon the lever, an adjustable weight mounted in the teeth, a pitman connecting one end of the lever with the piman wheel of the motor, an air cylinder located between the two posts and having a regulating faucet, and its piston rod pivotally connected with the lever, substantially as specified.

No. 40,406. Harrow. (*Herse.*)

Robert Neville, Montreal, Quebec, Canada, 19th September, 1892; 6 years.

Claim.—1st. A flexible rotary harrow, as and for the purpose set forth. 2nd. A rotary harrow formed of two or more self adjusting sections, as set forth. 3rd. A rotary harrow formed of segmental sections hinged together, as set forth. 4th. In a rotary harrow, the combination of segmental sections, one of which has a core piece or head situated centrally on the harrow, the traction or draught bar pivotally secured to said core piece, a guide finger depending from said bar, and a flange or projection on the outer faces or edges of said sections adapted to travel in said guide finger, as set forth.

No. 40,407. Snow Plough. (*Charrue à neige*)

Joseph Kobb, Belfast, Pennsylvania, U. S. A., 19th September, 1892; 6 years.

Claim—In a snow plough, the combination, of a frame comprising tapering sides, a sloping top presenting a convex surface and having its front end inclined downward and a bottom provided with openings, truck wheels arranged in said openings and supporting the frame, the longitudinal blade, the wings diverging from the rear end of the longitudinal blade, the side cutters arranged at the front of the frame, and the cross bar secured to the cutters and the blade, substantially as described.

No. 40,408. Anti-rattler for Thill Coupling.

(*Armon de limonière.*)

Elihu Wilder, Cambridge, Massachusetts, U.S.A., 19th September, 1892; 6 years.

Claim.—1st. The improved anti-rattling device for thill couplings, composed of the spring members e, e^1, formed to be interposed between the clip and the socket of the rim, one of said members having a concave portion formed to receive the socket of the thill iron and being fulcrumed on the other member, the adjusting bolt or screw connecting the outer ends of said members, and the ear e^4, formed on one of the members and arranged to bear on the ears of the clip, as set forth. 2nd. The improved anti-rattling device for thill couplings, composed of the spring members e, e^1, formed to be interposed between the clip and the socket of the iron, the adjusting bolt or screw connecting the outer ends of said members, and the ear or ears e^3, formed on one of said members to prevent the loosening of the bolt or screw, as set forth.

No. 40,409. Rail Joint. (*Joint de rail.*)

George Gould Stacy, New York, State of New York, U.S.A., 19th September, 1892; 6 years.

Claim.—1st. A rail joint, comprising angle plates having vertical portions to fit the rail webs, and outwardly extending base flanges with notches therein, and a base plate adapted to receive the rails, said plate having uprights on opposite sides to fit the notches in the angle plate flanges, the uprights terminating at their upper ends in laterally extending arms to overlap the flanges of the angle plates, substantially as described. 2nd. The combination, with the base plate adapted to receive the rails and having side flanges with vertical uprights, terminating in laterally extending arms, of the angle plates adapted to be secured to the rails, said plates having outwardly extending base flanges with notches therein to receive the uprights, substantially as shown and described.

No. 40,410. Road Cart. (*Désobligeante.*)

John Belmer Armstrong, Guelph, Ontario, Canada, 19th September, 1892; 6 years.

Claim.—1st. In a road cart gear, the combination of the cyma-reversa draw springs, and the elliptical body springs, substantially as and for the purpose specified. 2nd. In a road cart gear, the combination of tapering cyma-reversa draw springs, and tapering single plate elliptical body springs, substantially as and for the purpose specified. 3rd. In a road cart gear, the combination, with the axle of the cyma-reversa draw springs, the elliptical body springs, the interposed spring saddles, said parts having recesses and tits or projections as specified, and suitable clips for connecting the said parts rigidly with the axle, substantially as and for the purpose set forth. 4th. In a road cart, the combination, with the body, axle and shafts, of cyma-reversa draw springs which connect the shafts and axle, elliptical springs which support the body from the axle, and the strap and spring connections between the front of the body and shafts, all substantially as and for the purpose set forth. 5th. In a cart body with hinged seat, a spring fastener R which locks into holder S in bottom of seat P, and is released when raising up seat P, by push button Z, substantially as and for the purpose set forth.

No. 40,411. Elevator and Carrier for Hay.

(*Monte-foin.*)

William Louden, Fairfield, Iowa, U.S.A., 19th September, 1892; 6 years.

Claim.—1st. The combination, with a track or rail, and a hay carrier adapted to run thereon, of a plate secured to the under side of said rail or track, a latch hinged on said plate, an arm projecting from said latch and having a bifurcated end, a bar passing loosely through the rail or track, and loosely connected with the bifurcated end of the arm of the latch, and means for operating said bar, substantially as set forth. 2nd. The combination, with a rail or track, and a hay carrier adapted to run thereon, of two latches projecting in opposite directions, shoulders or stops on the frame of the carrier and disposed in opposite directions and adapted to be engaged by the latches, and a slide bar passing loosely through a hole in the rail or track for operating said latches, substantially as set forth. 3rd. The combination, with a rail, and a carrier adapted to run thereon, of two latches hinged to the under side of the said rail, an arm projecting from each latch toward the other, and a sliding bar passing through the rail and loosely connected to the arms of the latches whereby both latches may be operated simutaneously, and fixed stops on the carrier to be engaged by said latches, substantially as set forth. 4th. The combination, with a rail and a carrier adapted to run thereon, of two independently hinged latches on the under side of said rail, arms projecting from said latches, a slide bar passing through the rail, and loosely connected with said arms whereby both latches may be operated simultaneously and means whereby either of said latches is capable of being operated independently of the other, and stops on the carrier frame with which said latches are adapted to engage, substantially as set forth. 5th. The combination, with a rail and a carrier adapted to run thereon, of latches hinged to the under side of said rail, stops on the carrier frame adapted to be engaged by said latches, prongs projecting from said latches, a vertically movable yoke carried by the carrier frame, said yoke being adapted when moved upwardly to engage the prongs of one latch and release said latch from engagement with the carrier frame, substantially as set forth. 6th. The combination, with a track or rail and a hay carrier adapted to run thereon, of latches hinged on the under side of said track or rail, stops on the carrier frame with which said latches engage, a yoke embracing the carrier frame and adapted to have a vertical movement when struck by the load and adapted to engage one or the other of said latches. 7th. loops secured to the carrier frame for guiding said yoke, and lugs projecting from the carrier frame for guiding the lower portion of said yoke, substantially as set forth. 7th. The combination, with a rail and a hay carrier adapted to run thereon, of latches on the under side of said rail, two corresponding sets of stops on the carrier frame, one stop of one set being adapted to be engaged by one of said latches while the other latch is in engagement with the other stop of the corresponding set, and means for automatically releasing one latch when the load of hay shall have been raised to the carrier, substantially as set forth. 8th. The combination, with a rail or track and a carrier adapted to run thereon, of a plate secured to the under side of the rail or track and having an opening in its centre, a hollow projection in line with this opening, arms projecting from the latches into said hollow projection, stops on the carrier frame with which the latches engage, and a bar passing loosely through the rail and into the hollow projection and connected with the arms projecting from the latches, substantially as set forth. 9th. The combination, with a carrier provided with hoisting pulleys, of brakes pivoted to the carrier in proximity to the pulleys, and a pair of levers pivoted to the carrier, their inner ends having a loose pivotal connection with each other and their outer ends adapted to operate in connection with the brakes to raise them, substantially as set forth. 10th. In a hay carrier, the combination with a frame and two pulleys mounted therein for the accommodation of the hoisting rope, of two brake clevises hinged in opposite directions, two levers, each adapted to

engage one of the clevises, and means for operating said levers to raise both clevises simultaneously, substantiously as set forth. 11th. In a hay carrier, the combination with a frame and two pulleys mounted therein for the accommodation of the hoisting rope, of two brake clevises mounted in said frame and adapted to embrace said pulleys, two levers pivoted in the frame and each adapted to engage one of the clevises, said levers being connected together in such manner that when one is operated they will both be operated to raise the clevises to release the brake, substantially as set forth. 12th. In a hay carrier, the combination with a frame and two pulleys mounted therein for the accomodation of the hoisting rope, of two brake clevises mounted in said frame and adapted to embrace said pulleys, pins projecting from said clevises, two levers pivoted in the frame and having forks to engage said pins, and means for operating said levers simultaneously as set forth. 13th. The combination with a rail, of a projection on the under side thereof, a hay carrier having pulleys mounted therein for the accomodation of the hoisting rope, brake clevises adapted to embrace said pulleys, levers mounted in the frame and adapted to engage said clevises, said levers being adapted to be engaged and operated by the projection on the under side of the rail, substantially as set forth. 14th. The combination with a rail, of a projection on the under side thereof, a hay carrier having pulleys mounted therein for the accommodation of the hoisting rope, clevesis adapted to embrace said pulleys, brake shoes carried by said clevises, levers mounted in the frame and adapted to engage said clevises, said levers being loosely connected together at their upper ends and adapted to be engaged and operated simultaneously by the projection on the rail, substantially as set forth.

No. 40,412. Car Coupler. (*Attelage de chars.*)

William Caswell Watson, Paterson, New Jersey, U.S.A., 19th September, 1892 ; 6 years.

Claim.—1st. The combination, substantially as herein described, of corresponding hollow buffer heads, corresponding hooked draw heads pivoted one in each buffer head to swing laterally therein to such extent only that a lateral movement of either of said draw heads alone would be insufficient to swing it clear of the other draw head, and means, substantially as hereinbefore described, for swinging said draw heads. 2nd. The combination with a car body, of a hollow buffer head, a hooked draw head pivoted to swing laterally within the said buffer head, an upright spindle pivoted within the buffer head, a cam on said spindle for moving aside the said hooked draw head to produce the uncoupling, a lever on said spindle arranged crosswise of the car body to be accessible from the sides thereof, a lock on one side of the car body for locking said lever when the draw head is uncoupled, and a spring for throwing the draw head into coupling position when the lever is unlocked, all substantially as herein set forth. 3rd. The combination of a hollow buffer head, a hooked draw head pivoted to swing laterally within the said buffer head, an upright spindle pivoted within the buffer head, a cam fast on said spindle for throwing aside the said hooked draw head, a lever on said spindle, a second spindle attached to the car body, a crank on said second spindle, and a connection between said crank and lever, all substantially as herein set forth. 4th. The combination, with the corresponding hooked draw heads of two cars, of buffer heads on the two cars, in which said draw heads are pivoted to swing laterally, and which have each a forward projection *l* at one side to limit the lateral movement of the hook of the other draw head, substantially as and for the purpose herein set forth.

No. 40,413. Vehicle Box. (*Boîte de voiture.*)

Daniel Row Couch, Canadigua, New York, U.S.A., 19th September, 1892 ; 6 years.

Claim.—1st. The combination with a waggon box, of an upper removal side section, and a hinge D, having one leaf *d* secured to the removable side section, and the other leaf d^1 removably engaged with the corresponding side of the box, substantially as and for the purpose described. 2nd. The combination with a waggon box, of an upper removable side section, a loop d^4 secured to the corresponding side of the waggon box, and a hinge D, having one leaf *d* secured to the movable side section, and the other leaf d^1, registered with said loop, substantially as specified. 3rd. The combination with a waggon box, of an upper removable side section, a hinge D, having one leaf *d* secured to the removable side section, and the other leaf d^1 removably engaged with the corresponding side of the box, and a movable stop shoulder d^7, for securing the latter spring leaf to the side of the waggon box, substantially as and for the purpose set forth. 4th. The combination with a waggon box, of an upper removable side section, a loop d^4 secured to the corresponding side of the waggon box, a hinge D, having one leaf *d* secured to the movable side section, and the other leaf d^1 registered with said loop, and a movable stop shoulder d^7 secured to the latter spring leaf for engaging the loop and securing the removable side section to the waggon box, substantially as and for the purpose described. 5th. The combination, with a waggon box, of an upper removable side section, a loop d^4 secured to the corresponding side of the waggon box, and a hinge D, having one leaf *d* secured to the movable side section, and the other leaf d^1 provided with an arm d^5, registered with said loop, and formed with a projecting stop shoulder d^7, adapted to engage the lower end of the loop, substantially as set forth. 6th. The combination, with a waggon box, of a pair of removable upper side sections B, C hinged to the corresponding sides of the waggon box, and a rear side section E hinged to the rear side of the waggon box, substantially as described, 7th. The combination, with a waggon box, of a pair of removable upper side sections B, C hinged to the corresponding sides of the waggon box, a rear side section E hinged to the rear side of the waggon box, and the ties G between the ends of the rear side section, and the adjacent ends of the former side sections, substantially as and for the purpose specified. 8th. The combination, with a waggon box having upright slots a^7 in the rear ends of its longitudinal sides, and a rear side a^4 having its ends removably mounted in said slots, of removable upper side sections B, C hinged to the corresponding sides of the waggon box, and formed of less length than said sides, whereby the upper side sections swing within the vertical planes of the front and rear sides of the waggon box, and a rear removable upper section E hinged to the rear side of the waggon box, and formed of less length than the rear side, whereby said rear upper section swings between the vertical planes of the longitudinal sides of the waggon box, substantially as set forth. 9th. The combination, with a waggon box, of a pair of removable upper side sections B, C hinged to the corresponding sides of the waggon box, and supporting legs H movably secured to the upper portion of the inner sides of the removable side sections for supporting said sections when swung inwardly into a substantially horizontal plane, substantially as specified. 10th. The combination, with a waggon box, of a pair of removable upper side sections B, C hinged to the corresponding sides of the waggon box, supporting legs H movably secured to the upper portion of the inner sides, of the removable side sections for snpporting said sections when swung inwardly into a substantially horizontal plane, and a movable stop J for retaining said legs in their operative position, substantially as and for the purpose specified.

No. 40,414. Machine for Cutting Cloth.

(*Appareil pour découper le drap.*)

The Electrical Machine Company, assignee of Henry A. Caldwell, all of Chicago, Illinois, U.S.A., 19th September, 1892 ; 6 years.

Claim.—1st. A cloth cutting machine, comprising a movable frame or support, a reciprocating knife mounted therein, means for reciprocating the same in a curved line and a shifting pivot or fulcrum for said knife between the ends thereof, substantially as described. 2nd. A cloth cutting machine, comprising a movable base or support, a slotted standard mounted thereon, a frame or table supported on said standard, a reciprocating knife working said standard, means for reciprocating the same in a curved line, and a shifting pivot or fulcrum for said knife between the ends thereof, substantially as described. 3rd. In a cloth cutting machine, the combination, with the power shaft, a cutting knife, and a connection between said shaft and knife whereby the latter will be reciprocated in a curved line by the rotation of the former, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 4th. In a cutting machine, the combination, with the power shaft, the knife, and a connection between the said shaft and the knife, whereby the latter will be reciprocated in a curved line by the rotation of the former, of an adjustable shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 5th. In a cutting machine, the combination, with the power shaft, the knife and the connection between said shaft and knife, whereby the latter will be reciprocated in a curved line by the rotation of the former, of a link pivotally secured at its ends respectively to the machine frame and to the knife between the ends thereof, substantially as set forth. 6th. In a cutting machine, the combination, with the power shaft, the knife, and a connection between said shaft and knife whereby the latter will be reciprocated by the rotation of the former, of a link, pivots connecting the ends of said links respectively with the knife between the ends thereof, and with an adjustable bearing, substantially as set forth. 7th. In a cutting machine, the combination, with the power shaft, the knife, and a lever connection between said shaft and knife, whereby the latter will be reciprocated by the rotation of the former, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 8th. In a cutting machine, the combination, with the power shaft, a cutting knife having a cutting edge on its extreme end, extending transversely of or at an angle to the knife, and a connection between said shaft and knife whereby the latter will be reciprocated in a curved line by the rotation of the former, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 9th. In a cutting machine, the combination, with the power shaft, the knife having a cutting edge on its extreme edge, extending transversely of or at an angle to the knife, and a connection between said shaft and knife, whereby the latter will be reciprocated in a curved line by the rotation of the former, of an adjustable shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 10th. In a cutting machine, the combination, with the power shaft, the knife, having a cutting edge on its extreme end, extending transversely of or at an angle to the knife, and the connection between said shaft and knife, whereby the latter will be reciprocated in a curved line by the rotation of the former, of a link pivotally secured at its ends respectively to the machine frame and to the knife between the ends thereof, substantially as set forth. 11th. In a cutting machine the combination, with the power shaft, the knife

having a cutting edge on its extreme end extending transversely of the knife, and a connection between said shaft and knife, whereby the latter will be reciprocated by the rotation of the former; of a link, pivots connecting the ends of said link respectively with the knife between the ends thereof, and with an adjustable bearing, substantially as set forth. 12th. In a cutting machine, the combination with the power shaft, the knife having a cutting edge on its end extending transversely of the said knife, and a lever connection between said shaft and knife, whereby the latter will be reciprocated by the rotation of the former, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 13th. In a cutting machine, the combination of the power shaft provided with a crank portion, the knife, a lever, a link connection between said lever and the crank of the shaft, and a pivot connection between said lever and the knife, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 14th. In a cutting machine, the combination with the power shaft provided with a crank portion, the knife, a lever, an adjustable pivot for said lever, a link connection between said lever and the crank of the shaft, and a pivot connection between said lever and the knife, of a shifting pivot or fulcrum for said knife between the ends thereof, substantially as set forth. 15th. In a cutting machine, the combination with the power shaft, the knife having a cutting edge on its extreme end extending transversely of or at an angle to the knife, and a connection between said knife and shaft, whereby the knife will be reciprocated in a curved line by the rotation of the shaft, of a link pivotally secured at its ends respectively to the machine, and to the knife between the said cutting edge on the extreme end thereof, and the said connection between the shaft and knife, substantially as set forth. 16th. In a cutting machine, the combination, with the power shaft provided with a crank portion, the knife, a lever, a link connection between said lever and the crank of the shaft, and a pivot connection between said lever and the knife, of a link pivotally connected at its ends respectively with the frame of the machine and to the knife between the ends thereof, substantially as set forth. 17th. In a cutting machine, the combination, with the sections of the bed or table, the slotted standard and the base supporting the same, of a reciprocating knife and a vertically adjustable presser foot provided with wings embracing the cutting edge of said knife, between said presser foot and the upper end of the knife, and said wings extending between and overlapping the sections of the bed or table, substantially as and for the purpose set forth. 18th. In a cutting machine, the combination, with the power shaft provided with a crank portion, the knife, a lever, an adjustable pivot or fulcrum for said lever, a link connection between said lever and the crank of the shaft and a pivot connection between said lever and the knife, of a link pivotally connected at its ends, respectively to the end of the machine, and to the knife between the ends thereof, substantially as set forth. 19th. In a cutting machine, the combination, with the power shaft provided with a crank portion, the knife, a lever, a link connection between said lever and the crank of the shaft, and a pivot connection between said lever and the knife, of a link, and pivot connections respectively between one end of said link and an adjustable bearing and the other end of said link and the knife between the ends of the latter, substantially as described. 20th. In a cutting machine, the combination, with the powder shaft provided with a crank portion, the knife, a lever, an adjustable pivot or fulcrum for said lever, a link connection between said lever and the crank of the shaft and a pivot connection between said lever and the knife, of a link and a pivot connection between one end of said link and an adjustable bearing and between the other end of said link and the knife between the ends thereof, substantially as set forth. 21st. In a cutting machine, the combination, with a knife having a shifting fulcrum between its ends, and means for reciprocating said knife in a curved line, of a yielding connection for holding the knife up to its fulcrum, substantially as set forth. 22nd. In a cutting machine, the combination, with a knife having a curved back and means for reciprocating said knife, of a fulcrum for the back of said knife, and a yielding connection for holding the knife up to its fulcrum, substantially as set forth. 23rd. In a cutting machine, the combination, with the standard, an adjustable arm or lever and means for oscillating said lever, of a knife flexibly attached to said lever and having a shiftable fulcrum between its end, and a yielding medium or connection adjustably anchored at one ends, the acting upon said knife for holding it up to its fulcrum, substantially as set forth.

No. 40,415. Hot Air Furnace. (*Calorifère à air.*)

Robert Tate, Toronto, Ontario, Canada, 19th September, 1892; 6 years.

Claim.—1st. In a hot air furnace, the combination of an inner heating drum suspended within the furnace casing, a vertical passage way through the inner heating drum, and located centrally in the same, a distributing chamber above the heating drum into which opens the upper end of the vertical passage way, a fire box located below the heating drum, a pipe within the fire box located below the heating drum, a pipe within the fire box the upper end of which is connected to the lower end, of which is connected to the lower end of the vertical passage way, and the lower end of the said pipe projecting beyond the fire box wall, a furnace casing, a cold air supply pipe located within the furnace casing and the outer wall of the fire box, the upper end of the cold air supply pipe connected to the lower and outer end of the pipe within the fire box, a cold air supply shaft connected to the cold air supply pipe, a passage between the furnace casing and the outer walls of the fire box and heating drum to the distributing chamber, substantially as and for the purpose set forth. 2nd. In a hot air furnace, the combination of the inner locating drum suspended within the furnace casing, a vertical passage way through and located centrally in the drum, a distributing chamber, the upper end of said passage way opening into the distributing chamber, and the lower end connected to the top end of the bent pipe located within the fire box, the other end of said bent pipe projecting beyond the wall of the fire box, a metallic pipe connected to the outer wall of the fire box, a metallic pipe connected to the outer end of the bent pipe and to the cold air supply shaft, said metallic connection pipe adapted to be heated by the radiation of the heat from the walls of the fire pot, and the bent pipe adapted to be heated by the radiation of the heat from the fire within the fire box, a cold air supply shaft connected to the cold air supply pipe entering the heating chamber between the furnace casing and the walls of the fire pot, the fire box and the heating drum, substantially as and for the purpose set forth.

No. 40,416. Art of Distillation and in the Apparatus Used Therefor. (*Art et appareil de destillation.*)

Arthur William Ellis, London, England, 19th September, 1892; 6 years.

Claim.—1st. In the process of distillation, dividing the liquid to be distilled into a series of layers gradually decreasing in depth downward toward the lowermost, (the opposite extremes of depth being approximately two inches and one inch and the degree of diminishment about one eighth of one inch) and increasing in density and applying steam heat in a plurality of streams or bodies to each layer of such liquid, as set forth. 2nd. In the process of distillation, dividing the liquid to be distilled into layers gradually decreasing in depth downward toward the lowermost (the opposite) extremes of depth being approximately two inches and one inch and the degree of diminishment about one eight (of one inch) and increasing in density and applying steam heat in a plurality of streams or bodies through each layer in increased quantity to such liquid as the same increases in density, as set forth. 3rd. In distilling apparatus, the combination, with a boiler supplying steam, of the distillatory apparatus set at a height above the boiler, heating coils within said distillatory apparatus and composed of pipes the upper wall of each of which is substantially horizontal and the lower wall inclined and with their outlets and fittings arranged to have an uninterrupted fall, feed pipes from said boiler to said heating pipes, and an inclined main return pipe, with vertical connection between it and said heating pipes, having its lowest end entering the boiler above the water line of same and in the steam space thereof, all as shown, and for the purpose set forth. 4th. In a distilling column, a series of superimposed chambers by which the liquid to be distilled is divided into different layers having communicating openings between them of gradually increasing area in an upward direction to accomodate an increasing volume of vapour, and means for heating the liquid in each chamber, as set forth. 5. In a distilling collumn, the combination, with a series of superimposed chambers having connecting openings between them by which the liquid to be distilled is divided into layers, of heating coils located within said chambers and composed of pipes the upper wall of each of which is substantially horizontal and the lower wall inclined, for the purposes set forth. 6th. In distilling apparatus, the combination, with the boiler and a distilling column comprising a lower receiving chamber, a series of superimposed chambers by which the liquid to be distilled is divided into different layers of varying depths, heating coils within, and communicating openings between such superimposed chambers, of main feed and return pipes from and to said boiler, separate branch inlet and outlet pipes, respectively, between said feed and return pipes and each of said chambers, and means for regulating the supply of heat to each of said heating coils, as set forth. 7th. In a distilling column, the combination with a series of chambers, superimposed on each other, of steam piping contained in each and having a separate inlet and outlet, and communicating apertures between each chamber increasing in area upward from that between the first and second chambers, substantially as and for the purposes set forth. 8th. In a distilling column, the combination, with a series of chambers superimposed on and communicating with each other, each provided with steam piping having a separate inlet from main steam pipe and outlet to main return pipe, of trays in same, with overflow increasing in depth in even ratio upward, as and for the purposes set forth. 9th. In combination with each of a series of the chambers *e*, *e*, a gridiron of steam pipes, composed of a cross inlet pipe, communicating directly with main steam pipe, an outlet pipe, and pipes f^1, f^1, connected with both, circular in section at or near the inlet and oval in section at the outlet, as and for the purposes set forth. 10th. In a distilling column, a series of chambers superimposed on each other, each alternate chamber being furnished with a gridiron of pipes, and intervening chambers being each constructed with a central opening from below, communicating with pierced radiating pipes, and an outlet to a main pipe constantly increasing in diameter for carrying off the vapours. 11th. In distilling apparatus, the combination with any approved still, of chambers superposed on each

other, each alternate chamber being furnished with a gridiron of pipes, and the intervening chambers being each constructed with a central opening from below communicating with pierced radiating pipes, and an outlet to a main pipe constantly increasing in diameter for carrying off the vapours.

No. 40,417. Carbon Burner. (*Foyer à carbures.*)

John Henry LaRue, Kansas City, Kansas, U.S.A., 19th September, 1892; 6 years.

Claim.—1st. In a carbon burner, the oil and water supply tank A, the water media receptacle K, provided with a water gauge L, and the burner M, consisting of a series of burning disks P, Q, R, S and T, enclosed by annular guide wall O^1, of the pan O, and provided with a deflecting cap, substantially as described. 2nd. In a carbon burner, the combination of a receptacle A, consisting of a tank and closed within a tank, and communicating with a common outlet or escape pipe I, through the medium of pipes D and E, valves G and H, and horizontal pipes F, substantially as and for the purposes set forth. 3rd. In a carbon burner, the connection between a supply receptacle A, and the burner M, through the medium of the water receptacle K, provided with the gauge L, substantially as and for the purpose set forth. 4th. The burner M, consisting of a series of burning discs of suitably increased size, arranged vertically one above another, and provided with communicating air chambers, and recessed upper surface and grooves, substantially as and for the purpose set forth. 5th. In a burner, the pan O, having the interior annular guide wall O^1, provided with radial lugs N, extending inwardly and supporting the lower disc T, of the series P, Q, R, S and T, said wall having the opening O through its upper surface, the plate or cover C^1, provided with a similar opening O^1, in vertical alignment with and above opening O, of annualar wall O^1, said plate or cover resting upon the annular wall O^{11}, of pan O, and provided with a pivotally arranged deflecting cap F^1, arranged vertically above the openings O^1 and O^1, substantially as and for the purpose set forth. 6th. The combination of a disc P, with the receptacle A, through the medium of the water receptacle K, and feed or supply pipe, secured at its upper end in central opening P^1, of said disc P, and at its lower end in the opening in the upper wall of the receptacle K, substantially as and for the purpose set forth.

No. 40,418. Coin Operated Lock.

(*Serrure actionnée par une pièce de monnaie.*)

Henry Caspar, New Orleans, Louisiana, U. S. A., 19th September, 1892; 6 years.

Claim.—1st. In a coin operated stile, the combination, with a post, of a lock secured thereto, a series of wings or doors rotatable around the post and lock, two bolts within the lock one end of which projects out into the path of the wings, and a latch for locking one of the bolts, said latch being adapted to be released from the bolt by a piece of money introduced into the lock, substantially as specified. 2nd. In a coin operated stile, the combination, with a post of a lock secured thereto, a series of wings or doors secured to rings around the posts by means of arms, a rim in the inner edge of each door at the lock, two bolts in the lock, one end of each of which projects out into the path of the rims and one bolt having its end bevelled or inclined, and having its side within the lock provided with a shoulder, a latch for locking the other bolt, and adapted to be released from the bolt by a coin forced against it by the shoulder on the first mentioned bolt, substantially as described. 3rd. In a coin operated turn stile, the combination, with a series of doors movable around a common centre, of a lock having bolts projecting into the path of the doors, a latch for locking one of the bolts, and adapted to be operated by a coin, a plate below the coin, the free end of which projects into the path of the doors and is operated thereby to release the coin, substantially as described. 4th. In a coin operated turn stile, the combination, with a series of doors movable around a common centre, of a lock having a slot in its top, of bolts projecting out into the path of the doors, of a post having an arm for obstructing the slot, and a laterally projecting pin, and a plate pivotally secured within the lock for engaging with the pin, and having its free end projecting out into the path of the doors, substantially as specified.

No. 40,419. Process of Preparing Charbon.

(*Procédé pour préparer le charbon.*)

Leopold Zwillinger, Vienna, Australia, 19th September, 1892; 6 years.

Claim.—1st. The improvement in the process of charring organic matter, which consists in removing the gases and vapours from the charring retort by means of a current of atmospheric air, previously partly deprived of its oxygen and saturated with vapour of water by passing it through water, substantially as and for the purpose set forth. 2nd. The improvement in the process of charring organic matters, which consists in removing the gases and vapours from the charring retort by means of a current of heated atmospheric air, previously partly deprived of its oxygen and saturated with vapour of water by passing it through water, substantially as and for the purpose set forth. 3rd. The described process of charring organic matters, this process consisting in enclosing the material to be charred in retorts, communicating with condensers and heated from without, and forcing a current of atmospheric air through a layer of water, into the said retort, substantially as and for the purpose described. 4th. The described process of charring organic matters, this process consisting in enclosing the material to be charred in retorts, communicating with condensers and heated from without, and forcing a current of heated atmospheric air through a layer of continually renewed water into the said retort, substantially as set forth. 5th. The described process of charring organic matter, this process consisting in enclosing the material to be charred in retorts, communicating with condensers and heated from without, and forcing a current of heated atmospheric air through a layer of continually renewed water, and through a heating apparatus into the said retort, substantially as and for the purpose described.

No. 40,420. Machine for Dressing the Granular of Pulverulent Substances. (*Machine pour préparer et reparer les substances granulaires et pulvériseés.*)

Robert Creaser, Maryborough, Queensland, Australia, 19th September, 1892; 6 years.

Claim.—1st. In a machine for separating or dressing flour, grain, &c., and other pulverulent and granular substances, a series or arrangement of discs fixed to a vertical spindle or shaft whereby the material manipulated is impelled in a direct line towards the screen or cover P, as hereinbefore substantially described and as shown in accompanying drawings as and for the purpose set forth. 2nd. In a machine for separating or dressing flour, grain, &c., and other pulverulent and granular substances, the arrangement and series of discs fixed one above another and revolving horizontally substantially as hereinbefore described and as shown in accompanying drawings, as and for the purpose set forth.

NO. 40,421. Cutter for Railway Rails.

(*Appareil pour couper les rails de chemin de fer.*)

Eugene H. Angell, Ouray, Colorado, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. A tool for cutting railroad rails, consisting of a stock 28, having a slot cut through it at one extremity, a bit 27, inserted in the slot of the stock and retained therein by frictional contact of the parts, the thickness of the bit being equal to or greater than that of the stock to enable the stock to enter and move within the path out in the rail by the bit, substantially as described. 2nd. In a device for cutting railroad rails, a tool 22, consisting of a stock 28, having a slot cut through it at one extremity and provided with grooves on each side of the slot, a bit 27, inserted in the slot of the stock, the bit being provided with tongues on its opposite edges to fit within the grooves on each side of the slot, the thickness of the bit being equal to or greater than that of the stock, substantially as described. 3rd. In a device for cutting railroad ties, the combination, of a tool 22, composed of a stock 28, and a removable bit 27, a base 1, a sliding plate 6, moving within a suitable track or way in the base, vertical guide bars 7 and 8, secured to plate 6, a cross bar 9, connecting the guide bars, a ratchet wheel 10, secured to the bar 9, a block 13, adapted to move vertically upon bars 7 and 8, and to which block the tool 22, is secured, a screw 12, passing through ratchet wheel 10, and connected at its lower extremity with the block 13, suitable pawls adapted to engage ratchet wheel 10, and suitable means of imparting a reciprocating movement to tool 22, and its connections, substantially as described. 4th. In a device for cutting railroad rails, a suitable base 1, a plate 6, adapted to slide within a track formed in the base, a cutting tool 22, a suitable frame secured to plate 6, and adapted to support the cutting tool, and suitable means of imparting a reciprocating movement to plate 6, substantially as described. 5th. In a device for cutting railroad rails, a base 1, a plate 6, adapted to slide with a track formed in the base and provided with a cogged track or way 30, a cutting tool secured to plate 6, and adjustable vertically therein, and a segment 31, pivoted to the base and adapted to move back and forth in rack 30, thereby imparting a reciprocating movement to the sliding plate and its connections, substantially as described. 6th. In a device for cutting railroad rails, a base 1, provided with a suitable vice underneath for holding the rail, a plate adapted to slide with the base, a tool 22, composed of a stock and a removable cutting bit, a vertical frame secured to the sliding plate, a block 13, adjustable vertically upon said frame, and provided with a recess 21, somewhat wider than the cutting tool, said tool being pivoted within said recess, a ratchet wheel secured to the top of the frame, a rack 24, suitably supported upon standards 3 and 4, connected with the base, a screw shaft journalled within rack 44, and composed of a right and left screw 43, two screw blocks, one on the right and the other on the left portion of the screw, and a pawl 50, attached to each screw block and adapted to engage the ratchet wheel 10, and means for imparting to plate 6, and its connections a reciprocating movement, substantially as described. 7th. In a device for cutting railroad rails, a base provided with a vice for the rail, a plate 6, adapted to slide within a suitable track formed in the base, a vertical frame secured to the plate, a block 13, adapted to move vertically upon such frame and provided with a recess 21, somewhat wider than the cutting tool, a cutting tool composed of a stock and a removable bit, said tool being pivoted within a recess 21, of block 13, a bar 24, secured to the upper portion

of the tool and provided with arms 25, hanging bars 26, attached to a cross bar 5, said bar being supported by standards connected with the base of the machine, bars 26, being adapted to engage arms 25, a ratchet wheel secured to the top of the vertical frame, suitable pawls for engaging the ratchet wheel, a screw 12, passing through a suitable aperture in the ratchet wheel and having its lower extremity connected with block 13, and means for imparting a reciprocating movement to the sliding plate and its attachments, substantially as described. 8th. In a device for cutting railroad rails, a tool 22, consisting of a stock 28, having a slot cut through it at one extremity, and provided with tongues on each side of the slot, a bit 27, inserted in the slot of the stock, the bit being grooved on its opposite edges to correspond with the engaging tongues on each side of the slot in the stock, and held therein by frictional contact, the thickness of the bit being equal to or greater than that of the stock, substantially as described.

No. 40,422. Process of Testing Substances.

(Procédé pour éprouver les substances.)

Thomas Clement, Glasgow, Scotland. 20th September, 1892; 6 years.

Claim.—1st. The herein described process of ascertaining the amount of a constituent element of any desired material by means of a substance or neutralizer having a chemical affinity for said element, the same consisting in mixing with said material a substance or "indicator" having a less chemical affinity for said neutralizer than has the said constituent element, then subjecting said mixture to an amount of said neutralizer in chemical excess of said constituent element, whereby, after the neutralization of said constituent element, the "indicator" is attacked by said excess and produces a noticeable result, substantially as set forth. 2nd. The herein described process of ascertaining the amount of a constituent element of any desired material by means of a substance or neutralizer having a chemical affinity for said element, the same consisting in mixing with said material a substance or "indicator" having a less chemical affinity for the said neutralizer than has the said constituent element, then subjecting said mixture to an amount of said neutralizer in chemical excess of said constituent element and agitating said mixture, whereby the said neutralizer permeates the entire mixture, and, after the neutralization of said constituent elements, attacks the "indicator" by said chemical excess and produces a noticeable result, substantially as described. 3rd. The herein described process of ascertaining the acidity of milk, &c., by means of a neutralizer, of the lactic acid of said milk, the same consisting in mixing with the milk substance or "indicator" having a less affinity for said neutralizer than said lactic acid, then subjecting said mixture to an amount of said neutralizer in chemical excess of the lactic acid, whereby, after the neutralization of said acid, the "indicator" is attacked by the said excess and produces a noticeable result, substantially as specified. 4th. The herein described process of ascertaining the acidity of milk by means of an alkali, the same consisting in mixing phenolthaline with the milk, then subjecting the mixture to the action of an amount of said alkali in chemical excess of the lactic acid of the milk, whereby, when the said acid is neutralized, the phenolthaline is attacked and changes the colour of the milk, substantially as described.

No. 40,423. Field Range. (*Poêle de camp.*)

John Marcee, Fort Leavenworth, Kansas, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. In a field range, the boiler having a removable cover, upwardly bent bails at the ends, and legs pivoted on the bails and adapted to extend below the boiler bottom, substantially as described. 2nd. In a field range, the boiler having a removable cover, upwardly bent bails at the ends, and bent legs pivoted on the bails so as to extend below the boiler bottom and across the boiler top, the legs being of such a length that their free ends may be locked beneath the bails, substantially as described. 3rd. In a field range, the oven comprising a series of open topped sliding pan like sections adapted to fit one within the other, and an extensible cover for the oven, substantially as described. 4th. In a field range, the oven comprising a series of pan like sections to slide one within the other, the sections having extension ends adapted to overlap adjacent sections, and an extensible cover for the oven, substantially as described.

No. 40,424. Station Annunciator and Advertising Apparatus. (*Indicateur de station et appareil d'annonce.*)

George Washington Robertson, 90 Queen St., Cheapside, London, England, 20th September, 1892; 6 years.

Claim. 1st. A station annunciator and advertising apparatus for railway carriages, consisting of a case g entering the roof of the carriage, a glass front g^3, and glass end g^4 to such case, endless chains j passing around chain wheels i^1, fixed on shafts i, i^*, and carrying grooved arms j^2, cards on tablets k fitting such grooved arms, tablet retaining spring clips j^3, toothed wheel h fixed on the axis i, pawls g^2 for operating such toothed wheel, a slide f for carrying such pawls, and a lever e^2, shaft e^1, lever e^1, connecting rod e^6, lever e^5, shaft e, lever e^1, and fixed cam d, for giving motion to the slide f, substantially as herein shown and described. 2nd. A station annunciator and advertising apparatus for railway carriages, a case g formed with the glass front g^3, endless chains j passing around chain wheels i^1 in such case, advertising and station annunciating tablets k, k^2, carried by such chains, and apparatus operated by fixed cams d for giving motion to such endless chains, substantially as herein shown and described. 3rd. In station annunciating and advertising apparatus for railway carriages of the character above referred to, advertisement tablets k, carried by endless chains j, and supplemental station indicating tablets k^2, removably attached to the tablets k, substantially as herein shown and described. 4th. In station annunciating and advertising apparatus of the character above referred to, a fixed operating cam d at different points of the permanent way, and operating lever e^1 acted upon by springs to keep it in its normal position and yet permit of motion thereto on its touching the ground or meeting with any obstruction. 5th. In station annunciating and advertising apparatus of the character above referred to, a toothed wheel h on one of the axes carrying the endless chain j, and pawls g^2, normally placed at equal distances from such wheel h, and carried by a slide f, capable of being moved in either direction according to the direction of motion of the carriage, substantially as herein shown and described. 6th. In station annunciating and advertising apparatus of the character above referred to, the combination therewith of a bill for drawing attention thereto on the announcement of every fresh station and advertisement.

No. 40,425. Car Coupler. (*Attelage de chars.*)

John H. Eakins, Detroit, Michigan, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. The combination, of the pivoted rod A, provided with a loop at its centre, the coupling pin connected by a chain with said loop, and the rod T, pivoted within the draw head, substantially as and for the purpose described. 2nd. In a car coupling apparatus, substantially as described, a detachable link J, by which the coupling link J, is attached to the chain, substantially as shown and described. 3rd. The rod A, provided with handles E, E, at its ends supported at its bearings horizontally on the end of a car, said rod being bent to form the loop M, and the loop C, at the part of the loop M, which is farthest from said rod, substantially as shown and described. 4th. The combination, of the rod F, and the chain G, and the draw bar P, having its end hollowed, substantially as shown and described. 5th. The combination, of the pivoted rod A, provided with arms F, F, at its ends, the coupling pin connected by a chain with an arm on said rod, and a stud whereby the motion of the rod A, is limited to a point at which the coupling pin is still within the draw head, substantially as shown and described.

No. 40,426. Sewing Machine. (*Machine à coudre.*)

Harriet Ruth Tracey, New Brighton, New York, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. In a sewing machine, in which a reciprocating eye-pointed needle is employed, a driving shaft provided with a rounded oblong or rounded polygonal engaging end, in combination, with a correspondingly provided case or shuttle mounted loosely against the said end contiguous to the needle, there being complemental means upon the opposite face of the shuttle to engage and support the same, and driven from the shaft by the described rounded oblong or rounded polygonal engaging end thereof, the case or shuttle having a thread engaging device and a continuous opening, whereby the loop of thread thrown out by the needle will be taken up by the thread engaging device, be spread over the outer surface of the shuttle, and be passed through the juncture thereof with the driving shaft to be locked by the thread from the shuttle. 2nd. The combination, with a shuttle having a circumferential slit, of the peculiar beak, as and for the purpose described.

No. 40,417. Hot Water Furnace. (*Calorifère à eau.*)

Eugène Solomon Manny, Montreal, Quebec, Canada, 20th September, 1892; 6 years.

Réclame.—1ère. Le syphon injecteur H partagé en deux sections, a l'aide de la division verticale I, tel que décrit. 2ème. Dans une fournaise à eau chaude, le pot a feu B ayant son espace encentrique N, partagé en deux sections Q, R, à l'aide de la division horizontale O, tel que décrit. 3ème. L'ouverture P, ménager dans la division O, chaque coté de la porte à feu, t'elle que décrit. 4ème. Dans une fournaise à eau chaude, les sections C, D, E, F, G faisant leur circulation en arrière, à l'aide d'une seule ouverture ou passage T, tel que décrit. 5ème. Dans une section de fournaise à eau chaude, le diaphragme horizontal U, relié à la division X, a l'aide de la paroie en lame d'hélice V, tel que décrit. 6ème. Dans le diaphragme U, l'ouverture centrale e, e, tel que décrit. 7ème. Dans l'intérieur d'une section de fournaise à eau chaude, une division p^1 formant une espace isolé n, n, destiné à chauffer l'eau d'un réservoir indépendant de la fournaise, tel que décrit et pour les fins indiquées.

No. 40,428. Gas Engine. (*Machine à gaz.*)

The Evans Gas engine Company, Camden, New Jersey, assignee of Edward W. Evans, Philadelphia, Pennsylvania, U. S. A., 20th September, 1892; 6 years.

Claim. 1st. In a gas or other engine, the combination, with the piston cylinder, piston, and its connected power transmitting gear of a balance valve consisting of a fixed body portion having a combined supply and mixing port, a combined exhaust and outlet port, and combined port communication with the piston cylinder, and two movable portons, one on each side of said fixed portion, mounted on a shaft extending through the latter and rotating therewith, each of said movable portions provided with a pocket adapted to communicate with their respective ports in the fixed portion at predetermined intervals, as described. 2nd. In a gas engine, a balance valve of the character herein described, consisting of a fixed body portion, having a combined supply and mixing port, a combined exhaust and outlet port, and combined port connection with the compression cylinder, two movable portions one on each side of said fixed portion, mounted on a shaft extending through the latter and rotating therewith, each of the said movable portions provided with a pocket adapted to communicate with their respective ports in the fixed portion at predetermined intervals, and means for timely exploding a charge of gas when taken into the engine, whereby a charge of gas may be taken into the engine and in turn compressed, exploded and exhausted, for the purposes set forth.

No. 40,429. Water Heater. (*Calorifère à eau.*)

Robert Francis Walsh, Peoria, Illinois, U.S.A., 20th September, 1892; 6 years.

Claim. The water box C located in front of the boiler flues, a jacketed smoke stack over said box, and a pipe connecting the box and jacketed smoke stack, in combination with the pipe E leading from the smoke stack to the tender, and the pipes E^1, E^2, leading to the tender and train for the circulation of the heated water, and the coil G within the tender, and the cocks n, n^1, by which the water is cut off from the train and made to circulate through the coil, substantially as described and for the purpose set forth.

No. 40,430. Ink Bottle, (*Cornet à encre.*)

William George Collins, 5 South Arlington Avenue, East Orange, New Jersey, U.S.A., 20th September, 1892; 6 years.

Claim. 1st. The ink bottle having the bottom pressed up from the underside forming a hollow ridge around the dipping cup, the chamber f^2 in which extends out through the periphery of the bottle, substantially as set forth. 2nd. The process of making ink bottles which consists in pressing in the molten walls of the bottle and forming a hollow separating ridge at the side of the dipping cup simultaneously with blowing the body and top of the bottle, substantially as set forth. 3rd. The improved ink bottle having substantially level base or bottom enabling the same to rest firmly on the table, and having the walls thereof pressed in from the outside forming a hollow ridge between the dipping cup and the main reservoir, the chamber f^2, in which ridge extends out through the periphery of the bottle, substantially as set forth. 4th. The improved ink bottle herein described having substantially level bearings at the bottom to engage the table and secure a firm support, and having a dipping cup therein elevated above the inner surface of said bottom and separated from the main reservoir by a hollow wall, the hollowness or concavity in which last opens outwardly, the said dipping cup being in one integral piece with the bottom, top and sides of the bottle, substantially as shown and described. 5th. The ink bottle or stand herein shown and described, combining a body portion, a dipping cup open beneath, and a lug a^5 to support said cup, all formed of one integral piece, substantially as set forth. 6th. The improved ink stand, consisting of an integral piece of glass embodying a body portion and its main chamber, a dipping cup and its supplemental chamber arranged at one side and elevated as described, and legs on opposite sides of said cup to support the same, substantially as set forth. 7th. The improved ink bottle herein described, consisting of an integral piece of glass having a main chamber and a dipping cup at one side thereof, and having at the sides of said dipping cup hollow legs, the interior of which form a part of the main chamber, substantially as set forth. 8th. The improved ink bottle herin described, combining therein a top a^1, having a mouth o, a flat bottom providing a firm bearing on the table, a curvilinear or turned ridge hollow on the interior side and separating the chamber of the dipping cup from the body chamber, said cup being formed beneath the mouth, and said top, bottom, ridge and cup being all one piece, substantially as and for the purposes set forth.

No. 40,431. Stopping Mechanism for Knitting Machines. (*Mécanisme d'arrêt pour machine à tricoter.*)

George James Manderfield, Ryersford, Pennsylvania, U.S.A., 20th September, 1892; 6 years.

Claim. 1st. The combination of a shaft, a fixed wheel thereon having a notched rim, a driving wheel loose upon the shaft and having a tooth to engage the notched rim of the fixed wheel, a spring encircling the shaft and holding the wheels normally apart, a cam projection on the bearing for the shaft, and a cam-shaped lever working between the bearing and the hub of the loose wheel, substantially as described. 2nd. The combination of a shaft, a fixed wheel thereon, a loose wheel thereon, a spring encircling the shaft between the wheels and holding them normally apart, a cam-shaded projection on the shaft bearing nearest the loose wheel, a pivoted lever having a cam surface co-operating with the cam on the shaft bearing, and a spring encircling the pivot pin of the lever and holding the latter up to the cam on the bearing, substantially as described. 3rd. In a stop motion for knitting machines and the like, the combination of an operating shaft, a drive wheel normally loose thereon, a wheel fixed on the shaft and adapted to be engaged with the loose wheel, a cam shaped lever for forcing and holding the wheels together, a spring catch for holding the lever up to its work, a weight arranged to strike and release the spring catch, a guide through which the yarn passes, and an electric circuit including the guide and the mechanism for dropping the weight, substantially as described. 4th. The combination of a shaft, a wheel fixed thereon and having notches, a driving wheel normally loose on the shaft, a spring encircling the shaft between the wheels and holding them normally apart, a weighted cam-shape lever for forcing and holding the wheels together, and a spring catch for holding the lever up to its work, substantially as described. 5th. The combination of a shaft, a wheel fixed thereon, a driving wheel loose thereon, a spring encircling the shaft between the wheels and holding them normally apart, a cam on the shaft bearing adjacent to the loose wheel, and a wedged-shaped cam working between the bearing and the loose wheel for causing it to engage the fixed wheel, substantially as described. 6th. The combination of a shaft, a wheel fixed thereon, a driving wheel loose thereon, a spring encircling the shaft between the wheels, a cam on the shaft bearing adjacent to the loose wheel, a pivoted lever having a wedged-shaped cam and the loose wheel, and a catch for holding the lever up to its work, substantially as described. 7th. The combination of a shaft, a wheel fixed thereon, a drive wheel loose thereon, a spring encircling the shaft between the wheels, a cam on the shaft bearing adjacent to the loose wheel, a pivoted lever having a wedged-shaped cam and adapted to work between the shaft bearing cam and the loose wheel, a catch for holding the lever up to its work, and the lever weighted to fall upon the release of the catch, substantially as described. 8th. In a stop motion for knitting machines and the like, the combination of an operating shaft, a drive wheel normally loose thereon, a fixed wheel on the shaft, a spring interposed between the wheels and holding them normally apart, a weighted cam-shaped lever for forcing the wheels together and holding them in engagement, a spring catch for holding the lever up to its work, a weighted trip arm for the catch, a magnet whose armature is arranged to hold the trip arm elevated, a guide through which the yarn passes, and an electric circuit including the guide and the magnet, substantially as described.

No. 40,432. Mold for Heel Stiffeners.

(*Moule pour renforcir les talons de chaussures.*)

William Cullen Stewart, Lynn, Massachusetts U. S. A., 20th September, 1892; 6 years

Claim. 1st. A counter molding machine, embracing in its construction a stationary mold or last, pivoted vertically, movable divided molds adapted to conform to the stationary last and to be clamped thereon, and means substantially as herein described, for actuating the divided molds to engage and compress the same upon the counter or stiffener on the stationary mold at or near the heel or base, moving down on the sides of the same, and then compressing the said divided molds uniformly upon all parts of the counter, and means for first opening the divided molds before raising the same, as set forth. 2nd. A counter molding machine, comprising in its construction a stationary mold or last, movable divided molds, a movable support to which said movable molds are pivotally connected, a friction bearing for the said support to retard or resist its movement, and a clamping or pressing device for pressing upon the sides of the movable molds, as set forth. 3rd. A counter molding machine, comprising in its construction a stationary mold or last, movable divided molds, a movable support to which said movable molds are pivotally connected, a friction bearing for the said support to retard or resist its movement, blocks o pivoted to the movable molds, and movable inclined presser blocks m^1, to act upon the blocks o, as set forth 4th. A counter molding machine, embracing in its construction a stationary mold or last, movable divided molds, a pivot pin s above the seam point d^1 upon which the movable molds are adapted to rock or oscillate, a movable support for the molds connected with the said pivot pin, a friction bearing for the said support to retard or resist its movement, and a clamping or pressing device for pressing upon the sides of the movable mold, whereby the molds may first be rocked upon the said pivot pin, and then upon their bodies at the seam point d^1, and compressed upon the material on the stationary last, as set forth. 5th. In a counter molding machine, the combination, with the stationary mold, of the movable molds, the pin s upon which the molds are pivoted, the said pin being located above the seam point, the sliding block o pivoted upon the movable molds, springs interposed between the pivoted ends of the molds and the sliding blocks, and the compressing blocks or bed m^1, as set forth. 6th. In a counter molding machine, the combina-

tion, with the stationary mold, of the movable molds, the pin s upon which the molds are pivoted, the said pin being located above the seam point, a movable support for the said molds connected with the said pin, a friction bearing w for the said support to resist or retard its movement, the sliding blocks o pivoted upon the movable molds, springs interposed between the pivoted ends of the molds and the sliding blocks, and the compressing blocks or bed m^1, as set forth. 7th. A counter molding machine, embracing in its construction molding devices, a flange setting slide, a rotary shaft h, a crank j^1 provided on its end with a laterally projecting pin, a rock shaft o^1, levers n^1, t^2 connected with the said rock shaft, levers m^2, s^1, connected at one end to the levers n^2, t^2, and provided at their other ends with notches adapted to be engaged by the pin of crank j^1, lever p^1 connected with the shaft s^1, and link bar q^1 connecting the lever p^1 with the flange setting device, as set forth.

No. 40,433. Car Coupler. (*Attelage de chars.*)

Daniel Grant, Bath, Ontario, Canada, 20th September, 1892; 6 years.

Claim.—In a car coupling, the combination of the draw head A having the flaring mouth a and parallel throat a^1, slot a^{11} and groove a^{111}, the hook B pivoted in the slot a^{11}, and having an undercut shoulder b, slanted nose b^1 and rear shoulder b^{11}, a spring B^{11} pressing the rear end of said hook upwards, and the cam C lying in the recesses a^{111} and secured on the axle C^1 journaled transversely in said head under the point of the hook, substantially as set forth.

No. 40,434. Chair for Railway Rails.

(*Coussinet de rail de chemin de fer.*)

Tom Sayers, Bombay, India, 20th September, 1892; 6 years.

Claim.—1st. A railway joint chair formed or provided with a longitudinal groove or channel corresponding to the cross section of the feet and webs of the rails with which it is used, and having flanges or their equivalents to be secured to a sleeper at the joints, substantially as hereinbefore described and illustrated, and for the purpose stated. 2nd. The formation of railway joint chairs in two pieces, one of which is secured to the sleeper on each side of the rail, substantially as hereinbefore described and illustrated, and for the purpose stated.

No. 40,435. Gang Plow. (*Charrue à plusieurs socs.*)

Richard Logan Penn, Basham's Gap, Alabama, U.S.A., 20th September, 1892; 6 years.

Claim.—A gang plow frame consisting of the draft beam, the long plow beam C, and the short plow beams A, B, D, said beams being connected by bolts with spacers thereon, and said plow beams carrying adjustable plow standards and having the beams A, B, C, marked, respectively, at K, R, T, as shown and described, whereby said frame may carry a single gang of four turn plows or two similar gangs of shovel plows, as shown and described.

No. 40,436. Separator for Flax Seed.

(*Séparateur de graine de lin.*)

David E. Loger, Ocheyedan, Iowa, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. In a flax seed separator, the combination, of the two upper cylinders, one arranged within the other, with the inner one formed with elongated perforations arranged in parallel rows, each row being composed of two lines of perforations, with the perforations extending in opposite oblique directions, and the perforated cylinder located below the upper cylinders, substantially as and for purposes set forth. 2nd. In a flax seed separator, the combination, of the two upper cylinders, one located within the other and formed with the elongated perforations arranged in parallel rows, each row being composed of two lines of perforations, with the perforations extending in opposite oblique directions and extended beyond the end of the outer cylinder, and the perforated cylinder located below the upper cylinders, with its end back of the delivery ends of the upper cylinders, substantially as and for the purposes set forth. 3rd. In a flax seed separator, the combination, of the two upper cylinders rotatable together, one located within the other and perforated, the perforated cylinder located below the upper cylinders, a fan at the end of the lower cylinder adjacent to the discharge end of the upper cylinder, with the sides of the casing extended beyond the end of the upper cylinders to direct an air blast against the seed falling from the upper to the lower cylinder, and a chute extending from the forward end of the fan under the same to the lower cylinder for conveying the material from the upper to the lower cylinder after being subjected to the air blast, substantially as and for the purposes described. 4th. In a flax seed separator, the combination, of the upper cylinders, one located within the other and connected to revolve together, the lower perforated cylinder, the sprocket chain passing around the upper and the lower cylinders, the fan located at the end of said cylinders between the delivery end of one and the receiving end of the other cylinder, and means connecting the fan operating mechanism with the sprocket chain to revolve said cylinders, substantially as and for the purposes set forth.

No. 40,437. Harrow. (*Herse.*)

Andreas Wilfert, Fabacher, Louisiana, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. A harrow section, comprising a series of transverse harrow bars, each of which is provided with a series of substantially V-shaped teeth, the rear edges of which are provided with fingers, substantially as specified. 2nd. A harrow section, comprising a series of transverse harrow bars, each of which is provided with a series of substantially V-shaped teeth having a series of fingers at their rear edges, the teeth of one bar being arranged at an angle to those of the adjacent bars, substantially as specified. 3rd. In a harrow, a series of narrow bars and a series of V-shaped teeth disposed at an angle to each other, the teeth of the bars being increased in number toward the rear bar, substantially as specified.

No. 40,438. Case for Preserving Merchandise in a Moist Condition. (*Boîte pur préserver les merchandises.*)

Henry Doolittle Streator, Galesburg, Michigan, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. The combination of a tray, a case supported above the same, an air passage between said tray and case, air passages in the bottom and upper part of said case, and a moulding attached to said case and projecting downward and outward over said passage between the tray and case, substantially as described. 2nd. The combination of a tray, a case supported above the same, an air passage between said tray and case, air passages in the bottom and upper part of said case, and outwardly and downwardly inclined flanges attached to said case and tray, above and below said passage between said case and tray, substantially as described. 3rd. The combination of a tray, having an outwardly and downwardly inclined flange around its upper edge, and a detached case having legs resting in each corner of said tray, and supporting said case above the same, leaving the air passage between said case and tray an outwardly and downwardly projecting flange attached to the lower end of said case, and air passages in the bottom of said case and near the top of the same, substantially as described. 4th. In combination with a tray, and a case having legs resting in the respective angles of said tray, and supporting said case a short distance above the same, an outwardly and downwardly inclined moulding or flange surrounding and attached to the lower side of the same case, a downwardly and outwardly inclined flange attached to the upper side of said tray, and a curtain attached to the outer edge of said flange, substantially as described. 5th. In a case for merchandise, openings in the bottom and top thereof, screens attached to the bottom covering of said openings, movable valves to close the same, said valves attached to rods journalled in said case, extending outside thereof, and having counter weights attached and cylindrical screens covering the upper openings, said screens having closed tops and perforated sides, substantially as described. 6th. A case for merchandise, having an opening in its bottom and top, screens and valves attached to said bottom and top covering said openings, a tray beneath said case to contain water, and legs at the respective corners of said case, and supporting the same at a distance above said tray, and resting the respective corners of the same, substantially as described.

No. 40,439. Adhesive Material for Driving Belts.

(*Matériel adhérent pour courroies de chasse.*)

Carl Gustav Thoenes and Frederick August Thoenes, both of Dresden, German Empire, 20th September, 1892; 6 years.

Claim.—The herein described manufacture of adhesive material for use on driving belts, by casting, moulding or pressing of material of the kind referred to, produced by boiling earth wax with a sufficient quantity of linseed oil to give it the desired consistency, into a form in which it can be easily handled and applied, as for example into the form of sticks or bars of suitable cross section, whether or not such sticks or bars be partly covered with tin foil, for the purpose specified.

No. 40,440. Harvester. (*Moissonneuse.*)

Thomas C. Wilkins, Independence, Oregon, U. S. A., 20th September, 1892; 6 years.

Claim. 1st. In a harvester, the combination of a horizontal platform carrier, and an endless chain cutter, the active ply of the cutter working in approximately the horizontal plane of the carrier, and the inactive ply working below and in rear of the front edge of the carrier, substantially as described. 2nd. In a harvester, the combination, with the horizontal platform carrier, of an endless chain cutter arranged to work in a plane oblique to the horizontal plane of the carrier, whereby the inactive part of the chain may run under the carrier, so as to bring the front or active part near to the edge of the carrier, substantially as described. 3rd. In a harvester, the combination of the horizontal grain receiving platform, the endless carrier, the finger bar, wheels at opposite ends of the latter set at an oblique angle to the plane of the carrier and projecting in rear of the front edge of the latter, and an endless chain cutter travelling around the wheels, substantially as described. 4th. In a harvester, the combination of the grain receiving platform frame, the bottom boards, the angle iron plate having a horizontal

portion secured to the latter, a vertical portion secured to the finger bar, and an intermediate inclined portion, the front canvas slide secured to the rear edge of the vertical portion, the carrier rollers mounted in the slide at their front ends, brackets to the inclined portion of the plate at its ends, obliquely set wheels carried by said brackets, an endless chain cutter carried by said wheels, and gearing for driving one of the wheels from the belt wheel of the machine, substantially as described. 5th. In a harvester, the combination of the platform frame, the bottom board, the angle iron plate having a horizontal portion secured to the latter, a vertical portion secured to the finger bar, and an intermediate inclined portion, the front canvas slide secured to the rear edge of the vertical portion, the carrier rollers mounted at their front end in the slide, brackets secured to the inclined portion of the plate at its ends, obliquely set wheels supported by said brackets, guard fingers secured to the angle iron finger bar, a guideway running lengthwise of the horizontal portion of the angle iron plate under the carrier roller, an endless chain cutter carried by the wheels and running through the guard fingers and the said guideway, and gearing for driving the said cutter from the main wheels of the harvester, substantially as described. 6th. The combination of the guard fingers having the cutting surface at an oblique angle to the chain guide, with an endless chain cutter having its cutting blades at a corresponding angle to their shafts and the chain links, substantially as described.

No. 40,441. Ore Concentrator.

(*Concentrateur de minerai.*)

Charles Brent, Rat Portage, Ontario, Canada, 20th September, 1892; 12 years.

Claim.—1st. The combination with the frame 2, provided with the rolls 11, 13 and 15, the belt 21, extending around said rolls, the standards 3, to which said frame is pivoted near one end thereof, and the standards 5, arranged near the opposite end of said frame, and means for suitably securing said frame and obtaining vertical adjustment, substantially as described. 2nd. The combination with the inclined frame 2, pivotally supported at one end and adjustable at the other, the rolls 11, 15 and 13, mounted in said frame, the tank 17, with the roll 19, and rotary brush 35, the adjustable roll 25, with lever 29, and the belt extending over said frame beneath the roll 19, and above the roll 25, and with the brush 35, in contact with its under surface, and means for driving the said belt. 3rd. The combination with inclined frame 2, and the belt 21, of the frame 51, hinged to the upper portion of the frame 2, and provided with the rolls 11, over which said belt passes, and with tugs 53, and shaft 55, provided with ratchets or cam wheels 67, arranged to engage said lugs 53, and means for driving the same, substantially as described. 4th. The combination with the frame 2, and the belt 21, passing over said frame of the hinged frame 63, at the upper portion of the frame 2, and provided with the roll 11, and screw 65 for adjusting the inclination of this portion of the belt 21. 5th. The combination with the belt 21, of the clear water distributor 67, provided with the series of perforation 77, and corrugated lip 79, for even distribution of the clear water. 6th. The combination with the belt 21, of the adjustable ore distributor 45, with series of blocks 49, arranged so as to evenly distribute the ore upon the surface of the blanket.

No. 40,442. Gear for Electric Railways.

(*Train de char électrique.*)

George Reade Baldwin, New York, State of New York, U.S.A., 20th September, 1892; 6 years.

Claim.—1st. The combination, of the driving gear, the driven pinion rigid therewith, the revoluble pinion carrying disc, the idler pinions which are mounted on said disc and mesh with the driven pinion, the annular gear which also meshes with the idler pinions, the shaft on which the driving gear, driven pinion, disc and annular gear may revolve freely, the brakes by which the rotation of the annular gear or of the pinion carrying disc may be retarded or stopped, and the clutches by which either the annular gear or the disc may be locked to the shaft, substantially as described. 2nd. The combination, of the driving gear, the driven pinion rigid therewith, the revoluble pinion carrying disc, the idler pinions which are mounted on said disc and mesh with the driven pinion, the annular gear which also meshes with the idler pinions, the shaft on which the driving gear, driven pinion, disc and annular gear may revolve freely, the brakes by which the rotation of the annular gear or of the pinion carrying disc may be retarded or stopped, and the clutches by which either the annular gear or the disc may be locked to the shaft, together with connecting mechanism between said clutches by which only one may be thrown into operation at one time, substantially as described. 3rd. The combination, of the driving gear, the driven pinion rigid therewith, the revoluble pinion carrying disc, the idler pinions which are mounted on said disc, and mesh with the driven pinion, the annular gear which also meshes with the idler pinions, the shaft on which the driving gear, driven pinion, disc and annular gear may revolve freely, the brakes by which the rotation of the annular gear or of the pinion carrying disc may be retarded or stopped, and the clutches by which either the annular gear or the disc may be locked to the shaft, together with connecting mechanism between said clutches by which only one may be thrown into operation at one time, and connecting mechanism between the brakes whereby only one of said brakes may be applied at the same time, substantially as described. 4th. The combination of the driving gear, the driven pinion rigid therewith, the revoluble pinion carrying disc, the idler pinions which are mounted on said disc and mesh with the driven pinion, the brake wheel which is rigidly connected to said disc, the annular gear which also meshes with the idler pinions, the shaft on which the driving gear, driven pinion, disc disc and annular gear may freely revolve, the band brakes which surround the brake wheel and annular gear, and the clutches by which either the annular gear, or the disc, may be locked to the shaft, substantially as described. 5th. In a traction apparatus, the combination of the motor truck, the motor rigidly attached thereto, the main driving shaft geared to said motor and mounted in bearings on the motor truck, two pairs of traction wheels geared on their respective axles, and supporting the motor truck, boxes mounted and rotatable on said axles, flexible extensions to the main driving shaft having their inner ends connected to said main driving shaft by universal joints, and their outer ends stepped into the above mentioned rotatable boxes, and gearing connecting said flexible shaft extensions to the axles of the traction wheels, substantially as described. 5th. In a traction apparatus, the combination of the motor truck, the motor rigidly attached thereto, the main driving shaft geared to said motor and mounted in bearings on the motor truck, two pairs of traction wheels keyed on their respective axles and supporting the motor truck, boxes mounted and rotatable on said axles, flexible extension to the main driving shaft having their inner ends connected to said main shaft by universal joints and their outer ends stepped in the above mentioned rotatable boxes and gearing connecting said flexible shaft extension to the axles of the traction wheels, together with the reversing gear in the line of connections from the motor to the main driving shaft, substantially as described.

No. 40,443. Merry-go-Round. (*Tourniquet.*)

Joseph Charles Fowler, Washington, District of Columbia, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. In a waltzing merry-go-round, the combination, with a main stage or platform having circular motion, of one or more auxiliary stages or platforms, each having a circular movement in common with and a rotary movement independent of the movement of the said main platform, and each auxiliary platform being provided also with suitable seats or supports, substantially as described. 2nd. In a waltzing merry-go-round, the combination, with a main stage or platform having circular motion upon a central shaft, of one or more auxiliary platforms, each carried by and having an independent circular movement with relation to the main platform or stage, each of said auxiliary platforms, as well as the main stage, being provided with suitable seats or supports for the riders, substantially as described. 3rd. In a waltzing merry-go-round, the combination, with a main platform or other support having a central shaft upon which said platform has rotary motion, of one or more auxiliary platforms, each having rotary movement which is independent of that of the main platform, substantially as described. 4th. In a waltzing merry-go-round, the combination, with a main vertical shaft, of a platform of any suitable form rotated by said shaft, one or more auxiliary platforms carried by the main platform and rotated by independent shafts having rigid gears deriving their motion from a rigid gear ring surrounding the main shaft, a series of seats or other supports upon the several auxiliary platforms and one or more ring posts or supports, substantially as described. 5th. In a waltzing merry-go-round, the combination, with a main platform or stage having rotary movement, of one or more auxiliary platforms carried by the main stage or platform and having a series of seats, a series of gears giving independent circular movement to said auxiliary platform or platforms, and so differentiated as to produce a succession of different coincidences of position with relation to one or more given points upon the main stage and an auxiliary platform at each complete revolution of the former, substantially as described. 6th. In a waltzing merry-go-round, the combination, with a main stage or platform mounted on a suitable support, of one or more auxiliary platforms mounted on and carried by the main platform, a system of gearing by which an independent rotary movement may be given to each auxiliary platform, either similarly or differently timed, with relation to each other, and one or more ring posts or supports, substantially as described.

No. 40,444. Apparatus for Loading and Unloading Vessels. (*Appareil pour charger et décharger les navires.*)

John Abbott, 55 Lee Park, Blackheath, Kent, England, 22nd September, 1892; 6 years.

Claim.—1st. The improved loading and unloading apparatus consisting in a shoot having a guard or tippler hinged to its upper end, in combination with a stop arrangement whereby one continued raising of a rope or chain suffices to raise the bucket or other receptacle and deliver its contents, substantially as specified. 2nd. The combination of pulley A, secured by arms B, to a shoot C, a guard or tippler H, hinged to such shoot, and having a stop I secured thereto by ropes, chains or rods K, such stop being also secured to the arms B, by ropes or chains J, and of a rope or chain E, passing through such stop I, to receive a bucket or other receptacle, substantially as specified. 3rd. The combination of shoot C, guard or

tippler H hinged thereto, and carrying pulley A at its upper end, and stops I secured to the lower end thereof, and of a hauling rope or chain E, passing over such pulley A, and through the guard or tippler H, provided with stops J, to receive a bucket or other receptacle, substantially as specified. 4th. The combination with bucket G, having a yoke with an inclined or curved upper surface, of a stop I, through which the rope for raising and lowering such bucket passes, and of a cross bar *k* so arranged in relation to stop I, that the yoke *g* when the bucket is raised is brought into contact therewith before such upward movement is arrested by the stop, substantially as and for the purpose specified. 5th. The improved shoot with its sides c^1, cut away at c^2, and provided with cover plates L, with angle irons l^1, and connected to such sides c^1, by a curved slot and pin connection *l*, substantially as and for the purpose specified.

No. 40,445. Process of and Apparatus for the Manufacture of Varnish. (*Procédé et appareil pour la fabrication du vernis.*)

Heinrich Pfanne, Rixdorf, near Berlin, Germany, 22nd September, 1892; 6 years.

Claim. 1st. A method of producing varnish by the action of an electric current upon linseed oil. 2nd. A method of producing varnish in which an electric current is caused to traverse linseed oil and acidulated water mixed therewith. 3rd. A method of producing varnish, in which an electric current is caused to traverse linseed oil and water, and sulphuric acid mixed therewith. 4th. A method of producing varnish in which an electric current is caused to traverse a mixture of linseed oil and acidulated water kept in constant agitation. 5th. A method of producing varnish in which an electric current is caused to traverse a mixture of linseed oil and acidulated water kept in constant rotary agitation periodically reversed. 6th. A method of producing varnish, in which a mixture of linseed oil with acidulated water is agitated in a vat through which a current of electricity is passed. 7th. A method of producing varnish in which a mixture of linseed oil with acidulated water is subjected to the action of a periodically reversed rotary agitator and to the action of an electric current passing between said agitator and the sides of the vat. 8th. For production of varnish from linseed oil under the action of electric current apparatus comprising in combination a vat having its sides lined with metal plate, a rotary agitating shaft therein, metallic brushes on said shaft, a periodical reversing gear, driving gear for said shaft and a producer of electric current of which the terminals are connected to said plate linings and agitating shaft respectively.

No. 40,446. Cooler for the Human Body and Supporting Frame Therefor. (*Appareil pour refroidir le corps humain.*)

Edwin Belmont Magill, La Crosse, Wisconsin, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. An air cooling device for cooling portions of the human body and reducing fever therein, composed of one or more ice receptacles and air coolers, having guarded air passages in the side thereof, and a frame adapted to support said ice holder and air cooler with capability of vertical adjustment thereon. 2nd. An air cooling device, comprising a central ice receptacle having guarded air passages therein, one or more ice receptacles and air coolers attached to said central ice receptacle, and having guarded air passages therein, suspension devices extending from said air cooler or coolers, and a frame adapted to engage said suspension devices and support the respective air and body coolers with capability of vertical adjustment thereon. 3rd. An air and body cooling device, comprising a central ice receptacle having guarded air passages in its inner walls, one or more ice receptacles removably supported on said central receptacle with capability of horizontal adjustment thereon, and having guarded air passages in the inner walls thereof, a supporting frame, and suspension devices, as hook and eye connections between the frame and ice holder or holders, for securing vertically adjustable supporting connections between said frame and ice holders. 4th. The ice holder and air cooler 1 herein described, consisting of an outer ice receptacle, having air passages in its inner walls, and an air duct or flue communicating with said air passages, and shielding the same from contact with ice and water, and an inner ice holder and air cooler having air passages in its side walls, and an air duct or flue adapted to shield said air passages from ice and water contact. 5th. The ice holder and air cooler 1 herein described, consisting of an outer ice receptacle having air passages in its inner walls, and an open central bottom portion, a central ice holder and air cooler having air passages in its side walls, and of less circumference than and arranged within the central portion of the outer ice holder, and a hood connecting the adjacent walls of the respective ice receptacles and covering the space between the same, and having depending flanges for the purpose of guarding the air passage in the respective ice receptacles from ice and water contact, and of forming air ducts and flues. 6th. An ice holder and air cooler comprising a box having an inner wall having air passages therein, a flange or apron depending across said air passages and within said box for the purpose of shielding said passages from ice and water, and of forming an air duct or flue, and an ice supporting grating arranged within said box above the air duct. 7th. An ice holder and air cooler comprising a box having an inner wall having air passages therein, and an outer wall having an inwardly tapering lowering portion and a suitable waste water exit, a flange or apron depending across said air passages and within said box for the purposes of shielding said passages from ice and water and of forming an air duct or flue, and an ice supporting grating arranged within said box above the air duct. 8th. A body cooler, comprising an ice receptacle having plane outer walls and inner walls having air passages therein and a central ice receiving box having air passages in its side walls, a hood connecting the air conducting walls and depending across and guarding said air passages, horizontal rods extending from the exterior of said ice receptacle, and one or more ice receptacles adapted to be removably supported upon said rods with capability of horizontal adjustment thereon and having an ice supporting grating and flange guarded air passages in the inner walls thereof, a sectional frame having a vertical series of supports thereon and devices as hooks and eyes, upon said ice receptacle or receptacles to engage the supports on the frame whereby a vertically adjustable support is afforded the body cooler. 9th. The cooler supporting frame herein described, consisting of a series of uprights having outwardly flaring feet and a vertical series of supports adapted to engage with the supporting attachments on the cooler, and thereby support the same at different elevations, and hook and eye connections for connecting and bracing the respective uprights or sections of the frame. 10th. A body cooling device, comprising a double walled frame the space between said walls consisting of an ice receiving chamber, said inner wall having a series of air passages and an air deflecting apron and a dished cap or cover adapted to rest upon the double walled frame, and to receive ice and having a central upwardly extending portion having perforated side walls and communicating with an air exit in the bottom of said dished cover, substantially as and for the purpose set forth. 11th. An apparatus for cooling portions of the body by means of cold air currents, and consisting of an ice chamber of a shape to adapt it to fit and conform to that portion of the body to which it is applied, and having a central open portion to receive the part to be cooled and a perforated inner wall communicating with the ice chamber and forming air passages, substantially as set forth. 12th. The body cooler herein described, comprising an ice chamber having an outer plane wall having a water exit, and an inner wall having air passages therein, an apron extending vertically from said inner wall and within the ice chamber for the purpose of guarding the air passages therein and forming an air flue or passage, a water receiving gutter surrounding the outer face of said inner wall and having a discharge passage communicating with the ice chamber. 13th. In a body cooler, a dished ice receptacle having an air passage in the passage in the bottom thereof, and an upwardly extending box surrounding and guarding said opening, and having perforated side walls to permit of the passage therethrough to the opening in the bottom of the ice receptacle of cooled air, substantially as set forth. 14th. A body cooler, comprising a bottom section consisting of a circumferential ice chamber having a perforated inner wall, a vertical apron of air duct connecting said perforations and ice chamber and a waste discharge, and a top section or cap adapted to rest upon said bottom section, and consisting of a dished ice receptacle having an opening in its bottom and a box or hood surrounding said opening, and having perforated side walls to permit of cold air currents passing from the ice chamber to and through the bottom opening, as and for the purpose set forth.

No. 40,447. Apparatus for Sorting Cellulose.

(*Appareil pour assortir la cellulose.*)

Christian Wandel, Reuthingen, Wurtemburg, 22nd September, 1892; 6 years.

Claim.—1st. The combination of the outer chamber *a*, having mounted therein a perforated drum *b* provided with blades *d*, d^1, d^2, etc., arranged as set forth, and having outlets in each end communicating with outlet channels *e*, e^1, and *f*, and having stuffing boxes and glands *g*, *g*, in the manner and for the purpose substantially as described and shown. 2nd. The combination of the outer chamber *a*, having an outlet channel *h* provided with cover *i*, and the rotary drum *b* having blades *d*, d^1, d^2, etc., and perforated with slits *e*, *e*, as specified, having also outlets at each end communicating with the channels *e*, e^1, and *f*, said ends being provided with stuffing boxes and glands *g*, *g*, all parts acting in combination with each other, and for the purpose substantially as set forth and shown.

No. 40,448. Electric Switch and Cut-Out.

(*Commutator et interrupteur électriques.*)

Charles William Huntington, Baltimore, Maryland, U.S.A., 22nd September, 1892; 6 years.

Claim.—In an electric switch, a base of insulating material having a circular groove formed in its face, the bottom of which is in the form of a series of inclined planes, every alternate plane being metallic and the other planes of insulating material, in combination with a circuit controlling element working in the groove adapted to make and break contact with the metallic surface mentioned.

No. 40,449. Diving Dress. (*Habit de plongeur.*)

William Carey, Southampton, England, 22nd September, 1892; 6 years.

Claim.—1st. A diving dress constructed of metal and of such volume or bulk in proportion to its weight and that of the diver that, with the diver therein its specific gravity will be but slightly higher than that of water, for the purpose above specified. 2nd. A diving dress constructed of metal and of such volume or bulk in proportion to its weight and that of the diver that, with the diver therein, its specific gravity will be but slightly higher than that of water, the different parts of the dress being of such relative bulk and thickness that they are buoyant and the diver can move his limbs in the water without undue exertion, substantially as set forth. 3rd. A diving dress provided with spherical joints and constructed of metal of such thickness that it will, without compression of the air in the dress, effectually resist the external pressure of the water, substantially as and for the purposes set forth. 4th. A diving dress provided with spherical joints and constructed of metal of such thickness that it will, without compression of the air in the dress, effectually resist the external pressure of the water, all the parts of the dress being of such volume or bulk in proportion to their weight that they will follow any upward movement of the body or limbs of the diver in the water, substantially as and for the purposes set forth. 5th. The combination, with a diving dress constructed substantially as described, of buoyant metal pipes having spherical joints and of such thickness that they will, without compression of the air therein, effectually resist the external pressure of the water, substantially as and for the purposes set forth. 6th. A diving dress wherein the relatively movable parts are connected by spherical joints having their centres of motion approximately coincident with those of the corresponding joints of the diver's body, substantially as and for the purposes set forth. 7th. A diving dress wherein the helmet or head piece and the trunk or body piece are formed as a single part of the dress, substantially as and for the purposes set forth. 8th. A diving dress wherein the limb casings are united to the body casing by means of spherical joints provided with anti-friction rollers or balls, substantially as and for the purposes set forth. 9th. A diving dress, the relatively movable parts of which are connected by spherical joints having internal pivots, as and for the purposes above specified. 10th. A diving dress having parts thereof formed in halves or sections which are united by clasps or other fastenings and which, when the dress is in use, are held together by the external pressure of the water, substantially as and for the purposes set forth. 11th. In a diving dress, the combination of a spherical joint and a rotary or cylindrical joint for connecting two parts of the said dress, substantially as and for the purposes set forth. 12th. In a diving dress, a spherical joint comprising a slotted outer sphere secured to one part of the dress, and an inner sector of a sphere pivoted in the outer sphere and secured to another part of the dress which works in the slot in the said outer sphere, substantially as and for the purposes set forth. 13th. A diving dress in which, for the purpose of reducing the water pressure or thrust on the movable portion of the joint of each limb, with due regard to the capability of flexible motion of this limb, each limb casing is arranged to work in an elongated opening or slot in the outer covering of the joint, substantially as set forth. 14th. In a diving dress, a spherical joint of the kind hereinbefore described, provided with pivots or ball bearings for the purpose of diminishing the friction between the moving parts, substantially as set forth.

No. 40,450. Railway Time Signal.

(*Signal de chemin de fer.*)

The Fountaine Safety Signal Company, Detroit, Michigan, assignee of Eugene Fountaine, Auburndale, Ohio, all in the U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. In a railway time signal, the combination, with a primary actuating device operated by a passing train, of transmitting mechanism comprising a clockwork with dial indication, a positive mechanical connection between the winding shaft of said clock mechanism and the primary actuating device and between the said winding shaft and the indicating hand on the dial, for winding the clock mechanism and setting the indicating hand by the direct transmission of the initial impulse from a passing train, substantially as described. 2nd. The combination, with the primary actuating device of a railway signal, of indicating clock mechanism having its winding shaft connected to said primary device for winding it by a direct impulse therefrom, and having a dial indication, the index hand of which is moved in either direction by intermediate connection with the winding shaft, said intermediate connection being arranged to operate the hand positively by the movement of the clock mechanism and yieldingly in the opposite direction, substantially as described. 3rd. The combination, with the clock mechanism for operating the index hand of the dial, of the gear wheel O on the winding shaft of said clock mechanism, the rack bar P secured in vertical guide bearings, the lifting lever R adapted to operate said rack bar, the lifting bar S, the bell crank lever T having one arm connected to said bar, and the cable C connecting the other arm of said bell crank with the primary device, substantially as described. 4th. The combination, with the clock mechanism for operating the index hand of the dial, of the gear wheel O on the winding shaft of said clock mechanism, the rack bar P engaging therewith, the vertical guide Q in which said rack bar is guided, the lifting lever R engaging into a vertical slot of the guide Q to operate said rack bar, the vertical lifting bar S adapted to lift said lever, having the extension S^1 adjustably supported thereon, having one arm connected to said bar, the cable C connecting the other arm of said bell crank lever with the actuating primary device of the signal, and a device for adjusting the length of said cable, substantially as described. 5th. The combination, with the actuating clock mechanism of the signal, of the gear wheel O secured upon the winding shaft of said clock mechanism, the vertical rack bar P engaging with said gear wheel, the vertical adjustable post Q, provided with a vertical groove in which said rack bar is held, the lifting lever R guided in a vertical slot Q^2 in the post, the adjustably jointed lifting bar S actuating the lifting lever, the bell crank lever T having one end connected to the connecting bar, the wrist W pivotally secured to the bell crank lever, and the cable C and screw threaded coupling link C^1 adjustably connecting said wrist with the primary actuating device of the signal, substantially as described. 6th. In a railway time signal, a clock mechanism adapted to operate the index hand of a dial in either direction by the movement of the winding shaft through a direct connection between the index hand and said winding shaft, said connection being adapted to rigidly connect the two in the movement of unwinding and yieldingly connect the two in the movement of winding, substantially as described. 7th. In a railway time signal, a clock mechanism adapted to operate the index hand of a dial in either direction by the movement of the winding shaft through intermediate gearing between the index hand and said winding shaft, said gearing having a flexible shaft connection consisting of the shaft sections J^1, J^2, a lost motion connection between the same, and a tension spring J^3 connecting the two shaft sections to take up the lost motion between the same in one direction and form a limited flexible connection in the opposite direction of the movement of said shaft, substantially as described.

No. 40,451. Electrical Locomotives.

(*Locomotive électrique.*)

William Henry Soley, William Washington Perkins, James Wolstencroft, William O'Neil and William H. Yelland, all of Philadelphia, Pennsylvania, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. In combination, the truck having the equaled size traction wheels on its front and rear axles, a motor, a worm gear connection between the ends of the motor shaft and the front and rear axles respectively, said front and rear gearing being differential with respect to each other, the clutches between said differential gearing and the front and rear axles respectively, and means for operating said clutches. 2nd. In combination, the truck having the equal sized traction wheels, a motor, a worm gear connection between the ends of the motor shaft and the front and rear axles respectively, said front and rear worm gearing being differential with respect to each other, the clutches between said differential gearing and the front and rear axles respectively, the connections 14, 15, leading from said clutches to the operating lever above and below the pivot thereof, respectively, substantially as described. 3rd. In combination, the truck, the motor, a driving connection between the front of the said motor shaft and the axle, and a second driving connection between the rear of said shaft and the rear axle, said connections being differential with respect to each other, clutches on the axles, and an idler connection between the axles independent of the motor and its connected mechanism, substantially as described. 4th. In combination, the truck, the motor, the driving connections therefrom to the front and rear axles respectively, the clutches, the idler connections between the axle comprising the shaft and the miter gears, the said shaft being in connection with the motor frame, substantially as described. 5th. In combination, the truck, the motor, the differential worm gearing between the front and rear ends of said motor shaft and the front and rear axles, the casings or boxes enclosing said gearing, the friction clutches also located within said casings, and having sleeves extending through packing glands therein to the outside, and means for operating the clutches connected to the projecting sleeves, substantially as described.

No. 40,452. Compound Press. (*Presse composée.*)

Francis B. Deane and John Wilkins Marshall, both of Lynchburg, Virginia, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. A compound press, consisting of the supporting frame, said frame formed of the bed castings A, the cross head C, the guides I, and brace rods *h* arranged as shown, platens D, F held to slide vertically between said guides I, the ends of the upper platen extended beyond said guides, the centrally pivoted swinging levers B journalled to the bed castings, the short arms C connected to the inner ends of said levers, and to the under face of the lower platen, the long arms E secured at one end to the outer ends of the swinging levers B, and at their opposite ends to the lateral extensions of the upper platen, and means for forcing the lower platen upward, substantially as shown and described, whereby the upper platen will be drawn downward, as and for the purposes described. 2nd. In a compound press, the combination, with the supporting of the guides detachably held thereon, the platens D, F held to slide vertically between said guides, the lower platen formed of a heavier body than the upper platen, whereby to overbalance the same, the connections B, C, E intermediate said platens, whereby the upward

movement of the lower platen will force the upper platen downward, said lower platen adapted to recede when power pressure is released, and thereby draw the upper platen substantially as and for the purpose described. 3rd. A compound press, comprising a supporting frame consisting of the casting A, the cross head G, the brace rods *h* connected to the cross head and the bed plate A, and the guides I, detachably secured at their upper ends to the cross head G, and at their lower ends to the bed plate A, the platens D, F held to slide vertically between said guides I, the intermediate devices B, C, E connecting said platens, whereby they are caused to move toward or from each other, and means for raising the lower platen, substantially as shown and described.

No. 40,453. Process of Treating Metalleferous Ores.

(Procédé de traitement de minérais métallifères.)

George Speller Wright, Charles Ballard and George Marshall, assignees of Francis Hylton Molesworth, all of Adelaide, Australia, 22nd September, 1892; 6 years.

Claim.—1st. In the treatment of metalliferous ores containing sulphides or arsenides, the application during the process of calcination of a per-oxide and preferably of a nitrogen per-oxide, resulting from the application of sulphuric or other acid to crude nitrate of soda, in the manner substantially as herein described. 2nd. In the treatment of metalliferous ores where during the process of calcination, the more perfect oxidization of the sulphides and arsenides is obtained by the application of a per-oxide, and preferably of a nitrogen per-oxide obtained from nitrate of sode, the condensation of the resultant gases whereby a solution containing the nitro-sulphohydrochloric acid is obtained, and the subsequent recovery of the gold or other precious metal by leaching in such solution, the gangue discharged from the calciner, substantially as herein described.

No. 40,454. Cart Saddle. (*Sellette.*)

Ethelbert O. Blackford and Homer Richard Stoughton, both of Shelby, Alabama, U.S.A., 22nd September, 1892; 6 years.

Claim—1st. In a saddle cart, the combination of the roller, the back strap, the series of horizontal rollers supporting the same, and the two series of vertical rollers adjacent to each edge of the strap, and the pads adjustable upon the trees. 2nd. In a cart saddle, the combination of the roller trees, having their inner opposing faces rebated, the series of vertical rollers located in said rebates, the horizontal rollers whose spindles are carried by the said trees, the back strap mounted on the said rollers between the vertical rollers, the slotted plates secured to the said trees and pads connected to said plates so as to be adjustable upon the trees. 3rd. In a cart saddle, the combination, with the two roller trees A, A, and the saddle cover, of the slotted connecting plates D, D, the pads B, B, having back plates B^1, B^1, and suitable devices for adjustably connecting the pads and the plates D, D, the series of horizontal rollers the back strap upon the same and the two series of vertical rollers adjacent to each edge of the said strap, substantially as described. 4th. In a cart saddle, the combination of the roller trees A, A, having rebates A^1, A^1, the plates C^1,C^1, carried by the trees, the roller cover C, the connecting plates D,D, slotted as specified, the pads B,B, having their back plates B^1, B^1, bolts carried by said back plates and having thumb screws, the back strap and the horizontal and vertical rollers therefor, substantially as described.

No. 40,455. Machine for Driving Staples.

(Chasse-crampe.)

Peter Amable Coupal, Boston, Massachusetts, and Alfred E. Towne, Georgetown, Massachusetts, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. In a machine for making and driving staples, the combination, substantially as hereinbefore described, with an anvil, a bender or former, a driver and operating mechanism whereby a length of wire may be bent into a staple and driven by the action of said parts, of a vertically movable work supporting horn, a wire feed arranged to move the wire across the anvil, wire cutters movable toward and from the anvil, mechanism for operating said feed and cutters, and mechanism intermediate of the horn and the feed and cutters through which the feed movement of the wire and the position of the cutters may be simultaneously adjusted by the position of the horn, to adjust the length of the staples to the thickness of the stock. 2nd. In a machine for making and driving staples, the combination, substantially as hereinbefore described, with an anvil, a bender or former, a driver, a wire feed and mechanism for operating said parts, of a vertically movable work supporting horn, a pair of cutters movable toward and from the anvil, mechanism for operating said cutters, and mechanism intermediate of the cutters and horn whereby the position of the cutters relatively to the anvil is determined by the position of the horn, to adjust the length of the staples to the thickness of the stock. 3rd. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver, and mechanism for operating said parts, of a vertically movable work supporting horn, a pivoted lever as *r*, a wire feeding roll on a shaft journalled in a bearing on said lever, connections between said lever and the horn through which the lever is moved on its pivot by movements of the horn, a ratchet affixed to the feed roll shaft, a segmental shield carried by a collar which is loosely mounted on said shaft, a gear on said collar, and a fixed gear on the supporting frame, through which the position of the shield is varied by the movements of the lever, a pawl adapted to engage said ratchet, and means for reciprocating said pawl over the ratchet, the said shield covering a portion of the ratchet, and being interposed more or less between the ratchet and pawl by the movements imparted to it by the movements of the lever, as set forth. 4th. In a machine for making and driving staples, the combination with an anvil, a bender or former, a driver and mechanism for operating said parts, of a vertically movable work supporting horn, a pivot lever as *r*, a wire feeding roll on a shaft journalled in a bearing on said lever, connections between said lever and the horn through which the lever is moved on its pivot by movements of the horn, a ratchet affixed to the feed roll shaft, a segmental shield carried by a collar which is loose on said shaft, a gear on said collar and a fixed gear on the supporting frame through which the position of the shield is varied by the movements of the lever, a pawl adapted to engage said ratchet, an arm carrying said pawl, a loose gear b^1 on the feed roll shaft affixed to said arm, a rack c^1 meshing with said gear, and means for reciprocating said rack and thereby reciprocating or oscillating the pawl, as set forth. 5th. In a machine for making driving staples, the combination with an anvil, a bender or former, a driver and mechanism for operating said parts, of a vertically movable work supporting horn, a pivoted lever as *r*, a wire feeding roll on a shaft journalled in a bearing on said lever, connections between said lever and the horn through which the lever is moved on its pivot by movements of the horn, a ratchet affixed to the feed roll shaft, a segmental shield carried by a collar which is loose on said shaft, a gear on said collar and a fixed gear on the supporting frame through which the position of the shield is varied by the movements of the lever, a pawl adapted to engage said ratchet, an arm carrying said pawl, a loose gear b^1 on the feed roll shaft affixed to said arm, a rack c^1 meshing with said gear, and means for reciprocating said rack and thereby reciprocating or oscillating the pawl, as set forth. 5th. In a machine for making driving staples, the combination with an anvil, a bender or former, a driver and mechanism for operating said parts, of a vertically movable work supporting horn, a pivoted lever as *r*, a wire feeding roll on a shaft journalled in a bearing on said lever, connections between said lever and the horn through which the lever is moved on its pivot by movements of the horn, a ratchet affixed to the feed roll shaft, a segmental shield carried by a collar which is loose on said shaft, a gear on said collar and a fixed gear on the supporting frame through which the position of the shield is varied by the movements of the lever, a pawl adapted to engage said ratchet, an arm carrying said pawl, a loose gear b^1 on the feed roll shaft affixed to said arm, a rack c^1 meshing with said gear, a lever d^1 to which said rack is pivoted, said lever being pivoted to the supporting frame, and a cam g^1 engaged with said lever to oscillate the latter and reciprocate the rack, the latter being adapted by its pivotal connections with the lever d^1 to oscillate and conform to the movements of the feed roll shaft caused by the oscillations of the lever *r*, as set forth. 6th. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver and operating mechanism for said parts, of a vertically movable work supporting horn, a pivoted lever, as *r*, a pair of wire cutters carried by said lever, one of said cutters being affixed to the lever and the other pivoted thereto, connections between the lever and horn through which the lever is moved on its pivots by movements of the horn to carry the cutters toward or from the anvil, and means for operating said pivot cutter, as set forth. 7th. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver and operating mechanism for said parts, of a vertically movable work supporting horn, a wire feed arranged to feed the wire across the horn, wire cutters arranged to sever the wire diagonally at one side of the horn and thereby form points thereon, and a point bending device and mechanism to operate it whereby one of said points is bent, as set forth. 8th. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver and operating mechanism for said parts, of a vertically movable work supporting horn, a pivoted lever, as *r*, a wire feeding roll carried by said lever, mechanism for operating said feed roll, a fixed and a pivoted cutter carried by said lever and arranged to sever the wire diagonally and thereby form points thereon, connections between the lever and horn through which the lever is moved on its pivot by movements of the horn, a point bending device on said lever, and operating mechanism for said bending device whereby one of the points formed by the action of the cutters is bent, as set forth. 9th. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver and operating mechanism for said parts, of a vertically movable work supporting horn, a pivoted lever *r*, a wire feeding roll and a pair of wire severing cutters carried by said lever, a wire guide e^2 between said rolls and cutters, an inclined shoulder w^2 on the lever, a slide fitted to move on the lever and carrying said guide, and means substantially as described, for reciprocating said slide and thereby causing the wire guide to bend one of the points formed by one of the cutters against the shoulder w^2, as set forth. 10th. In a machine for making and driving staples, the combination, with an anvil, a bender or former, a driver and operating mechanism for said parts, a vertically movable work supporting horn, a pivoted lever *r* having a segmental head r^1, a fixed segmental guide *t* supporting said head, connections between the said lever and the horn through which the segmental head of the lever is moved on its supporting guide toward and from the anvil by movements of the horn, a cutter w^1 affixed to said head, a cutter x^1 attached to an arm pivoted to the head, a slide b^{11}, having a segmental head a^{11}, bearing on said arm, and means for reciprocating said slide, the head thereof being adapted to depress the cutter x^1 in any position to which it may be moved, as fet forth. 11th. In a machine for making and driving staples, the combination with an anvil, a bender or former, a driver, and operating mechanism for said parts, of a vertically movable work supporting horn, a lever *r* pivoted to the frame of the machine, wire feeding and wire cutting devices carried by said lever, and the means for connecting said lever with the horn, said means comprising the lever h^1, engaged with the lever *r*, the lever k^1, engaged with the horn supporting standard, and the

connecting rod j^1, as set forth. 12th. In a machine for making and driving staples, the combination with a driver and suitable wire feeding and cutting devices, of the anvil, the cam *n*, lever *k*, and link *o*, whereby said anvil is alternately projected and retracted, the former *p*, the vertical slide p^1, carrying said former, and the cam p^3, engaged with said slide to reciprocate it, as set forth. 13th. The combination with wire cutting and driving mechanism and a fixed supporting frame therefor, of a slide C movable in a guide on said frame, a feed dog pivoted to said slide, the lever D, and cam G, whereby the slide C is reciprocated, and the bell crank lever I, I^1, link L, lever *k*, and cam *n*, whereby the feed dog is vertically reciprocated, as set forth. 14th. The combination with the feed dog A, and its carrying slide C, of the bell crank lever composed of the arms I and I^1, mounted on a stud J, and connected by a spring O, whereby one of said arms is enabled to move independently of the other, and devices connected to one of said arms for oscillating the bell crank lever, the other being engaged with the feed dog, as set forth.

40,456. Pulley Wheel. (*Roue de poulie.*)

Hugh McColl, Ottawa, Ontario, Canada, 22nd September, 1892; 6 years.

Claim.—1st. The herein described sheave, consisting of the parts A, D, screwed together through the threaded part *b*, the part D, and further secured together through the cap screw C, substantially set forth. 2nd. In a pulley wheel or sheave, the cone B, having the apertures G, communtcating from the axial cavity through which the wheel turns on its spindle to the lubricant cavity F of the wheel, substantially set forth.

No. 40,457. Check Punch.

(Machine à perforer les chéques.)

William J. Jenner and Austin J. Roberts, both of New York, assignees of John Clark Robinson, Brooklyn, all of New York State, U.S.A., 22nd September, 1892; 6 years.

Claim.—1st. The combination of a series of dies arranged in the arc of a circle, the swinging arm pivoted at the rear of said dies and carrying at its opposite ends an operating lever pivoted to said arm, and paper carrying rolls and actuating devices therefor, substantially as described, supported on the handle end of the arm over the series of dies. 2nd. The combination of a series of dies arranged in the arc of a circle, the swinging support pivoted at the rear of said dies and carrying at its opposite end a die actuating handle pivoted to said support, and paper carrying rolls and actuating devices therefor, substantially as decribed, supported on the handle end of the support, as and for the purpose described. 3rd. The combination with the geared feed wheels, one of which carries a ratchet disc and a vertically actuated rod, its pawl, the operating lever pivoted to the arm carrying gear wheels, and a series of dies arranged in an arc of a circle on the same side of the pivot for the lever of the operating handle. 4th. The combination in a check punching apparatus, of the feed wheels having a ratchet disc and actuating pawl operated by the handle which acts upon the punches, and an adjustable disengaging pin for disconnecting the pawl from the ratchet before the punch strikes the paper. 5th. The combination in a check punching machine, of feed wheels having actuating devices, substantially as described, connected to the lever for moving said wheels for feeding the paper on the down movement of the lever to actuate the punch, and a trip pin or projection in the path of the actuating mechanism for disengaging the same and stopping the feed operation before the punch or die strikes the paper. 6th. In a numbering and perforating machine, the combination of the actuate series of dies and punches, the paper carrying swing pivoted concentrically therewith, and having its forward end moving directly in rear thereof, and a handle pivoted on said swing, projecting forward and overhanging said punches. 7th. The combination, with the series of stationary punches arranged in the arc of a circle, of the paper carrying and feeding devices mounted on a support movable along the series of punches, and an actuating handle pivoted on said support and overhanging the punches. 8th. In a check punch, the combination, with a segmental row of punches and corresponding dies, of a connected check receiving plate and a feed roller swinging in a suitable support mounted behind the row of punches, a single selecting and actuating lever connected with said plate to move with the same, and mechanism for operating the feed roller from the selecting and actuating lever. 9th. In a check punch, the combination, with a row of punches, of an upper clearing plate and feed roll carried together on a swinging support adapted to swing in a vertical plane, and mounted in turn on a swinging support movable in a horizontal plane, and an actuating handle carried on said swinging support at the end thereof contiguous to the punches. 10th. In a check punch, the series of fixed dies arranged upon the arc of a circle, in combination with a swinging arm pivoted in the rear of and overhanging said dies for the purpose of actuating the same.

No. 40,458. Transfer Ticket for Street Railways.

(Billet de transfert pour chars de rue.)

William E. Whitehead, Toronto, Ontario, Canada, 23rd September, 1892; 6 years.

Claim.—1st. A transfer ticket, having printed on its surface a name, letter, figure or symbol to indicate the particular route, and a series of letters, figures or symbols to indicate the transfer point in the said route, the particular figure, letter or symbol indicating the transfer point being punched out by the conductor issuing the ticket, substantially as and for the purpose specified. 2nd. A transfer ticket, having printed on its surface a name, letter, figure or symbol to indicate a particular route, a series of letters, figures or symbols to indicate the transfer point on the said route, and a series of figures to indicate the number of passengers passed by the ticket, the particular transfer point and number of passengers being punched out by the conductor issuing the ticket, substantially as and for the purpose specified. 3rd. A transfer ticket, having printed on its surface a letter, figure or symbol to indicate a particular route, a series of letters, figures or symbols to indicate the transfer points on the said route, a row of figures, letters or symbols, and a column under each letter, figure or symbol to indicate the hour of the day, all the figures being arranged so that they can be seen from one point of view, substantially as and for the purpose specified.

No. 40,459. Process of Reducing Ores, etc.

(Procédé de réduction des minérais, etc.)

Jacob T. Wainwright, Chicago, Illinois, U. S. A., 23rd September, 1892; 6 years.

Claim.—In the art of reducing unsmelted or partly smelted ore, the improved method of operation which consists in generating gases at successionally increasing temperatures, passing these gases downward through ore, and maintaining this ore in an unreplenished condition, substantially as set forth.

50,460. Combined Flour Bin Sifter and Measure.

(Sas à fleur et mesure combinés.)

Elisha A. Gill, Saint John, New Brunswick, Canada, 23rd September, 1892; 6 years.

Claim.—1st. The flour or receptacle A, funnel-shaped at bottom and provided with a tubular neck, a reciprocating agitator within said bin, consisting of a ring J, provided with radial arms *j*, and having a handle extending through a slot in the wall of the bin, a semi-spherical sieve *f*, secured peripherally to the outlet of said bottom and surrounded by said tubular neck, a rotary spherical agitator having meridinal bars, and journalled within the sieve through the wall of the bin, and provided with a handle G on the outside for rotating said agitator, and a measure or cup A fitting over the orifice of said neck, as set forth. 2nd. The combination with the bin A, having a funnel-shaped bottom, of the semi spherical sieve attached to the outlet, and a rotary agitator formed of meridinal bars journalled within the concavity of the sieve, as set forth. 3rd. The combination with the cylindrical bin A, of the internal reciprocating ring J, provided with radial arms *j*, and having a handle extending through a slot in the wall of the bin, as set forth. 4th. The bin A, having vertical hooks D, D, in combination with the brackets C, having a bar to receive the hooks, and a concave to fit the bin, as set forth.

No. 40,461. Machine for Testing Muscular Strength.

(Machine à essayer la force musculaire.)

Franklin W. Kremer, Cleveland, Ohio, U.S.A., 23rd September, 1892; 6 years.

Claim.—1st. In a coin controlled machine, a pneumatically operating buffer, mounted on one end of a movable rod, a piston head suitably connected with said rod, an air cylinder and an indicator connecting with said air cylinder, substantially as described, 2nd. In a coin controlled machine, the combination with the pneumatic operating striking head or buffer suitably connected with one end of a movable rod, of a piston head mounted on the opposite end thereof, an air cylinder, and an indicator communicating therewith, substantially as described. 3rd. In a coin controlled machine, the combination with the pneumatically operating striking head or buffer mounted on one end of a movable rod, of a piston head secured on the opposite end thereof, an air cylinder and an indicator communicating therewith through a flexible connection, said indicator being normally held locked, substantially as and for the purpose described. 4th. In a coin controlled machine, the combination with the pneumatically operating striking head or buffer, of a piston and air cylinder, the latter communicating with an indicator, said indicator being normally held locked, and suitable means for automatically releasing said lock, substantially as described. 5th. In a pneumatic strength testing machine, the combination, with an air cylinker, of an indicator communicating therewith, said indicator being normally held locked, as set forth. 6th. The combination, with a pneumatically operating buffer mounted on the end of a movable rod having an inclined surface or track, of a bell crank lever carrying a friction roller, the latter being adapted to ride on the incline surface or track of said rod, thereby transmitting motion to the coin operating mechanism, substantially as described. 7th. In a coin controlled machine, the combination, with a pneumatically operating buffer, of a piston rod having an inclined surface or track, a bell crank lever adapted to be engaged and thrown by said incline, said lever being pivotally connected with a sliding dog or pawl, controlling the operation of the coin actuated mechanism, substantially as described. 8th. In a coin controlled machine, the combination, with a pneumatically operated buffer, of a piston rod having an inclined surface or track, a bell crank lever adapted

to be engaged and thrown by said incline, said bell crank lever with a sliding dog or pawl of the coin carrying ratchet, substantially as described. 9th. In a coin controlled machine, the combination, with a coin chute or director, of a coin carrying disc, substantially as described, located adjacent to the lower extremity thereof, said disc having formed on one side a series of pockets or receptacles for the reception of the inserted coins, substantially as set forth. 10th. The combination, with a pneumatically striking head or buffer mounted on a movable rod, said rod having an inclined surface, of a bell crank lever adapted to be operated by said rod to transmit motion to the coin carrying disc, the latter being provided with a series of pockets for the reception of coins, and a spring held arm pivotally secured in the path of the pocketed coins and adapted to be engaged and thrown thereby to release an indicator brake, substantially as and for the purpose described. 11th. The combination, with a coin carrying disc, substantially as described, of a spring held arm pivotally secured in the path of the pocketed coin and adapted to be engaged and thrown thereby and at the same time retaining the coin in one of the series of pockets of said disc, the length of said arm being equivalent to two or more movements of the disc, substantially as described. 12th. The combination, with a coin carrying ratchet disc, as described, of the spring held pivoted arm contiguous thereto, and having an inner curved coin engaging edge approximately concentric with the circumference of the ratchet disc, the length of said engaging edge being equivalent to two or more movements of said disc, substantially as described. 13th. In a coin controlled machine, a pneumatically operating buffer mounted on the end of a movable rod, a piston rod mounted on the opposite end thereof, an air cylinder, an indicator, a flexible connection between said air cylinder and indicator, and a combined non-return and exhaust valve interposed in said connection, substantially as described. 14th. In a coin controlled machine, the combination with a pneumatically operating buffer, of the piston rod having mounted thereon piston head, said head being provided with valves and passages, substantially as described, forming an automatic air inlet or supply, and a self packing ring, substantially as set forth. 15th. In a coin controlled machine, the combination with a pneumatically operating buffer, of a piston rod having mounted thereon a piston head, said head being provided with a circumferential groove with a second annular passage communicating with the interior of an air cylinder through suitable ports b^3, substantially as and for the purpose described. 16th. In a striking machine, the combination with a pneumatically operating buffer, of an automatic piston locking device, comprising a multiple or differential ratchet and pawls as described, the piston locking arm mounted on a spring held rod, the latter carrying the coin actuated arm, said locking arm being adapted to engage a recess or slot of the piston rod, substantially as described. 17th. In a striking machine, a pneumatically operating buffer mounted on the outer projecting end of the piston rod, said rod being provided with a spring pressed pawl adapted to engage and actuate the piston locking mechanism, substantially as described. 18th. In a striking machine, an automatic piston locking device, substantially as described, comprising a double ratchet, the disc of said ratchet being toothed proportionately to the number of actions the machine is set for by the insertion of a coin, the pawl engaging said ratchet, and the piston locking arm mounted on a spring held rod, said rod carrying a coin actuated arm, substantially as described. 19th. In a coin controlled machine, the combination with a pneumatically operating buffer, of the air cylinder and piston, the indicator communicating with said cylinder through a flexible connection, the combined non-return and exhaust valve interposed in said connection, and the operating knob connecting with the controlling lever of said valve, substantially as described. 20th. In a coin controlled machine, the combination with a pneumatically operating buffer, of the air cylinder and piston, the indicator communicating with the said cylinder, the confined non-return and exhaust valve, the operating knob controlling the latter end, the indicator brake, substantially as described. 21st. In a coin controlled machine, the combination with a pneumatically operating buffer, of the air cylinder and piston, the indicator, the non-return and exhaust valve, the operating knob controlling the latter, the piston locking mechanism, substantially as described. 22nd. In a coin controlled machine, the combination with a pneumatically operating buffer, of the piston and air cylinder, and the attached spring for automatically returning said buffer to its normal position, substantially as described. 23rd. In a coin controlled machine, the combination with a pneumatically operating buffer, of the piston and air cylinder, and the signal device adapted to be actuated through arm n, substantially as described.

No. 40,462. Underwaist for Children.

(*Chemise d'enfant*)

George Donald McKay, Aurora, Illinois, U.S.A., 23rd September, 1892; 6 years.

Claim.—1st. The improved child's underwaist, having a central longitudinal opening extending down the back, the portions of the garment on the sides of said opening being connected at the shoulder with corresponding front portions, one or more elastic bands crossing said opening transversely, and another elastic band which is attached to a cross band and extends down to and connects with the body of the garment at the lower edge of the said opening, as shown and described. 2nd. The improved child's underwaist, having a central longitudinal opening extending down the back, the portions of the garment on the sides of said opening being connected at the shoulder with corresponding front portions, one or more elastic bands crossing said opening transversely, a vertical elastic band e, which is attached to one of said cross bands and connects with the lower portion of the body, and the elastic strap d, attached to the latter in alignment with the vertical back band e, as shown and described.

No. 40,463. Feed Trough. (*Auge.*)

Cora B. Snellenberger and Jonathan B. Snellenberger, both of Paulding, Ohio, U.S.A., 23rd September. 1892; 6 years.

Claim. 1st. In a feed trough, the combination, with the base or floor, the opposite end walls, and the intermediate longitudinally disposed trough, of the post 6, the bar 7, surmounting the same, extending above the centre of the trough and parallel therewith, the outer series of pairs of bars 8, having their upper ends nailed to the bar 7, and their lower ends to the edge of the trough, the opposite series of single bars 9, nailed at their upper ends to the bar 7, and at their lower ends to the opposite edge of the trough and alternating with the pairs of bars 8, and the series of strands of wire connected to the post 6, and passed successively around the single bars 9, and pairs of bars 8 substantially as specified. 2nd. In a hog trough, the combination, with the base, the series of vertical partitions rising therefrom and forming compartments, and the trough arranged in rear of the compartments, of the front wall hinged to the base, means for locking the same in a vertical position, and doors formed in the wall opposite each of the compartments, substantially as specified. 3rd. In a hog trough, the combination, with the base and the series of vertical partitions arranged in rear of the same, of the front wall, doors for each of the compartments formed in the wall, a roof mounted on the partitions and opposite each compartment provided with a pair of perforations, and a series of rope sections having their terminals passed through the perforations, so as to form a noose within the compartments, one terminal of each rope section being knotted above the roof and terminating in a hand pull, substantially as specified. 4th. In a hog trough, the combination, with the base or floor and the vertical partitions rising therefrom and forming a series of compartments, of a trough arranged in rear of the compartments, a hog holder arranged in each compartment, a hinged front wall, and doors located in said wall opposite each of the compartments, substantially as specified.

No. 40,464. Mechanism for Actuating the Interlocking Gear of Railway Switches and Signals. (*Mécanisme actionnant les roues à engrenage de raccordement des aiguilles et signaux de chemins de fer.*)

Henry Bezer, New Rochelle, and Thomas William Burley, Long Island City, all in the State of New York, U.S.A., 23rd September, 1892; 6 years.

Claim.—1st. The combination, with a main lever for operating a set of railway switches or a signal, and the catch for holding the said lever in either of its safety positions, fitted with a block E, of the shield K, the rocker F pivoted at G to the sliding base G^1, and connecting with devices for interlocking that face of the rocker F and that of the shield K which each other, and those faces of the rocker F which engage with the block E, being of such arc form that they can assume a position concentric with the said main lever, whether the clutch B is grasped or not grasped during the movement of the said main lever from one to the other of its safety positions, and the rocker F, so controlled that it has next to no rocking movement in any position of the said main lever other than one or the other of its safety positions, substantially as and for the purpose herein described. 2nd. The shield K, in combination with a main lever for actuating a set of railway switches or a signal, the catch for holding the said lever in either of its safety positions, and a rocker connecting with devices for interlocking, substantially as and for the purpose herein described. 3rd. The combination, with a main lever for actuating a set of railway switches or signals, and the catch for holding the said lever in either of its safety positions, of a rocker pivoted to a movable base, substantially as and for the purpose herein described. 4th. The combination, with a main lever for actuating a set of railway switches or a signal, said lever being fitted with a shield K, and the catch for holding the said lever in either of its safety positions, fitted with a block or roller, of a rocker grooved to engage with the block or roller and pivoted centrally with reference to such groove, substantially as and for the purposes set forth.

No. 40,465. Wrecking Machine and Stump Extractor. (*Arrache-souche.*)

John Cornelius, Oakland, Maryland, and Raymond S. Kayler, Alliance, Ohio, both in the U.S.A., 23rd September, 1892; 18 years.

Claim.—1st. The improved machine, substantially as described, comprising the base or bed A provided with socket-like parts B, for the upper ends of the legs, and also provided with lugs I, the legs C constructed at their upper ends to fit in the sockets B, the skids or runners G constructed and adapted to be bolted to the lugs I, and provided with sockets formed to receive the lower ends of the legs C, and the pulling mechanism mounted on the base plate, all substantially as described and shown, whereby the runners may be applied

to the base or be utilized as feet and runners for the legs in the different adjustments of the machine, as and for the purpose specified. 2nd. The improved machine, substantially as described, comprising the base, the legs C connected at their upper ends with such base and provided with arms 4, the step boards supported on the said arms 4, and the pulling mechanism having its drive shaft arranged above the step boards and provided with crank handles, substantially as and for the purposes set forth. 3rd. A machine comprising the base or bed supporting the pulling mechanism, and provided at its opposite sides near its ends with sockets B, and between said sockets B, with sockets h, the skids or runners G, having end sockets F and intermediate sockets h^1, and the legs C fitted at their opposite ends in the sockets B and F, and the intermediate uprights or legs H fitted at their opposite ends in the sockets h and h^1, all substantially as and for the purposes set forth. 4th. In a machine, substantially as described, the combination of the main wheel provided with a worm wheel, the main worm Q meshing with the said wheel and provided with a worm wheel W, the drive worm X, meshing with the latter worm wheel W and the necessary framing, all substantially as and for the purposes set forth. 5th. The improved machine, substantially as described, comprising the main wheel having a worm wheel, the main worm adapted to mesh with said worm wheel and having its shaft extended and adapted to receive either a gear or a worm wheel W, a gear shaft U parallel with the axis of the main worm wheel and having its extended end adapted to receive a gear wheel, whereby gears may be supported on said shaft U and the end of the main worm shaft, and arranged to mesh, and the necessary framing, substantially as and for the purpose set forth. 6th. In a machine substantially as described, the combination, of the main wheel having a worm wheel, the main worm arranged to mesh with said worm wheel, a movable frame R, supporting said main worm, a gear shaft U, also journalled in the said movable frame, the end of the main worm shaft being adapted to receive a worm wheel or a gear wheel, and the end of the gear shaft being adapted to receive a gear wheel and the framing having bearings for the shaft of the drive worm, all substantially as set forth. 7th. In a machine, substantially as described, the combination, of the main wheel having a worm wheel, the main worm adapted to mesh with said worm wheel, a movable frame R, supporting said worm, a pivoted lever 8, connected at one end with the movable frame and arranged to adjust said frame to set its worm into and out of mesh with the worm wheel and a fastening arranged for engagement by the lever whereby to lock the worm in mesh with its wheel, substantially as set forth. 8th. In a machine, substantially as described, the combination, of the main wheel having a worm wheel, a worm arranged to mesh said worm wheel, a movable frame supporting the said worm, the pivoted lever connected at one end with the said movable frame, a hook like fastening and a spring by which to actuate the lever into engagement with the said fastening whereby to lock the movable frame in one of its positions, all substantially as set forth. 9th. In a machine, substantially as described, the combination, of the main wheel provided with a chain wheel L, a worm wheel formed of sections K, arranged on opposite sides of the chain wheel and drums M, arranged outside the said worm wheel sections, the main worm arranged to mesh with the said worm wheel, a worm wheel on the shaft of the said main worm and the drive worm arranged to mesh with such worm wheel, all substantially as and for the purpose set forth. 10th. In a machine, substantially as described, the combination, of the main wheel having a worm wheel K, the main worm Q, meshing with such wheel K, and provided with a worm wheel W, the drive worm X, meshing with said worm wheel W, and having its shaft provided with a crank and a chain wheel I, and the chain 2, engaging said wheel I, all substantially as and for the purposes set forth. 11th. The improved machine, substantially as herein described and shown, consisting of the bed having sockets for the uprights or legs, the legs fitted and pivoted at their upper ends in the said sockets, the main wheel journalled in bearings on the bed and having a worm wheel, the main worm Q, arranged to mesh with said wheel and having a worm wheel W, a drive worm X, meshing the latter worm wheel W, a movable frame R, supporting the main worm Q, a pivoted lever 8, connected at one end with said movable frame, a fastening hook arranged for engagement by the lever and a spring for actuating the lever into engagement with the said fastening hook, all substantially as and for the purposes set forth.

No. 40,466. Hay Ricker. (*Meule à foin.*)

The Aeme Harvester Company, Perkin, Illinois, assignee of Doctor Franklin Oliver, San Francisco, California, U. S. A. 23rd September, 1892; 6 years.

Claim.—1st. In a hay ricker, the combination, with a suitable supporting frame, and wheels whereon said frame is mounted, of pivot journals for the front wheels, a pivoted tongue or pole, suitable guide rods connecting said journals with the tongue or pole, and suitable means whereby said wheels may be secured in different positions, substantially as described. 2nd. In a hay ricker, the combination, with the main frame, and suitable wheels whereon said main frame is sustained, of suitable journals for the front and rear wheels pivotally connected with the axle bars of the main frame, said journals being arranged to extend normally in the plane of the axle bars, and to swing in a horizontal plane, and suitable means whereby said journals may be secured to the axle bars in different positions, substantially as described. 3rd. In a hay ricker, the combination, with the main frame, and suitable whereon said main frame is sustained, of the pivoted journal blocks for said wheels, provided with journals extending normally in the plane of the axle and adapted to swing in a horizontal plane, and suitable means whereby said journal blocks may be bolted to the axle bars in different positions, substantially as described. 4th. In a hay ricker, the combination, with the main base frame, of upright guide bars D, one at each end of the ricker, having suitable grooves or spaces in their opposite edges, and a main carriage provided at its ends with suitable carrier trucks, having wheels to travel upon said bars, said wheels being provided with flanges to enter the grooves or spaces of said bars, substantially as described. 5th. In a hay ricker, the combination, with a main base frame, of the upright guide bars, one at each side of the base frame, the brace bars 80 attached to the upright bars, and to the main base frame, the inclined transverse stay bars 81, and the truss bars 83 and 84, said truss bars being arranged in the inclined position shown, and being fastened to said brace bars 80, substantially as described. 6th. In a hay ricker, the combination, with the main base frame, of the guide bars D, one at each end of said frame, suitable carrier trucks comprising journal yokes E, provided with wheels and adapted to straddle the guide bars, and a main carriage pivotally sustained with respect to said carrier trucks, substantially as described. 8th. In a hay ricker, the combination, with the main base frame, and suitable uprights or guide bars, of suitable carriers adapted to move upon said uprights or guide bars, and a main carriage pivotally connected to said carriers in a manner permitting a vertical inclined movement of said carriage with respect to the carriers, whereby the danger of binding the carriers in case of the uneven lifting of the main carriage is avoided, substantially as described. 8th. In a hay ricker, the combination, with a suitable base frame, of suitable uprights or guide bars, carriers adapted to travel upon said guide bars, said carriers being provided with sockets, suitable journal pins entering the sockets of said carriers and held therein in a manner permitting them to be moved in a vertical direction, and a main carriage sustained by said journal pins, substantially as described. 9th. In a hay ricker, the combination, with the main base frame and suitable guide bars or uprights, of carriers adapted to travel upon said guide bars, said carriers being provided with sockets 24, having oblong recesses 25, suitable journal pins 30 adapted to enter said sockets 24, and provided with suitable guard pins or lugs at their ends, and a main carriage connected to said journal pins 30, substantially as described. 10th. In a hay ricker, the combination, with suitable guide bars, and carriers arranged to move upon said guide bars, of a main carriage, an auxiliary carriage pivotally connected with respect to said main carriage, a suitable bale or rod 60 connected to said auxiliary carriage, a suitable loop 61 connected to said main carriage, and a suitable pawl and trigger carried by said main carriage for engaging and releasing said bale or rod of the auxiliary carriage, substantially as described. 11th. In a hay ricker, the combination, with the main frame, suitable guide bars, and suitable carriers adapted to move upon said guide bars, of a main carriage pivotally connected to said carriers, an auxiliary carriage pivotally connected to said main carriage, suitable tilting levers connected to said carriers, and suitable means for adjustably connecting the ends of said tilting levers with the main carriage, substantially as described. 12th. In a hay ricker, the combination, with the main frame, suitable guide bars, and suitable carriers adapted to move upon said guide bars, of a main carriage pivotally connected to said carriers, an auxiliary carriage pivotally connected to said main carriage, tilting bars connected to said carriers and slotted bars connecting said tilting bars with the main carriage, said slotted bars being provided with suitable adjusting pins, whereby the tilting action of the main carriage can be restricted, substantially as described. 14th. In a hay ricker, the combination, with the main frame, suitable guide bars, and suitable carriers adapted to move upon said guide bars, of a main carriage pivotally connected to said carriers, suitable means for tilting said main carriage, and a check arm for temporarily holding the main carriage until the forward ends of its teeth are tilted upward, substantially as described. 15th In a hay ricker, the combination, with the main frame, suitable guide bars, and suitable carriers adapted to travel upon said main frame, of a main carriage pivotally connected to said carriers, suitable means for raising and tilting said main carriage, an auxiliary carriage pivotally connected to said main carriage, a check arm connected to said auxiliary carriage, a suitable loop or stirrup attached to the main frame for engagement with said check arm, and a latch guide attached to the main frame, whereby the auxiliary carriage is moved into proper position to be locked with respect to the main carriage, and the main carriage is temporarily held during its initial movement, substantially as described.

No. 40,467. Veterinary Operating Table.

(*Table de chirurgie vétérinaire.*)

Joseph P. Sharp, Chicago, Illinois, assignee of Monroe M. Copp, Elm Hall, Michigan, both in the U.S.A., 23rd September, 1892; 6 years.

Claim.—1st. In a veterinary operating table, a tilting platform B, mounted upon a shifting fulcrum and movable from the vertical

beyond the horizontal plane, as and for the purpose set forth. 2nd. In a veterinary operating table, the combination of a supporting frame, a tilting platform mounted toward one end on the frame upon a shifting fulcrum and movable from the vertical beyond the horizontal plane, and adjustable supports upon the frame for regulating the degree of inclination of the platform, as and for the purpose set forth. 3rd. In a veterinary operating table, the combination of a supporting frame A, a platform B, segmental supports for the platform movable in the frame, and affording a shifting fulcrum, moving forward as the platform is lowered and back as the platform is raised, a shaft E, connecting the segmental supports together, and operating mechanism upon the frame connected directly with the shaft to move it back and forth in the frame and rock the segmental supports, as and for the purpose set forth. 4th. In a veterinary operating table, the combination of a supporting frame A, a platform B, segmental supports for the platform movable in the frame and affording a shifting fulcrum, moving forward as the platform is lowered and back as the platform is raised, a shaft E, connecting the segmental supports together, operating mechanism upon the frame connected directly with the shaft to move it back and forth in the frame and rock the segmental supports, and a guide upon the frame for the shaft, as and for the purpose set forth. 5th. In a veterinary operating table, the combination of a frame A, racks D on the frame, segmental supports C, provided on their peripheries with teeth, and mounted at their peripheries upon the racks, a platform B, secured upon the supports C, a shaft E, connecting the supports together, sleeves H, secured to the shaft and movable on guides H^1 on the frame, and means substantially as described, upon the frame for rocking the supports, as and for the purpose set forth. 6th. In a veterinary operating table, the combination of a frame A, racks D on the frame, segmental supports C, provided on their peripheries with teeth, and mounted at their peripheries upon the racks, a platform B, secured upon the supports C, a horizontal shaft E, connecting the supports together, a shaft F, parallel with the shaft E, links *r*, connecting the said shafts together, and means substantially as described, connected with the shaft E for moving the latter and through it the shaft E to rock the supports, as for the purpose set forth. 7th. In a veterinary operating table, the combination of a frame A, racks D, segmental supports C, on the racks, a platform B, mounted on the supports, a shaft E, connecting the supports together, a shaft F, parallel with the shaft E, and movable in guides *o*, on the frame, links *r*, securing the shafts E, F, together, a screw threaded rod G, secured to the shaft F and extending through the back of the frame, an internally threaded pinion *p*, on the shaft G beyond the frame, a pinion p^1, on a crank rod *n*, in mesh with the pinion *p*, the whole being constructed and arranged to operate, substantially as described. 8th. In a veterinary operating table, the combination of a longitudinally movable rod I, screw threaded toward one end and mounted in guides on the back of the platform, hopples *k*, on the front sides of the platform, and connected through the latter to the rod I, and means for moving the rod longitudinally, as and for the purpose set forth. 9th. In a veterinary operating table, the combination with the platform, of means for securing the animal thereto comprising holders *k*, on the platform at points above and below the body of the animal, clamps M, and straps L, substantially as described. 10th. In a veterinary operating table, comprising in combination holders K, on the platform above and below the body of the animal, having bars *h*, h^1, and side bars h^2 extending loosely through the platform, clamps M, and attachable and detachable straps L connecting at their ends with the holders, subtantially as described. 11th. In a veterinary operating table, means for securing the animal to the platform, comprising in combination holders K, on the platform at points above and below the body of the animal, clamps M, and straps L, provided with hooks *f*, substantially as described. 12th. In a veterinary operating table, the combination of a movable platform B, having slots k^1 extending through it, a sliding rod I threaded toward one end, and mounted adjacent to the slots k^1, in guides *i*, i^1 on the rear side of the platform, hoppers *k*, *k* on the front side of the platform connected through the said slots with the rod, an internally threaded hand wheel r^1 on the threaded end of the rod, adjacent to the guide *i*, and operating when turned in one direction to bear against the said guide, and move the rod longitudinally to tighten the hobbles, substantially as described. 13th. In a veterinary operating table, the combination of a platform B, slots k^1 arranged in pairs and extending through the platform, a longitudinally movable threaded rod I supported in guides at the back of the platform to extend adjacent to the slots, an eye i^2 upon the rod, and a band k^2 extending through the eye and at opposite ends respectively through the respective slots of the adjacent pair, hopples *k* on the ends of the band, and means, as the hand wheel I^1 for moving the rod longitudinally, as and for the purpose set forth. 14th. In a veterinary operating table, means for securing a horse to the platform at the neck and body, comprising in combination, adjustable holders *k*, having side bars h^2, which extend loosely through openings in the platform and are of a length greater than the thickness of the platform, and bars *h* on the front, and bars h^1 on the rear sides of the platform, the holders being arranged in series above and below the outline of the space to be occupied by the animals body, clamps M near the top of the platform in line with each series of holders, and straps L, having hooks *f* at one end to engage the lower holders *k*, and pass over the animals body and through the upper holders X, and clamps M, substantially as described.

No. 40,468. Machine for Stacking Hay, Ensilage &c. (*Machine pour mettre le foin, l'ensilage, etc., en meule.*)

Daniel Hector Talbot, Sioux City, Iowa, U. S. A., 24th September, 1892; 6 years.

Claim.—1st. In a machine for stacking hay, ensilage and other material, the combination, with an upright rod, bar or post constituting the centre of the stack, of a conical pressure drum pivotally attached at its apex to the rod, bar or post, and draft mechanism secured to the outer or base portion of the drum, said drum being adapted to revolve upon the top of the stack about its pivot, substantially as shown and described, for the purpose specified. 2nd. In a machine for stacking hay, ensilage and other material, the combination, with an upright rod, bar or post constituting the centre of the stack, of a conical pressure drum pivotally attached at one end to the rod, bar or post, and a shield supported beneath the drum, substantially as shown and described, for the purpose specified. 3rd. In a machine for stacking hay, ensilage and other material, the combination, with an upright rod, bar or post constituting the centre of the stack, of a conical pressure drum pivotally attached at one end to the rod, bar or post, a shield extending beneath the pivoted end of the drum, and casters adjustably secured at one side of the drum, substantially as shown and described. 4th. In a machine for stacking hay, ensilage and other material, the combination, with an upright rod, bar or post, of a frame and conical pressure drum mounted on the frame, said frame and drum being pivoted at one end to said rod, bar or post, and means for revolving said frame and drum about said rod, bar or post, substantially as shown and described, for the purpose specified. 5th. A machine for stacking hay, ensilage and other material, comprising a frame, a conical pressure drum held to revolve in the frame, and a shield connected with the drum, substantially as shown and described. 6th. A machine for stacking hay, ensilage and other material, comprising a frame, a conical pressure drum held to revolve in the frame, an arm swivelled to the smaller end of the drum, and a shield extending beneath the smaller end of the drum and beyond the arm, substantially as shown and described.

No. 40,469. Buckle. (*Boucle.*)

Charles Alexander Mineheart, California, Pennsylvania, U.S.A., 24th September, 1892; 6 years.

Claim.—The herein described double buckle consisting of the blank 1, having openings 2, formed near each end of the same, the sliding pieces 4, provided with tangs 5, the inwardly bent portions 3, to form slides, and the stops 6 and 7, to limit the movements of the said sliding pieces 4, and the said buckle having a large exposed surface for the purpose of stamping the owner's name thereon, substantially as and for the purpose set forth and described.

No. 40,470. Driving Belt. (*Courroie sans fin.*)

Isaac Jackson, Glassop, Derby, England, 24th September, 1892; 6 years.

Claim.—1st. A belt for driving machinery, for conveying grain, and for other like purposes, consisting of two or more parallel belts closely and firmly connected together along their contiguous edges and having their ends non-conterminous, so that the joint across the complete belt cannot be made in a straight line, substantially as and for the purpose hereinbefore described, and as illustrated by the accompanying drawings. 2nd. In a belt for driving machinery, for conveying grain, and for other like purposes, and constructed of two or more narrower belts, means for connecting the edges and ends of the belts firmly together, such means consisting of a hollow or flat top plate having holes at its opposite ends, with staples or split pins passing through the holes and the contiguous edges and ends of the belt, substantially as hereinbefore described and as illustrated by the accompanying drawings.

No. 40,471. Machine for Sorting and Separating Substances. (*Emotteur.*)

John Midgley Risworth, Stephen Ingham and Joseph Vickers, all of Leeds, York, England, 24th September, 1892; 6 years.

Claim.—1st. A machine for sifting and separating semolina, grain and other materials, the distinguishing characteristics of which are a vertical rotating shaft carrying a rotating screw composed of a circular conical or sifting diaphragm, inclined downwards from its axis, and supported from the said rotating shaft, the substances to be sifted being delivered by the shoot onto the conical rotating sieve surface, the larger particles travelling down the outer part of the sieve, while the finer pass through same, as set forth. 2nd. A machine for sifting and separating semolina, grain and other materials, the distinguishing characteristics of which are a vertical rotating shaft carrying several circular conical sifting diaphragms each inclined downwards from its axis, arranged one below the other, the material passing through an upper sieve, being guided onto a lower sieve by reversed conical guides, and so on, whereby the materials are sorted into various grades of fineness, as set forth. 3rd. In a machine for sifting and separating semolina, grain and other materials, a fixed brush bearing upon the conical upper surface of the sieve, or a fixed chain bearing upon the same surface for clearing the meshes of the rotating sieve, as set forth. 4th. In machines for sift-

ing and separating semolina, grain and other materials, a table K, fixed to or carried by the rotating sieve, for receiving the material from the conical sieve, the plough L, for guiding the material from the table through and into an outlet J, as set forth.

No. 40,472. Hernia Truss. (*Bandage herniaire.*)

Charles Cluthé, Toronto, Ontario, Canada, 24th September, 1892; 6 years.

Claim.—1st. In a hernia truss, a cupped plate connected to a body belt made of non-elastic material, having an elastic section inserted in it, a hernia pad flexibly connected to a spindle extending through said plate, a bar connected to the plate and extending over the said spindle, in combination with a non elastic strip arranged to connect the bar to the non-elastic portion of the belt, substantially as and for the purpose specified. 2nd. In a hernia truss, a cupped plate having a slightly concave surface surrounding the cup and connected to a body belt made of non-elastic material, having an elastic section inserted in it, a hernia pad flexibly connected to a spindle extending through the said plate, a spring inserted between the pad and plate, a bar connected to the plate and extending over the said spindle, in combination with a non-elastic strip arranged to connect the bar to the non-elastic portion of the belt, substantially as and for the purpose specified. 3rd. In a hernia truss, a plate connected to a body belt having an elastic section inserted in it, to which plate a hernia pad is flexibly connected and provided with means by which the expansion of the body belt shall impart an inward pressure of the pad against the hernia, substantially as and for the purpose specified. 4th. A hernia pad consisting of a rubber vessel having a thick or stiffened back *b*, inserted into a flanged metal plate H, and expanded by fluid pressure, substantially as and for the purpose specified.

No. 40,473. Lubricant and Steam Packing.

(*Graisseur et garniture à vapeur.*)

Wilson H. Strickler, Dodge City, Kansas, U.S.A., 24th September, 1892; 6 years.

Claim.—A composition of pulverized asbestos, soapstone, mica and oil, substantially in the proportions as and for the purpose described.

40,474. Textile Fabric. (*Etoffe.*)

Joseph Raab, Ludwigshafen, Bavaria, German Empire, 24th September, 1892; 6 years.

Claim.—A textile fabric for underwear, having a moderately close woven ground and a pile or looped surface on the side which is to be next the skin, this surface being arranged in such a manner that the ground is divided into suitable larger or smaller figures or designs, substantially as hereinbefore described.

No. 40,475. Fertilizer. (*Engrais.*)

Thomas Marshall Smith, Baltimore, Maryland, U. S. A., 24th September, 1892; 6 years.

Claim.—1st. In the manufacture of a fertilizer, the improvement which consists in first placing animal substances within a suitable vessel, with a definite amount of water (sufficient only to reduce said materials to a soft or pastry mass while hot); then closing said vessel and subjecting the contents thereof to the action of heat until the texture of the crude material has been destroyed, and the material has been reduced to a mass soft while hot and brittle and pulverable, substantially without further desiccation when cold, as and for the purpose set forth. 2nd. An improved fertilizer, consisting of animal substances, such as hair, reduced to a soft friable condition and retaining substantially all its original elements as explained.

No. 40,476. Furnace. (*Fournaise.*)

Daniel Perry, Wolverhampton, and Barnabas Frederick Kelly, Bilston, both in Stafford, England, 24th September, 1892; 6 years.

Claim.—In puddling melting heating and other furnaces, the air flues in combination with the apertures r^1, substantially such as and for the purpose herein set forth, and shown upon the accompanying drawings.

No. 40,477. Art of Making Screen Doors.

(*Art de fabriquer les écrans de porte.*)

Charles J. Shirreff, Brockville, Ontario, Canada, 24th September, 1892; 6 years.

Claim.—The improvement in the art of constructing screen doors, which consists in providing the door frame with incisions extending from its inner edges in a direction approximately parallel with its face and with other incisions at a distance from its inner edges, and approximately at right angles to the first incisions, there removing the strips bordered by the two sets of incisions, so as to form recesses in the frame, then adjusting the screen in said recesses, and finally securing the strips over the edges of the screen, substantially as described.

No. 40,478. Screen for Windows and Doors.

(*Ecran de fenêtre ou porte.*)

Charles J. Shirreff, Brockville, Ontario, Canada, 24th September, 1892; 6 years.

Claim.—1st. In a screen for windows and doors, the combination, with the netting or wire cloth, and a frame, the top rail of which is formed with a series of separated channels opening above the said netting or wire cloth, or a ribbon located in front of said channels, concealing the edge of the netting or wire cloth, and adjustable to enlarge or diminish the openings above said netting or wire cloth, substantially as described. 2nd. In a screen for windows and doors, the combination, with the netting or wire cloth, and a frame, the top of which is formed with a series of separated channels E, each of which is provided with a sunken channel F, of a ribbon located in front of the said channels, concealing the edge of the netting or wire cloth, and adjustable to enlarge or diminish the openings above said nettings or wire cloth, substantially as described. 3rd. In screens for windows or doors, the combination, with a frame B, having its top rail A, formed with a series of piers D, connected by arched channels E, and sunken channels F, a screen C, secured to the frame and having its upper edge terminating below the crowns of the arched channels, the ribbon H, applied to the upper edge of the screen, and provided with a series of vertical slots J, and screws I, extending through the slots and engaging the frame for the purpose of vertically adjusting the ribbon of the screen, substantially as described.

No. 40,479. Merry-go-round. (*Tourniquet.*)

Louis Philip Perew, Tonawanda, New York, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. The combination with the rotary platform, and the rotunda or enclosure mounted thereon, and provided with windows or apertures of a movable picture rack arranged within the rotunda adjacent to the windows or apertures, and a trip device whereby the picture rack is shifted with reference to the rotary platform, substantially as set forth. 2nd. The combination with the rotary platform and the rotunda or enclosure mounted thereon, and provided with windows or apertures, of a movable picture arranged within the rotunda adjacent to the windows or aperture, a shifting roller bearing against the picture rack and provided with arms, and a stationary pin against which said arms are adapted to engage, substantially as set forth. 3rd. The combination with the rotary platform and the rotunda or enclosure mounted thereon, and provided with windows or apertures, of a movable picture arranged within the rotunda adjacent to the window or apertures, a shifting roller bearing against one side of the picture rack, and provided arms, a pressure roller bearing against the other of the picture rack, and a stationary bar provided with pins against which said arms are adapted to engage, substantially as set forth. 4th. The combination, with the rotary platform and the rotounda or enclosure mounted thereon and provided with windows or apertures, of a supporting frame secured to the inner side of the rotounda and provided with rollers, a circular picture rack resting upon said rollers, a shifting roller bearing against the underside of the picture rack and provided with radial arms, a carrying arm pivoted upon the supporting frame and provided with a pressure roller bearing against the upper side of the picture rack, a spring connecting the carrying arm with the supporting frame, and a stationary bar provided with pins against which the arms of the shifting roller are adapted to engage, substantially as set forth. 5th. The combination, with the rotary platform and the rotounda or enclosure mounted thereon, and provided with windows or apertures, of a movable picture rack arranged wlthin the rotounda adjacent to the windows or apertures and provided with notches, a trip device whereby the picture rack is shifted intermittently, and a spring secured with one end to the rotounda and adapted to engage with the other end in said notches, substantially as set forth. 6th. In a roundabout, the combination, with the centre block, of radial beams or joists resting with the inner ends upon said block and provided with transverse grooves or depressions forming together a circular groove and a tie ring fitted in said groove for connecting the beams or joists, substantially as set forth. 7th. The combination, with the circular stage and the rotating platform surrounding the stage, of brackets secured to the inner side of the platform, each of said brackets being provided with a horizontal roller bearing against the peripheral edge of the stage and a vertical roller bearing upon the top of the stage, substantially as set forth.

No. 40,480. Mower. (*Faucheuse.*)

John Stephani, Manitowoc, Wisconsin, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. The combination, with the finger bar of a mower, of a series of rearwardly extending and upwardly curved fingers attached to the finger bar pivotally, so as to be capable of independent lateral movement, substantially as described. 2nd. The combination, with the finger bar of the mower, of rearwardly extending and upwardly curved fingers, and hooks to which the fingers are severally pivoted so as to have lateral motion therein, the hooks being adapted to engage the finger bar in suitable apertures therefor, substantially as described.

No. 40,481. Shoe Lacing Device.

(Appareil de lacage des chaussures.)

Joseph Eli Bertrand and Charles Duncan, both of Boston, Massachusetts, U.S.A., 24th September, 1892; 6 years.

Claim.—The combination, with a boot or shoe having a slit or opening to be secured together, and provided with a flap secured at one side of said opening and overlapping the material at the other side of said slit, of a series of lacing hooks or studs set in the inner or overlapped portion of the material at one side of said slit and beneath the overlapping flap, a series of buttons secured to the overflap with the button heads outside and their eyes projecting through the material, a series of split or solid rings inserted in the eyes of said buttons, and a lacing cord secured at one end to the "upper" at or near the lower end of said opening or slit, and passing upward through all of the split or solid rings connected to the button eyes, and adapted to be passed over a hook or stud between each pair of rings, substantially as described.

No. 40,482. Electrical Safety Cut Out.

(Interrupteur électrique de sûreté.)

Henry Sheely Keating, of No. 11 Princes Gardens, Kensington, County of London, England, 24th September, 1892; 6 years.

Claim.—An electrical safety cut out, consisting of a bent tube containing mercury, which, having circuit wires dipping into it usually forms part of the circuit, but which by expansion of gas heated in one limb of the tube by excess current in the wire, is forced away from the wire thus opening the circuit, substantially as herein described.

No. 40,483. Bag Holder. (*Accroche-sac.*)

Nelson R. Streeter, Groton, New York, U. S. A., 24th September, 1892; 6 years,

Claim.—1st. In a bag holder, the combination of a supporting bar, supporting strips secured thereto, and having their lower ends formed into springs and the wires which are made to catch in the springs, substantially as shown. 2nd. The combination of the bar, the supporting strips secured thereto, and having their lower ends divided into prongs which form U-shaped springs, and the headed wires upon which the bags are placed, substantially as described. 3rd. The combination, with a supporting strip, having arms which are provided with U-shaped springs on their ends, of a twine holder having projections which catch in the said springs, substantially as shown and described. 4th. In a combined bag and tie holder, the combination of the bar, the supporting strips secured thereto, and having their lower ends pronged and then bent into U-shaped springs, the headed wires, each one of which is held by two of the springs, and the twine holder provided with projections upon opposite sides, substantially as specified.

No. 40,484. Book and Blank Case. (*Bibliothèque.*)

Roy Miller, Alma Centre, Wisconsin, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. The combination, with a case or frame, of a series of inclined shelves set at an angle within said frame or case and parallel with each other, substantially as set forth. 2nd. The combination, with a case or frame, of a series of inclined shelves set at a suitable angle within said frame or case and provided at their front lower edges with retaining flanges, substantially as set forth. 3rd. The combination, with a case or frame, of a series of inclined shelves set at a suitable angle within said frame or case parallel with each other, and provided at their front lower edges with retaining flanges and a series of finger notches, substantially as set forth.

No. 40,485. Sewing Machine. (*Machine à coudre.*)

Johannes Haas, No. 1 Postplatz, Eibenstock, and Richard Lintz, No. 109 Grüner Weg, Berlin, German Empire, 24th September, 1892; 6 years.

Claim.—1st. A sewing machine of the kind herein referred to, having a feed mechanism S acting in any direction, which works with a needle bar so fixed as to be unable to rotate, and thereby allows of the use of a shuttle or hook mechanism for the purpose of obtaining a lock stitch, substantially as hereinbefore described. 2nd. A sewing machine of the kind described, comprising the following elements: The needle bar driven by a separate spindle b^1, which operates the needle bar thruster b^4 guided by the head B^1, of the arm B, the needle bar c, moving freely in the hollow main tube a of the feed mechanism, which needle bar is guided at its lower end by means of a piston c^2 in the main piston tube, and the braid guide or presser foot d^4, in combination with the piston tube a^1, and means for allowing a certain amount of longitudinal play of the former in relation to the latter.

No. 40,486. Ruler. (*Règle.*)

William S. McKercher, Wroxeter, Ontario, Canada, 24th September, 1892; 6 years.

Claim.—A ruler comprising a body 1, the ruling edge of which is bevelled, the top of the ruling edge overhanging the bottom, in combination with a longitudinal hand hold having concaved sides, the curves of which extend from the top of the hand hold to the top of the bevelled ruling edge, substantially as described.

No. 40,487. Bridle for Towing Purposes.

(Bride pour câble de remorqueur.)

George W. Briggs, Kingston, Ontario, Canada, 24th September, 1892; 6 years.

Claim.—1st. The combination, in a towing bridle, of a fixed frame, a movable frame sliding on said fixed frame, and springs intervening said frames, whereby the strain of a tow line connected to the movable or sliding frame causes contraction of the springs against the resistance of the fixed frame to relieve the tow line when near a breakable strain to prevent breakage, as set forth. 2nd. The combination, with a tow line D, of a movable sliding frame connected thereto, a fixed frame having a resistance bar or tow post B, secured to the tow or tug and guiding the sliding frame, springs K, intervening said movable and sliding frames and held in position to expand and contract by rods E, extending laterally from said post B, at right angles thereto, whereby the pull on the tow line C, contracts the springs and relieves the tow line of sudden jerks, to prevent breakage under excess of strain, as set forth. 3rd. The combination, with a tow post B, having one or more rods E, extending laterally therefrom, of the springs K, coiled around said rods, a bar G^1, sliding on said rods, and a pull bar G, connected to said bar G^1, by rods H, or by continuation of the ropes or chains L, connected to the tow line, as set forth, for the purpose described.

No. 40,488. Pepsin. (*Pepsine.*)

John B. Russell, Detroit, Michigan, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. The herein described pepsin, having the characteristics described, and obtained by macerating hogs' stomachs in acidulated water, clarifying the resulting solution, subjecting the solution to dialysis, and finally evaporating the moisture from the remainder of the solution, substantially as described. 2nd. The herein described process of manufacturing pepsin, consisting in macerating hogs' stomachs in acidulated water either hot or cold, clarifying the resulting solution in any known way, subjecting the clarified solution to dialysis, whereby the percentage of peptone present is reduced, and finally evaporating the moisture from the remainder of the solution.

40,489. Paddle Wheel. (*Roue à aubes.*)

Maurice Richter, Williamstown, West Virginia, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. The improved paddle wheel, having at the inner edges of its blades or the edges of said blades nearest the centre of the wheel, forwardly projected extensions consisting of main portions and inclined portions g, such portions g being arranged next to the blades, and to incline outward from the rear edges of such main portions to the inner edges of the blades, all substantially as set forth. 2nd. The improved paddle wheel herein described, having blades and extensions projected forward from the inner edges of said blades or the edges thereof nearest the centre of the wheel nearly to the next blade in advance, whereby to limit the passage of water into the wheel in the forward motion thereof, and to hold the wheel as the latter is backed, substantially as and for the purposes set forth. 3rd. The combination in a paddle wheel, of the framing having outer rings and arms projected radially beyond the same, blades held to said rings with their inner edges out from or separate from the outer rings, and the extensions supported at their forward edges on the outer rings, and united at their rear edges to the inner edges of the blades, substantially as set forth. 4th. The improved paddle wheel herein described, consisting of the shaft, the inner and outer rings, the radial arms secured to the said shaft and rings and projected beyond the outer rings, the blades, and the extensions projected forward from the inner edges of the blades, and having their portions next the said blade inclined, all being constructed and arranged substantially as described and for the purposes set forth.

No. 40,490. Apparatus for Making Illuminating Gas.

(Appareil pour fabriquer le gaz d'éclairage.)

Robert Laird, Boston, Massachusetts, U.S.A., 24th September, 1892; 6 years.

Claim.—1st. In a generator of illuminating gas of the same general construction as shown in this drawing, and acting on the principle of generating hydrogen gas in an upper chamber of a closed tank by chemical reaction, and passing said hydrogen gas down a central tube and through a carbonaceous liquid contained in a lower tank, whereby the gas takes up carbon and becomes illuminating gas, which is drawn from the lower chamber by suitable piping, the combination of cylinders of metal separated by wooden blocks and con-

nected by wires, and acted on by the acid solution in the upper tank, and resting vertically on arms M, M, extending from a central collar N, the downward projection of the tube leading into the oil chamber further than in existing apparatus, the widening of the tube I for the withdrawal of the gas from said oil chamber so that the gas escapes more easily without carrying oil with it, and the downwardly inclined flanges T within this tube, which prevent the oil from being forced by sudden jolts up to the opening from top of this tube of escape pipe J, whereby oil would be forced out with the gas, the arrangement of openings R, R, along the bottom of the dome of the reaction chamber, the screw plug S in side of outer tank A, in place of any faucet or valve, the chocks Q, Q, on under side of the lid to hold down dome of reaction chamber, and the thumb screws X, X, to hold this lid in place, all substantially as set forth. 2nd. The use of cylinders of metal in the acid solution, substantially as shown and for the purpose specified. 3rd. The widening of tube I, and arrangement in it of downwardly inclined flanges, substantially as described. 4th. The openings along the lower edge of dome O, substantially as described. 5th. The chocks or projections on the under side of lid D, and of the thumb screws for fastening said lid to the walls of the tank, substantially as described. 6th. The use of felting within reservoir G, substantially as described.

No. 40,491. Pendulum Scales. (*Balance à pendule.*)

John B. Martin, Cincinnati, Ohio, U. S. A., 24th September, 1892; 6 years.

Claim.—1st. In a gravity scale, the combination of the standards B^1, B^2, levers F and F^1, quadrant C, having an arm E, and rigidly connected to said levers F and F^1, axis G rigidly connected to said levers, the quadrant being pivoted on the standards at B^5, and platform I, pivoted at H^1 to the quadrant, the pivot H^1 being located at the same side of the standards as is the quadrant, substantially as and for the purpose specified. 2nd. In a gravity scale, the platform provided with the downwardly extending standards J^1, J^2 located at a distance apart, and engaging the ends of the axis G of the levers F, F^1, combined with the quadrant and pendulum, the standards J^1, J^2 affording a broad basal support for the platform of the scale, substantially as and for the purposes specified. 3rd. In a gravity scale, the levers F, F^1, and the axis G, the latter being rigidly connected to said levers F, F^1 at the point of their junction, and the platform provided with the downwardly extended supporting stays J^1, J^2 located at a distance apart, and engaging the ends of the axis G, G^1, of the levers F, F^1, and each provided at its lower ends with a link K connected thereto, and to the standards B^1, B^2 combined with the quadrant and pendulum, and the standars B^1, B^2 forming a broad basal support for the entire scale, substantially as and for the purposes specified. 4th. The combination of a knife edge, and a pivotal pearing, viz., the knife edge bearing having its free or outer end provided with a pivot, and the bearing opposing said knife edge being provided with an opening or recess B^1 which latter receives said pivot. 5th. The knife edge bearing having the lug G^2 extending from its end at or near the line of its edge, and a supporting piece having the loop receiving the main portion of the bearing, and having a recess B^1 of smaller size than the loop, and adapted to receive only the lug G^2, the lug G^2 being tapered, and the recess B^1 being correspondingly tapered, substantially as and for the purposes specified.

No. 40,492. Shelf Bracket. (*Support de rayon.*)

T. McAvity & Sons, assignee of William McShane, all of Saint John, New Brunswick, Canada, 24th September, 1892; 6 years.

Claim.—As an improved article of manufacture, a shelf bracket, composed of an upper horizontal number or arm A, having a plate A^1, and diagonal socket A^2, a lower member or plate D, having a diagnonal socket D^2, and a middle member or brace consisting of a bar or rod E, connecting with said sockets A^2, D^2, the whole as set forth.

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

2708. THE COULTHARD SCOTT CO. (assignees), 3rd five years of No. 15,436, from the 9th day of September, 1892. Improvements on Maunder's Ontario Harrow, 2nd September, 1892.

2709. JOHN MARSHALL STANLEY and GEDEON DESJARDINS, 3rd five years of No. 15,489, from the 19th day of September, 1892. Improvements on Saw Log Sleighs, 2nd September, 1892.

2710. GEORGE ELMER ROBINSON, 2nd five years of No. 27,616, from the 10th day of September, 1892. Improvements in Horse Hay Rakes, 6th September, 1892.

2711. EDWARD GURNEY and CHARLES SELLERS, 2nd five years of No. 27,632, from the 12th day of September, 1892. Improvements in Furnaces, 6th September, 1892.

2712. FREDERICK GRINNELL, 2nd five years of No. 27,862, from the 20th day of October, 1892. Improvements in Fire Extinguishing Apparatus, 8th September, 1892.

2713. JOHN GOOD, 2nd five years of No. 27,801, from the 12th day of October, 1892. Improvements in Spindles and Fliers employed in Spinning Rope Yarn, &c., 8th September, 1892.

2714. GEORGE WASHINGTON TOWAR, 2nd five years of No. 27,656, from the 21st day of September, 1892. Improvements on Process for Preserving Butter, 9th September, 1892.

2715. HIRAM POTTER TALLMADGE, 2nd five years of No. 27,647, from the 21st day of September, 1892. Improvements on Furnace Gates, 19th September, 1892.

2716. PETER ADAMS, 2nd five years of No. 27,653, from the 21st day of September, 1892. Improvements in Metal Sleigh Knees, 20th September, 1892.

2717. THE INDURATED FIBRE COMPANY (assignees), 2nd five years of No. 27,848, from the 17th day of October, 1892. Improvements in Machines for forming Hollow Articles from Pulp, 20th September, 1892.

2718. FREDERICK DUNCAN MERCER and JOHN SMITH MERCER, 2nd five years of No. 27,644, from the 21st day of September, 1892. Improvements in Harvester Binders, 20th September, 1892.

2719. ALEXANDER MARCY, 2nd five years of No. 27,659, from the 26th day of September, 1892. Improvements in Organs or Harmoniums and Pianos, 22nd September, 1892.

2720. DANIEL R. PORTER and JOHN B. CREMIUS, 2nd five years of No. 27,657, from the 22nd day of September, 1892. Improvements in Pipe Wrenches, 22nd September, 1892.

2721. WILLIAM BUCK, 2nd five years of No. 27,830, from the 15th day of October, 1892. Improvements in Dampers for Stoves and Ranges, 22nd September, 1892.

2722. HALSEY HEALEY MONROE, 3rd five years of No. 15,525, from the 26th day of September, 1892. Improvements on Rotary Harrows, 22nd September, 1892.

2723. JOHN McQUARRIE, 2nd five years of No. 27,701, from the 3rd day of October, 1892. Improvements in Lubricating Compounds, 23rd September, 1892.

2724. ALBERT N. BECKETT, 2nd five years of No. 27,669, from the 28th day of September, 1892. Improvements in Basket Bottoms, 26th September, 1892.

2725. JOHN W. DOWD and STEPHEN D. FISHER, 2nd and 3rd five years of No. 27,663, from the 28th day of September, 1892. Improvements on Dry Closets, 26th September, 1892.

2726. THE ROYAL ELECTRIC COMPANY (assignees), 2nd five years of No. 27,850, from the 18th day of October, 1892. Improvements on Switch Boards for Electric Light Stations, 27th September, 1892.

2727. THE ROYAL ELECTRIC COMPANY (assignees), 2nd five years of No. 27,882, from the 28th day of October, 1892. Improvements in Apparatus for Operating Incandescent Electric Light Installations from an Arc Light Circuit, 27th September, 1892.

2728. WILLIAM GOWEN, 2nd five years of No. 27,691, from the 1st day of October, 1892. Improvements in Saw Mill Dogs, 27th September, 1892.

2729. CHARLES SELDEN, 2nd five years of No. 27,679, from the 29th day of September, 1892. Improvements in Railroad Brakes, 27th September, 1892.

2730. CHARLES SELDEN, 2nd five years of No. 27,680, from the 29th day of September, 1892. Improvements in Automatic Car Brakes, 27th September, 1892.

2731. HEZEKIAH MILKINS, 2nd five years of No. 27,687, from the 1st day of October, 1892. Improvements on Folding Clothes Bars, 30th September, 1892.

2732. THE MILWAUKEE HARVESTER COMPANY (assignee), 2nd five years of No. 28,236, from the 24th day of December, 1892. Improvements on Trip Mechanism for Grain Binders, 30th September, 1892.

TRADE MARKS

Registered during the month of September, 1892, at the Department of Agriculture—Copyright and Trade Mark Branch.

4419. EUGENE WALTER VILLENEUVE, de Montreal, Que. Un savon special pour lavage (family soap), 2 septembre, 1892.

4420. F. M. GRIFFIN, of St. Thomas, Ont. Hams, Bacon and Lard, 5th September, 1892.

4421. } JAMES CHADWICK & BRO., LD., of Eagley Mills, Bolton, Lancashire,
4422. } England. Mending Wool, 6th September, 1892,

4423. EDMUND HINTON HAINES, of Owen Sound, Ont. Liniment, 6th September, 1892.

4424. DAVID FORSYTH, of Berlin, Ont. Footballs and Football Goods, 7th September, 1892.

4425. JOHN McEWAN, of 5 Billiter Avenue, London, England. Tea, 12th September, 1892.

4426. PATRICK BUTLER MACNAMARA, of Brockville, Ont. Medicinal Salve or Ointment, 14th September, 1892.

4427. ABRAHAM ISAACS, of St. John, N.B. Cigars, 17th September, 1892.

4428. THE RATHBUN CO., of Deseronto, Ont. Portland Cement, 19th September, 1892.

4429. PETER POULIN, JR., and JULES GIRARDIN, of Brockville, Ont., trading as POULIN & GIRARDIN. Cigars, 19th September, 1892.

4430. HENRY GEORGE WINGROVE, of Collingwood, Ont. General Trade Mark, 20th September, 1892.

4431. NATHANIEL JOHNSTON & SONS, of Bordeaux, Gironde, France. Wine, 21st September, 1892.

4432. SLATER, RODGER & CO., LD., of Glasgow, Scotland. Whiskey, 21st September, 1892.

4433. DISTILLERIES VINICOLES (Wine Distilling Co.), of Cognac, Charente, France. Cognacs and Brandies, 21st September, 1892.

4434. WILLIAM DAVIES, of Toronto, Ont. Bacon, 22nd September, 1892.

4435. NATHANIEL JOHNSTON & SONS, of Bordeaux, Gironde, France. Wine, 22nd September, 1892.

4436. THE HALIFAX SUGAR REFINERY, LD., of Dartmouth, N.S. Refined Sugars and Syrups, 23rd September, 1892.

4437. THE TORONTO TYPOGRAPHICAL UNION, of Toronto. Official printed matter published by the Toronto Typographical Union, 23rd September, 1892.

4438. THE TORONTO TYPOGRAPHICAL UNION, of Toronto, Ont. Printed matter, the labour on which has been performed by members of the Toronto Typographical Union, 23rd September. 1892.

4439. FRASER & STIRTON, of London, Ont. Cigars, 23rd September, 1892.

4440. JAMES CHADWICK & BRO., LD., of Eagley Mills, Bolton, Lancashire, England. Mending Wool, 26th September; 1892.

4441. JAMES CHADWICK & BRO., LD., of Eagley Mills, Bolton, Lancashire, England. Sewing Thread, 26th September, 1892.

4442. JAMES CHADWICK & BRO., LD., of Eagley Mills, Bolton, Lancashire, England. Sewing Thread, 26th September, 1892.

4443. THE GEORGE E. TUCKETT & SON CO., LD., of Hamilton, Ont. Plug Smoking Tobacco, 28th September 1892.

4444. JAMES CHADWICK & BRO., LD., of Eagley Mills, Bolton, Lancashire, England. Sewing Thread, 27th September, 1892.

4445. PERKINS, INCE & CO., of Toronto, Ont. Japan Tea, 29th September, 1892.

COPYRIGHTS

Entered during the month of September, 1892, at the Department of Agriculture—Copyright and Trade Mark Branch.

6594. THE SEQUEL TO, RANDOM SHOTS, OR THE WISDOM OF HOLY WRIT, by David Lionel Palmer, Montreal, Que., 1st September, 1892.

6595. OFFICE LETTER OF THE MERCHANTS' PROTECTIVE ASSOCIATION. The Merchants' Protective Association, Montreal, Que., 2nd September, 1892.

6596. REV. MGR. CARMODY, OF HALIFAX (photo). Estate of Wm. Notman, of Montreal, Que. 3rd September, 1892.

6597. CODE MANUEL DES HUISSIERS ET DES SHERIFS. Par J. E. Bedard, B.A., &c. Paroisse de Beauport, Qué., 6 septembre, 1892.

6598. ADORATION WALTZ, by Fabian Rose. Phillips & Page, London, England, 6th September, 1892.

6599. CORDOVA WALTZ, by Juan Gomez. Phillips & Page, London, England, 6th September, 1892.

6600. THE CLINICAL CHART. Constructed by Edith M. Sharpe, Orillia, Ont., 7th September, 1892.

6601. THE REV. OLIVER ARNOLD, First Rector of Sussex, N.B., with some Account of his Life, &c., &c., which is now being preliminarily published in separate articles in "The Daily and Weekly Sun," and "The Weekly Record," of Sussex, N.B. Leonard Allison, Sussex, King's Co., N.B., 8th September, 1892. (Temporary Copyright.)

6602. PEARL OF THE WEST. Schottische Militaire, for the piano, by J. B. Spurr. I. Suckling & Sons, Toronto, Ont., 9th September, 1892.

6603. POLACCA BRILLANTE. For piano, by Jules Eckardt. Op. 11. I. Suckling & Sons, Toronto, Ont., 9th September, 1892.

6604. WHEN LOVE IS KING. Words by John Imrie. Music by Geo. W. Grant, Imrie & Graham, Toronto, Ont., 9th September, 1892.

6605. LE PLAISIR AU SALON (chansonnier). Edmond Hardy, Montréal, Qué., 10 septembre, 1892.

6606. AS YOU LIKE IT POLKA. Arranged by Frederick Forest. (Golden Moments.) I. Suckling & Sons, Toronto, Ont., 10th September, 1892.

6607. GOLDEN ROD VALSE. Arranged by Frederic Forest. (Golden Moments.) I, Suckling & Sons, Toronto, Ont., 10th September, 1892.

6608. GOLDEN SUNSHINE. Sketch for piano, by E. M. Fralick. I. Suckling & Sons, Toronto, Ont., 10th September, 1892.

6609. VEINE D'OR GAVOTTE. Arranged by Frederic Forest, (Golden Moments.) I. Suckling & Sons, Toronto, Ont., 10th September, 1892.

6610. WHEELING-JERSEY. Arranged by Frederic Forest. (Golden Moments.) I. Suckling & Sons, Toronto, Ont., 10th September, 1892.

6611. MARCH POMPOSA. For piano, by W. J. Scott. Whaley, Royce & Co., Toronto, Ont., 10th September, 1892.

6612. THE DESTINY OF CANADA. Poem, by James Stark. Paisley, 10th September, 1892.

6613. PUBLIC SCHOOL HISTORY OF ENGLAND AND CANADA, by W. J. Robertson, B.A., LL.B. The Copp, Clark Co., Ld., Toronto, Ont., 10th September, 1892.

6614. SUBSCRIBERS' LETTER OF THE MERCHANTS PROTECTIVE ASSOCIATION. The Merchants Protective Association, Montreal, Que., 12th September, 1892.

6615. THE EARLY BIBLIOGRAPHY OF ONTARIO, DOMINION OF CANADA, by Wm. Kingsford, LL.D., F.R.S.C., Ottawa, Ont., 13th September, 1892.

6616. THE FAITH OF THE IRISH NATION. Discourse delivered by Rev. Joseph Quinn, March 17th, 1892. Rev. Joseph Quinn, Longue Pointe, Que., 15th September, 1892.

6617. OUTLINES OF THE HISTORY OF FREEMASONRY IN THE PROVINCE OF QUEBEC, by John H. Graham, M.A., LL.D., Isaac Henry Stearns, Montreal, Que., 15th September, 1892.

6618. ROSA SILVANA (Wild Rose). Melody for the piano, by Theodore Martens. Op. 10. I. Suckling & Sons, Toronto, Ont., 15th September, 1892.

6619. EIGHT HOURS POLKA, by Arthur L. E. Davies. The Anglo-Canadian Music Publishers' Association, Limited, London, England, 17th September, 1892.

6620. THE BELL TELEPHONE COMPANY OF CANADA, LIMITED, LONDON EXCHANGE, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, AUGUST, 1892. The Bell Telephone Company of Canada, Limited, Montreal, Que., 17th September, 1892.

6621. A BANK OR COMMERCIAL DRAFT. Charles L. Benedict, Peterborough, Ont., 17th September, 1892.

6622. MONTHLY STATEMENT AND NOTE (form). John Robert Sawle, Welland, Ont., 20th September, 1892.

6623. GRAMMAIRE DU PREMIER AGE, avec Exercices Faciles, Deuxième Edition. Les Frères du Sacré Coeur, Arthabaskaville, Qué., 20th septembre, 1892.

6624. GRAMMAIRE ELEMENTAIRE, Divisée en Leçons, Deuxième Edition. Les Frères du Sacré Coeur, Arthabaskaville, Que., 20th septembre, 1892.

6625. MONTREAL TRADE OF BOARD BUILDING, St. Sacrement Street (water colour drawing). George Christopher Huttemeyer, Montreal, Que., 20th September, 1892.

6626. A.
6627. B.
6628. C.
6629. D.
6630. MONSEIGNEUR BEGIN (photo.) Jules Ernest Livernois, Québec, Qué., 21 septembre, 1892. E.
6631. F.
6632. G.
6633. H.
6634. I.

6635. I AM THINKING OF THEE, ALICE. Words and Music by Eloise Skimmings. A. & S. Nordheimer, Toronto, Ont., 22nd September, 1892.

6636. LE SECRET. Intermezzo Pizzicato, pour piano, par Leonard Gautier. Augener & Co., London, England, 22nd September, 1882.

6637. LACROSSE POLKA. For piano, by L. Fred Clarry. Whaley, Royce & Co., Toronto, Ont., 23rd September, 1892.

6638. THREE PHOTO-GRAVURES *re* THE OPERATIONS OF GATHERERS OF CRUDE INDIA RUBBER UPON THE UPPER AMAZON RIVER IN SOUTH AMERICA, WITH EXPLANATIONS. The Gutta Percha and Rubber Manufacturing Co., Ld., Toronto, Ont., 23rd September, 1892.

6639. SHORT HISTORY OF THE PRESBYTERIAN CHURCH IN THE DOMINION OF CANADA, from the earliest to the present time, by Wm. Gregg, A.M., D.D., Toronto, Ont., 23rd September, 1892.

6640. FUN FOR THE MILLIONS, AND LAUGH AND GROW FAT. Compiled by J. A. Campbell, Toronto, Ont., 24th September, 1892.

6641. GOVERNMENT HOUSE WALTZ, by Victoria A. A. Mason. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 24th September, 1892.

6642. A PAPER FROM MARS, OR A PAPER FROM MERCURY, &c., which are to be preliminarily published in separate articles in "The Satellite" of London, Ont. Richard F. Matthews, junior, London, Ont., 24th September, 1892.

6643. BARN DANCE. From Solomon's Opera "The Nautch Girl." Arranged by Paul Duprêt. Chappell & Co., of London, England, 28th September, 1892.

6644. THE MANITOBA REPORTS, VOLUME VII, 1890-91. The Law Society of Manitoba, Winnipeg, Man., 29th September, 1892.

6645. J. DUCLOS' LEÇONS DE STYLE. Spécialement destinées aux jeunes filles. Cours préparatoire et élémentaire. Les Clercs de St. Viateur, Joliette, Qué., 30 septembre, 1892.

6646. J. DUCLOS' LEÇONS DE STYLE. Spécialement destinées aux jeunes filles. Cours Moyen. Les Clercs de St. Viateur, Joliette, Qué., 30 septembre, 1892.

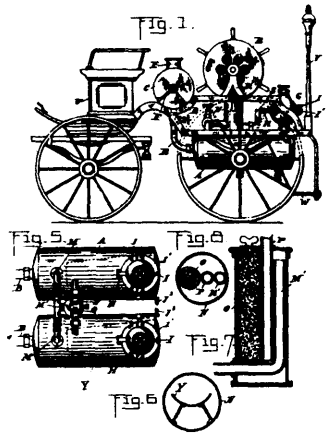
6647. J. DUCLOS' LEÇONS DE STYLE. Spécialement destinées aux jeunes garçons. Cours préparatoire et élémentaire. Les Clercs de St. Viateur, Joliette, Qué., 30 septembre, 1892.

6648. LE STYLE ENSEIGNÉ PAR LES LEÇONS DE CHOSES, par S. Constans. Cours Elémentaire et Moyen. Les Clercs de St. Viateur, Joliette, Qué., 30 septembre 1892.

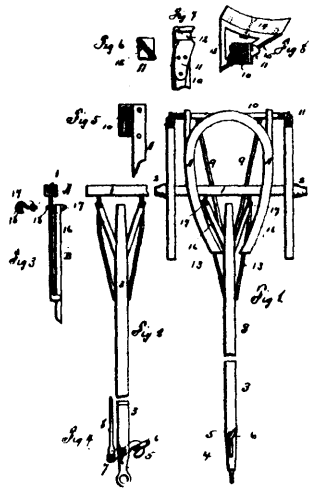
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

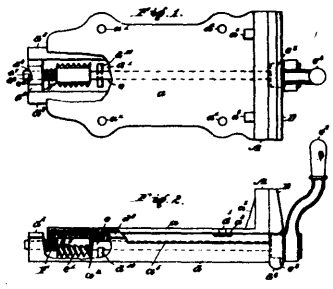
Vol. XX. SEPTEMBER, 1892. No. 9.



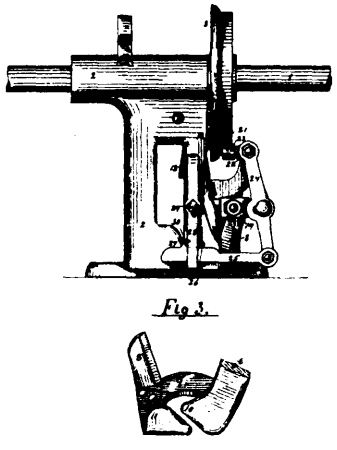
40181 Van Valkenburg's Chemical Fire Engine.



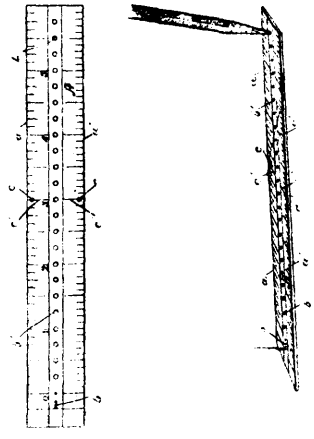
40182 Stevens' Vehicle.



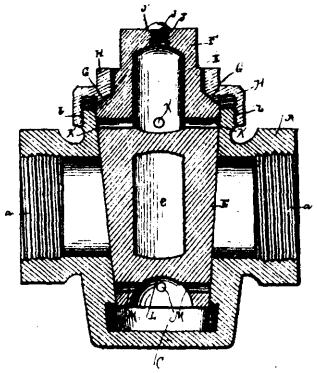
40183 Sabourin's Vise.



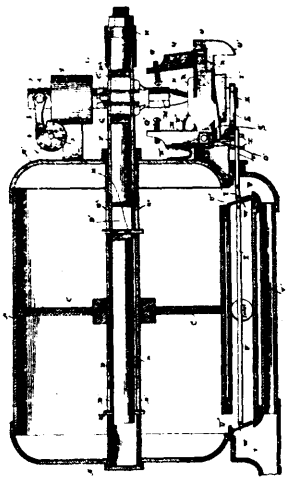
40184 Reaman's Binder.



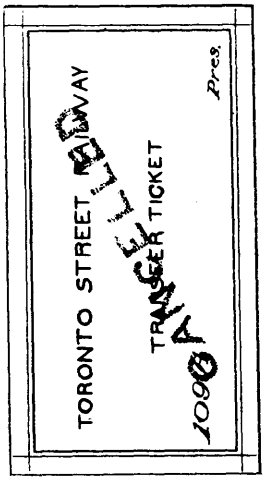
40185 Flick's Combination Rule, Square and Compass.



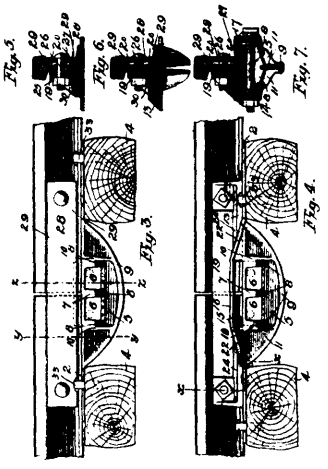
40186 Logan's Stop Cock.



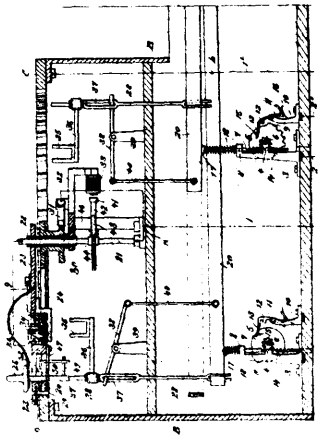
40187 Holt's Fluid Meter.



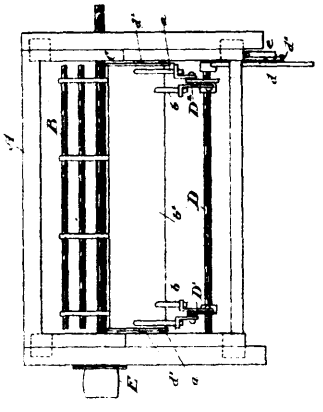
40188 White's Transfer Ticket.



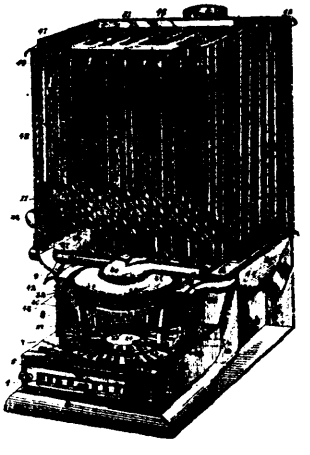
40189 Heath's Rail Joint.



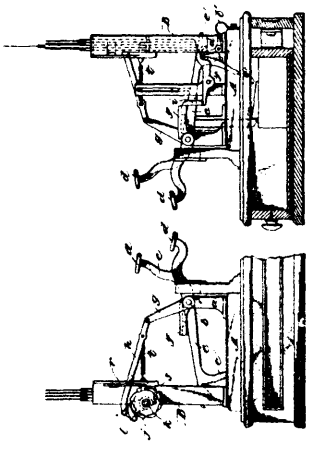
40190 Taylor's Printing Telegraph.



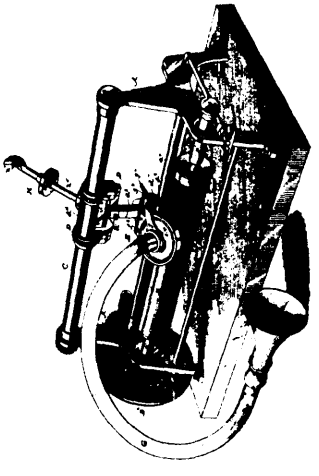
40191 Alpert's Threshing Machine.



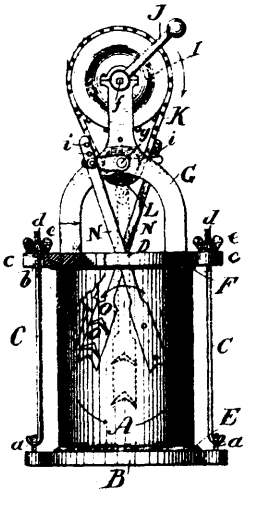
40192 Kirkpatrick's Air-heating Apparatus.



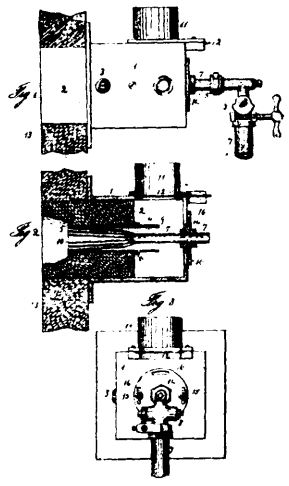
40193 Parkhurst's Cash Indicator and Register.



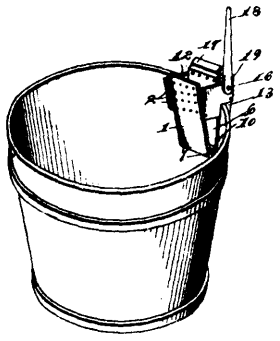
40194 White's Graphophone.



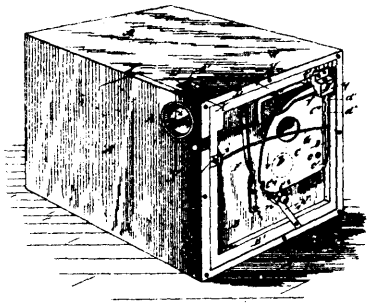
40195 Linebarger's Churn.



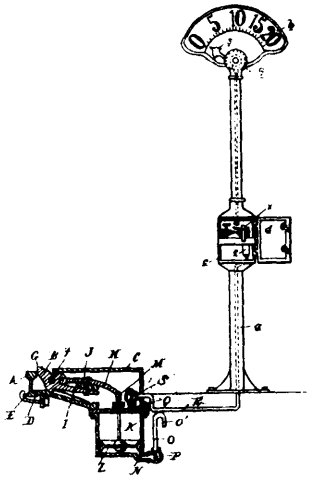
40196 Reamon's Burner for Hydro-Carbon Oil.



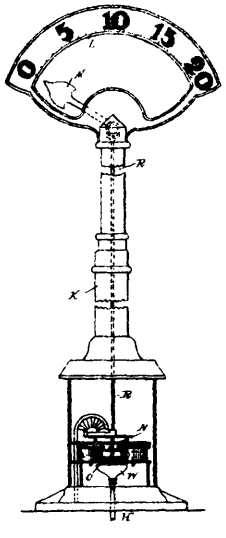
40197 White's Mop Wringer.



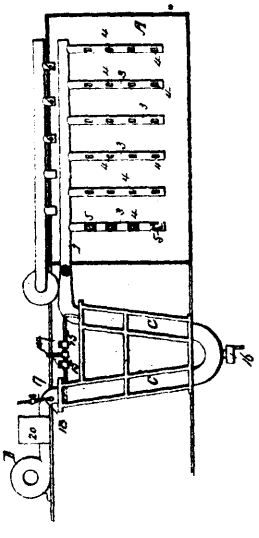
40198 Blair and Crowell's Camera.



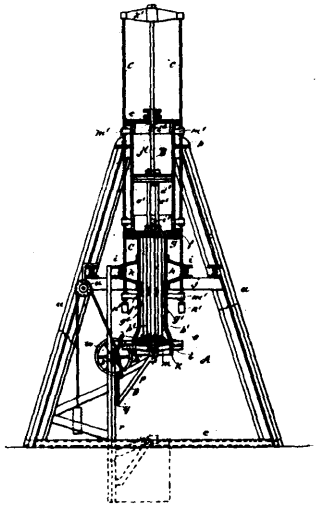
40199 Fontaine's Railway Time Signal.



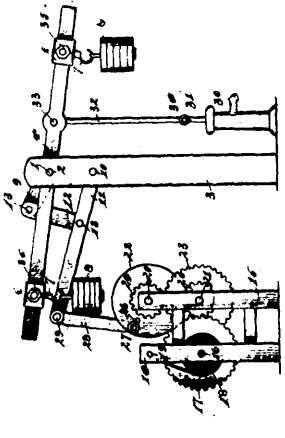
40200 Fontaine's Railway Time Signal.



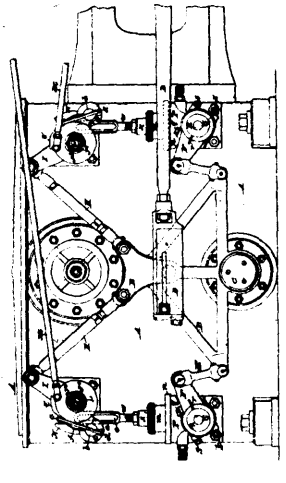
40201 Mayo and Peple's Apparatus for Ordering Tobacco.



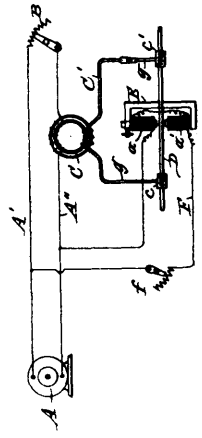
40202 Powers and Van Buren's Machine for making Clay Conduits.



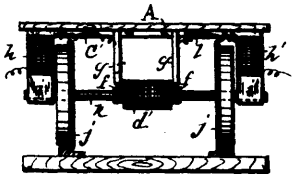
40203 Peterson's Spring Motor.



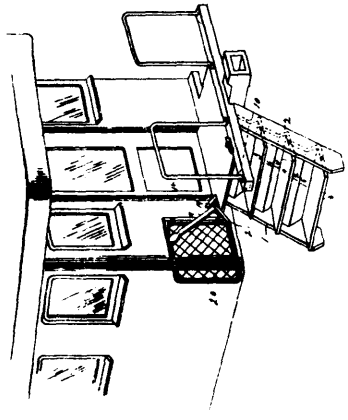
40204 Nordberg's Valve Gear.



40205 Dewey's Method of Electric Metal-Working.

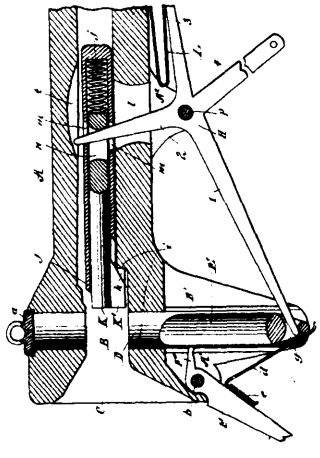


40206 Dewey's Method of Magnetically Reducing Friction.

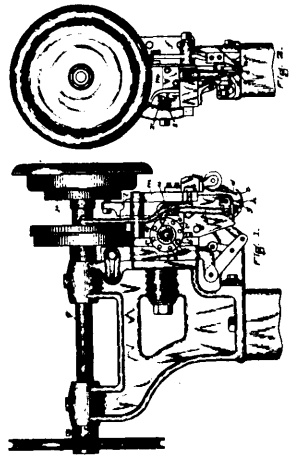


40207 Jones' Car Step.

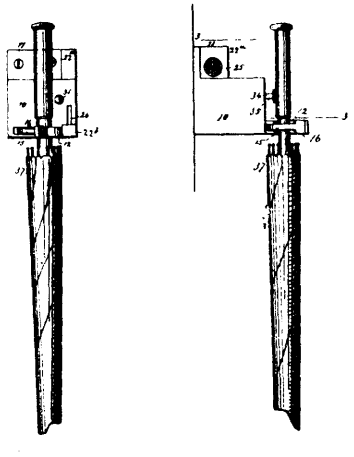
40208 Dixon's Salt Container and Sprinkler.



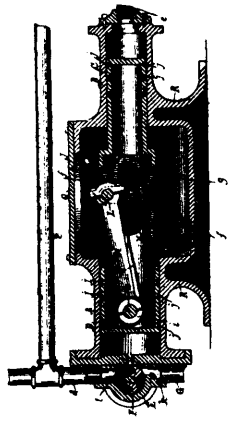
40209 Lougheed's Car Coupler.



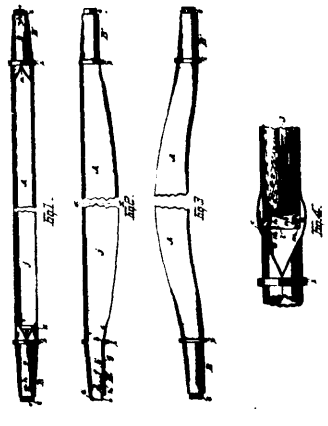
40210 Eppler's Shoe-sewing Machine.



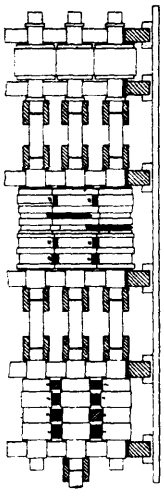
40211 Buckingham's Check-controlled Lock.



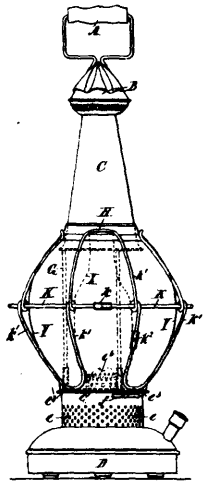
40212 Hardy, Owen and Leonard's Steam Engine.



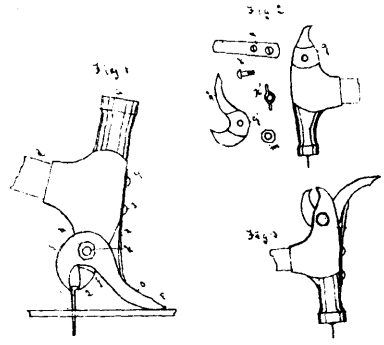
40213 Miller's Axle.



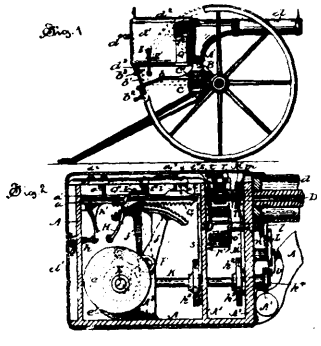
40214 Bicheroux's Apparatus for making Rails, Girders, &c.



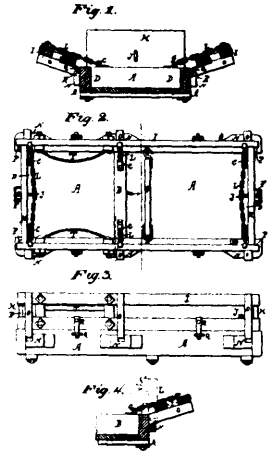
40215 Paul's Lantern.



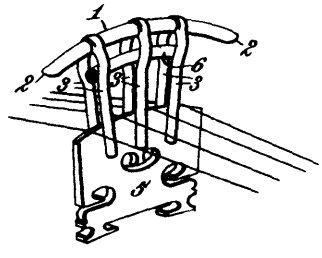
40216 Blake's Hammer and Nail Puller.



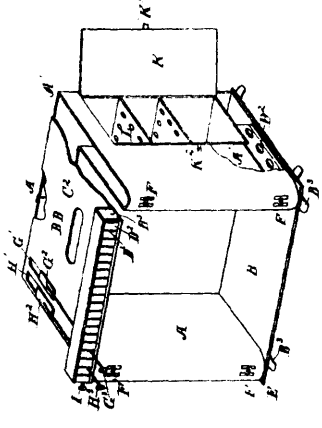
40217 Garland's Magazine Gun.



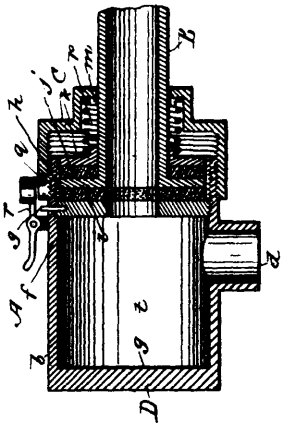
40218 Craig's Rack for Wagon Beds.



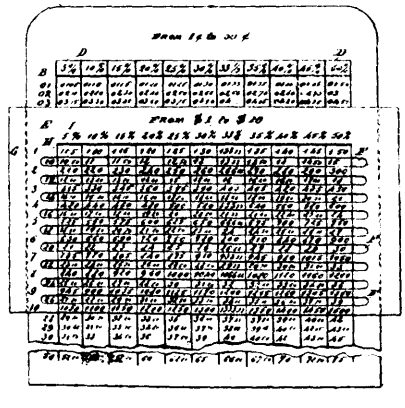
40219 Genese's Mute for Musical Instruments.



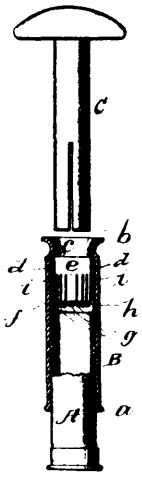
40220 Marsh's Ventilating Heater.



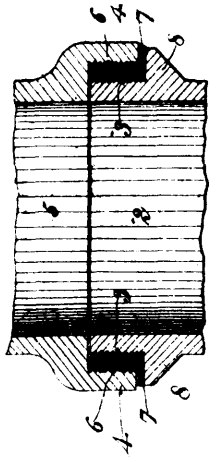
40221 Morgan and Adams' Steam Joint for Rotary Pipes.



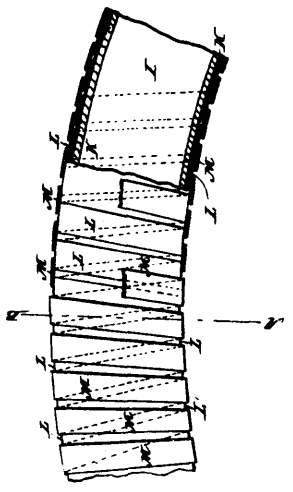
40222 Clayton's Calculator.



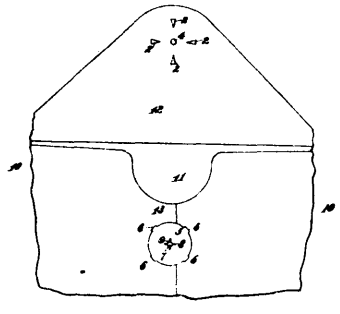
40223 Baldwin's Cartridge Loader.



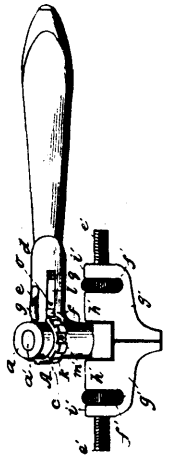
40224 Sykes' Pipe Joint.



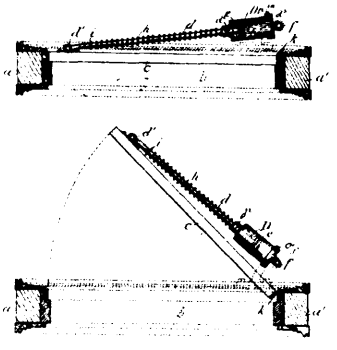
40225 Swain and Philipson's Bicycle Tyre.



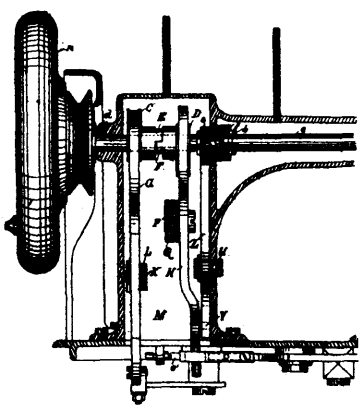
40226 Denis' Envelope Seal.



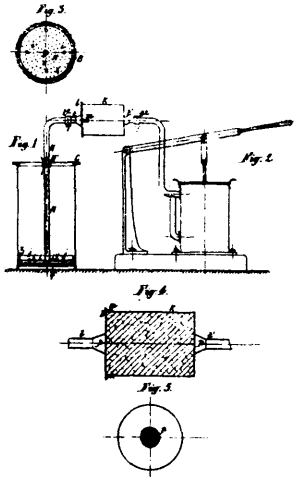
40227 Lowe's Wrench.



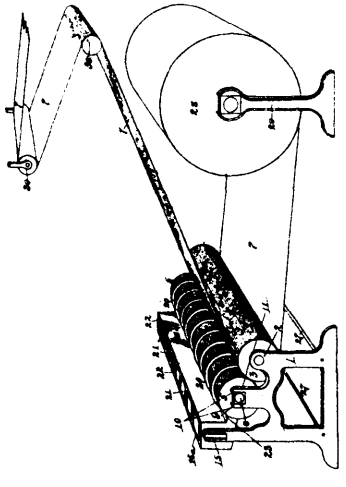
40228 Shrawder's Pneumatic Door Check and Closer.



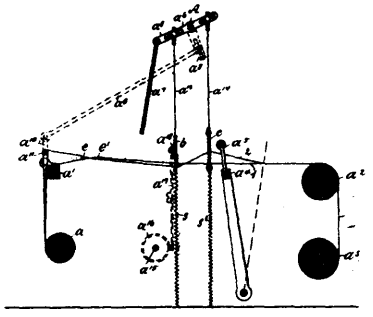
40229 Tomsa's Sewing Machine.



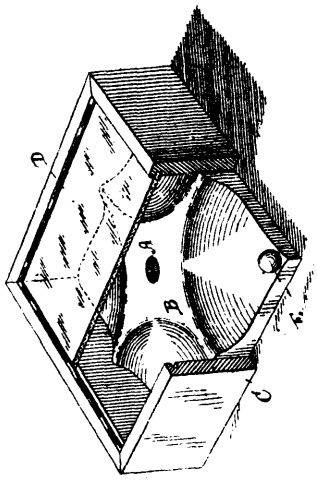
40230 Rolland's Churn.



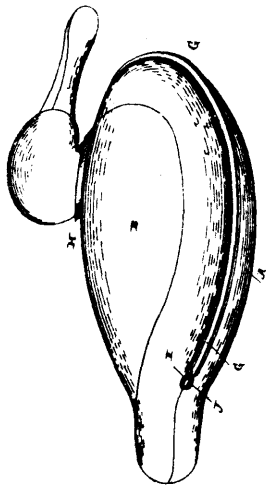
40231 Stewart's Machine for Printing Paper Bags.



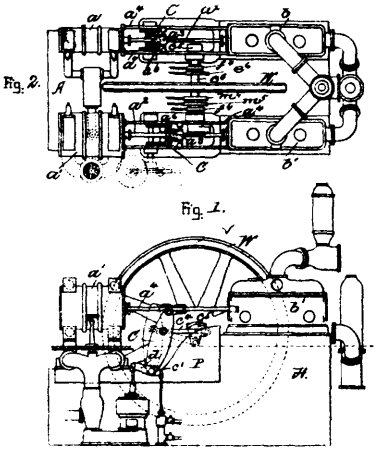
40232 Talbot's Warp Operating Mechanism for Cross Weaving.



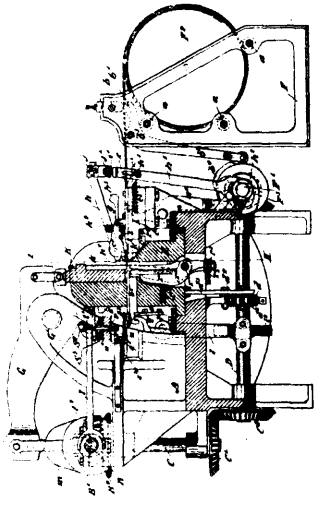
40233 Clouston's Puzzle.



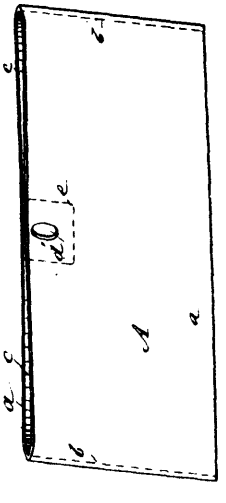
40234 Thorn's Decoy.



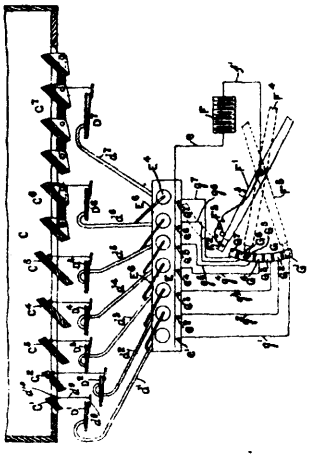
40235 Hall's Steam Pump.



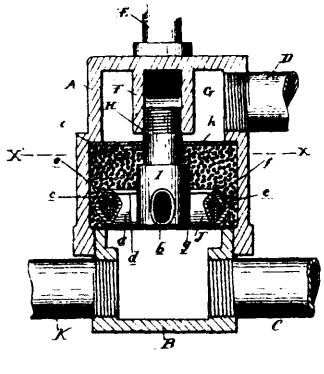
40236 Nilsson's Apparatus for making Nails.



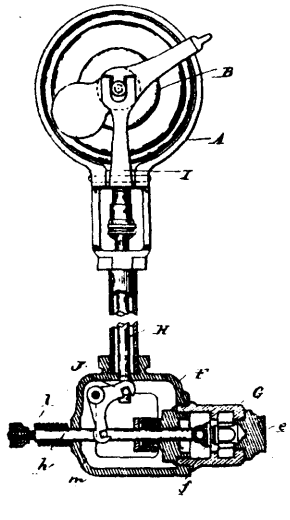
40237 Morton's Wallet.



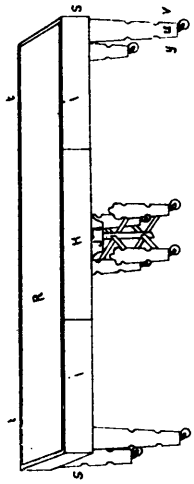
40238 Jones' Organ.



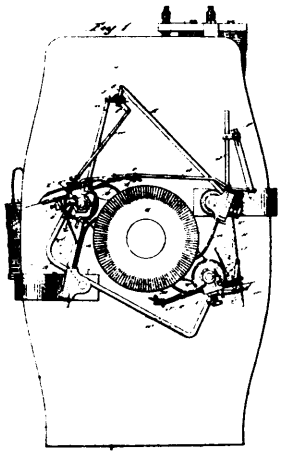
40239 McElroy's Water Heater.



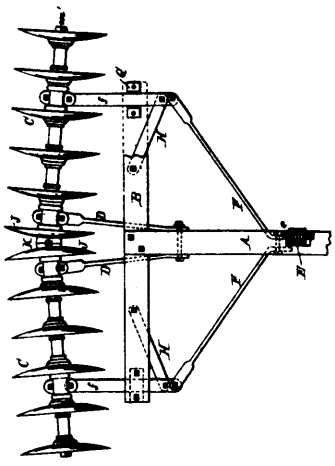
40240 McElroy's Temperature Regulator.



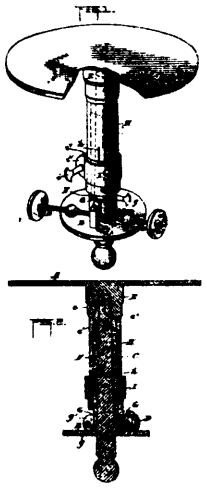
40241 Ethier's Extension Table.



40242 Elkins' Regulator for Dynamo Electric Machines.

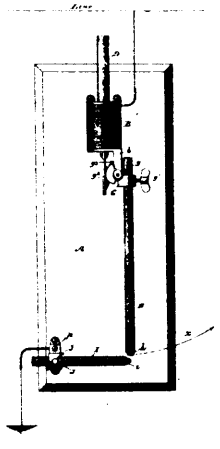


40243 Pridmore's Disk Harrow.

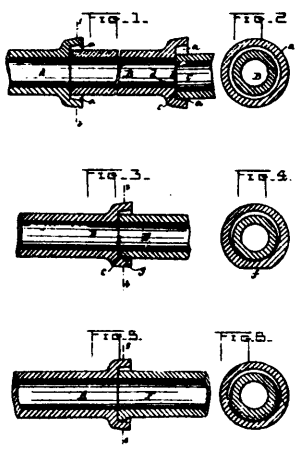


40244 Hanlon's Surveyor's Instrument.

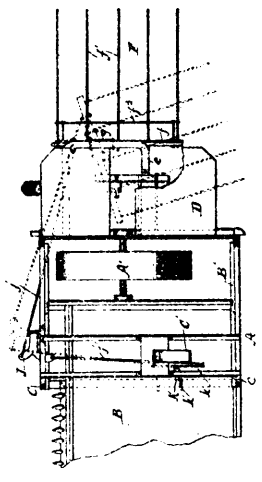
40245 Carpenter's Electric Soldering Irons.



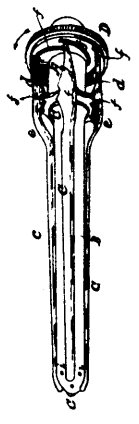
40246 Easton's Lightning Arrester.



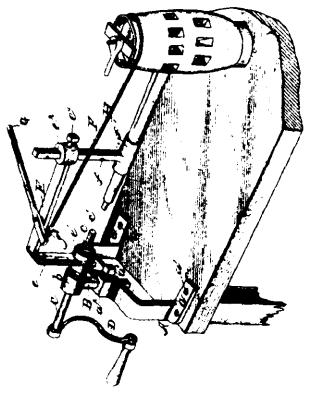
40247 Knowles' Socket-pipe for Drainage and other purposes.



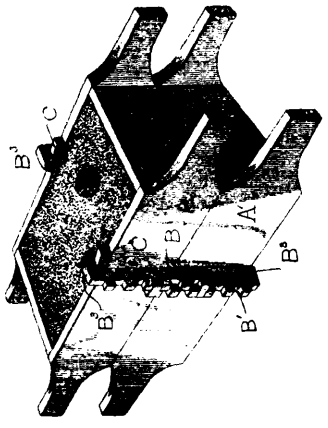
40248 Stewart's Sheaf-carrier for Harvesters.



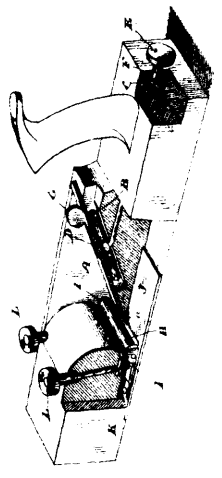
40249 Hendricksons' Vaginal Syringe.



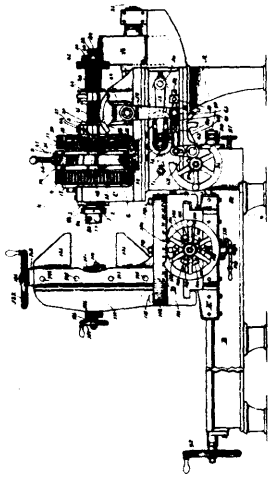
40250 Giddens' Tenoning Machine.



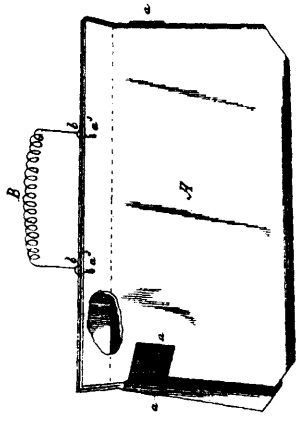
40251 Archibald's Clamp for Moulder's Flasks.



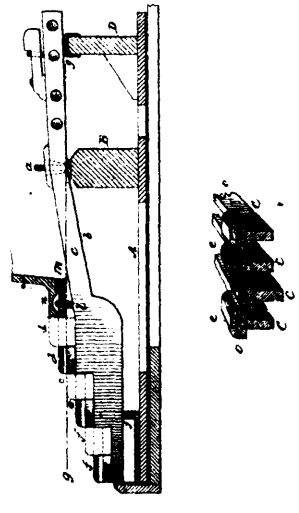
40252 Robinson's Plane.



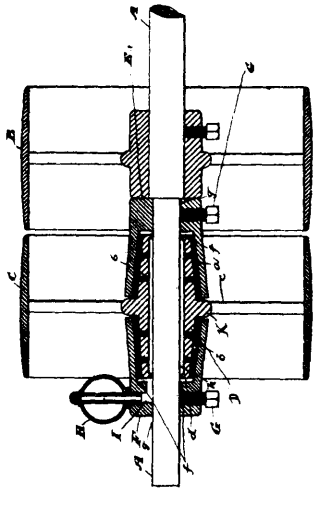
40253 Bradford's Tapping and Pipe-threading Machine.



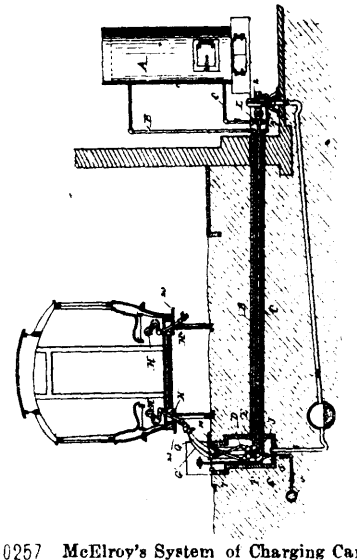
40254 Long and Dimick's Parcel Holder.



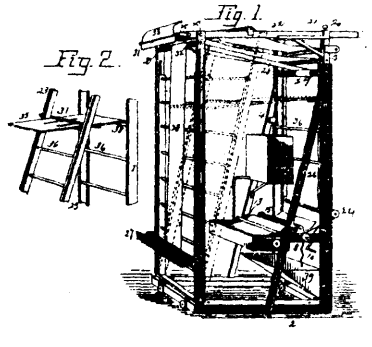
40255 Von Janko's Key-board for Musical Instruments.



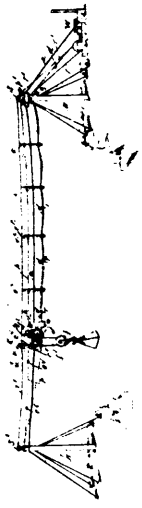
40256 Brandon's Pulley Bearing.



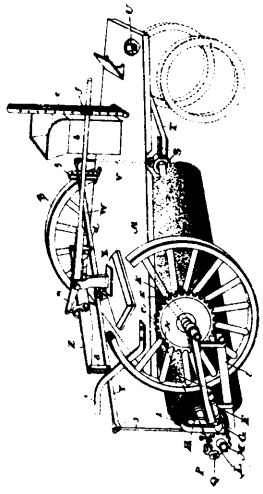
40257 McElroy's System of Charging Car-heating Apparatus with a Heating Medium



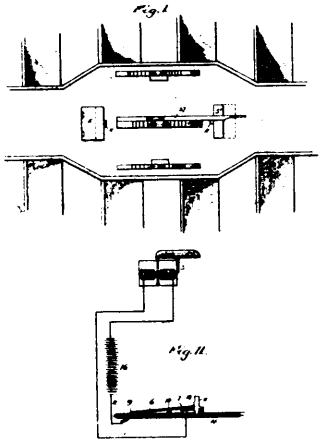
40258 Lohlker's Paper-hanging Machine.



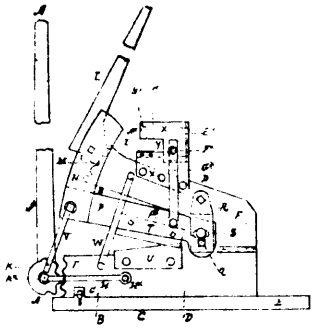
40259 Miller's Hoisting and Conveying Apparatus.



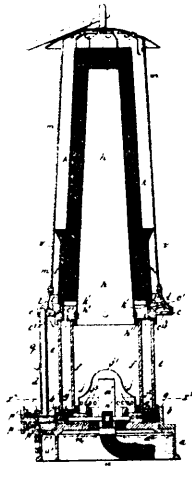
40260 Jones and Gillies' Street Sweeper.



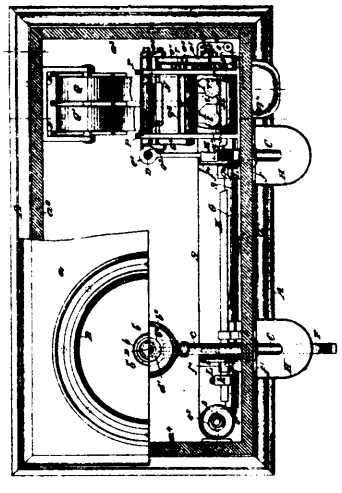
40261 Wolf's Electric Signal for Cars.



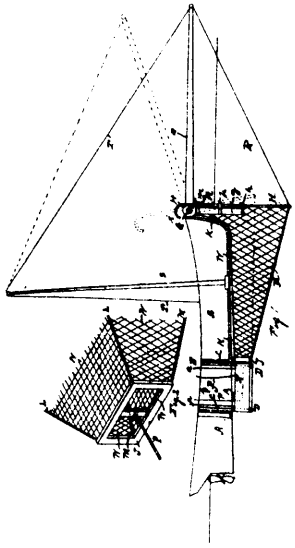
40262 Smith's Machine for Cutting Metals.



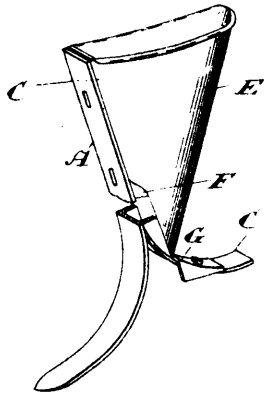
40263 Thorne's Lamp.



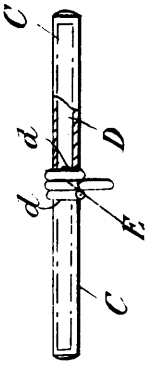
40264 Fowler's Apparatus for Dispensing Liquids.



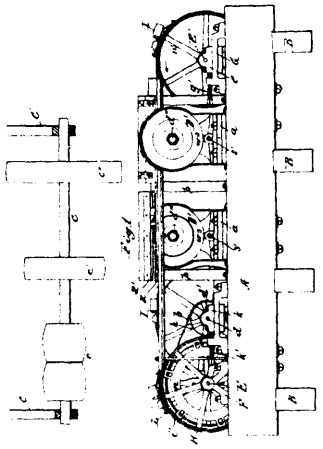
40265 Dunham's Fishing Apparatus.



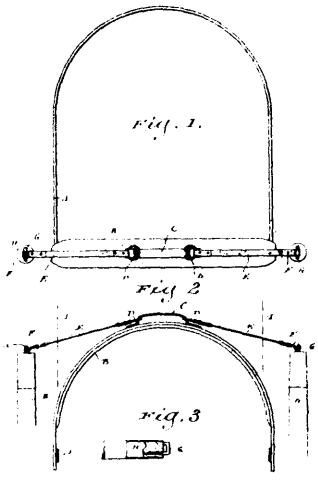
40266 Muir's Drill, Hoe and Cultivator Tooth.



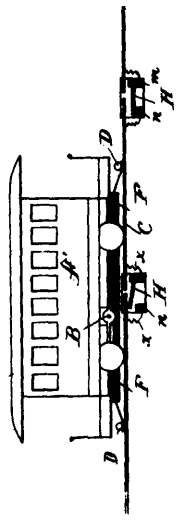
40267 Bolt's Bar for Watch Chains.



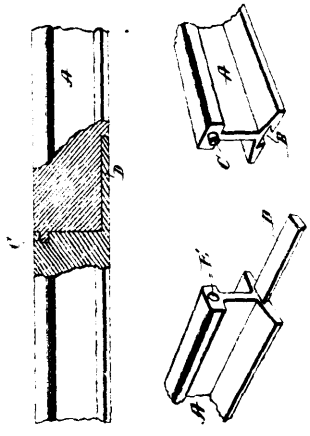
40268 Greer's Machine for making Spikes and Nails.



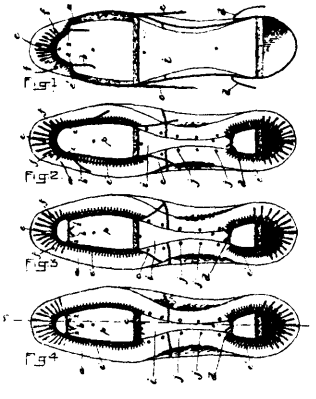
40269 Choquette's Harness.



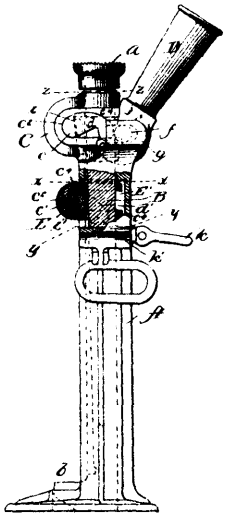
40270 Richter' Electric Railway.



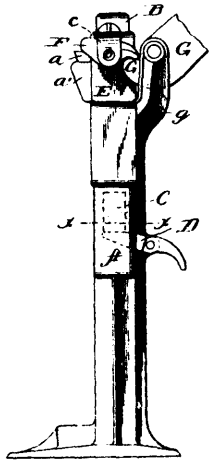
40271 Klein's Rail Joint.



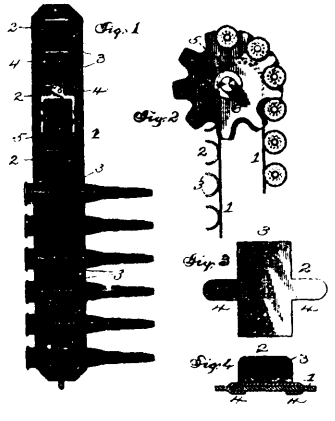
40272 Willey's Boot and Shoe.



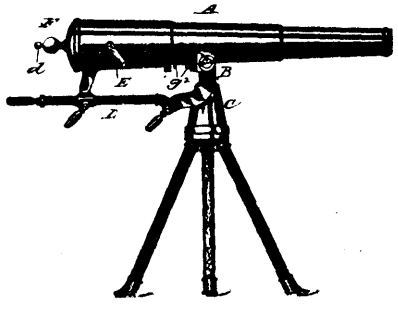
40273 Crecelius' Lifting Jack.



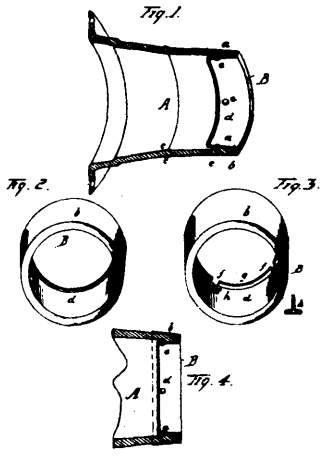
40274 Crecelius' Lifting Jack.



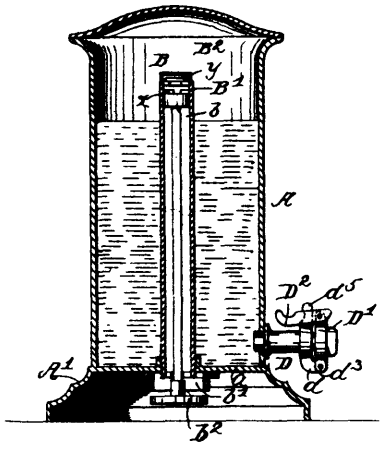
40275 Garland's Ammunition Belt.



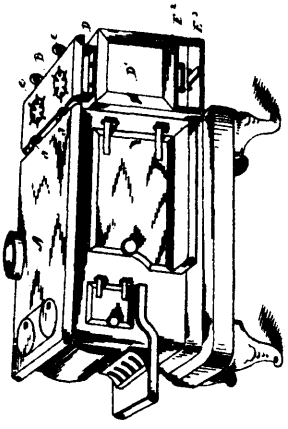
40276 Garland's Machine Gun.



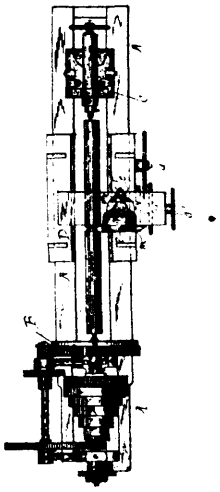
40277 Chaplin's Cover for the ends of Hub Bands.



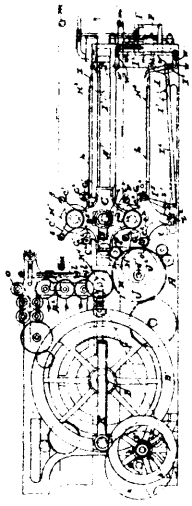
40278 Downing's Fire Extinguisher.



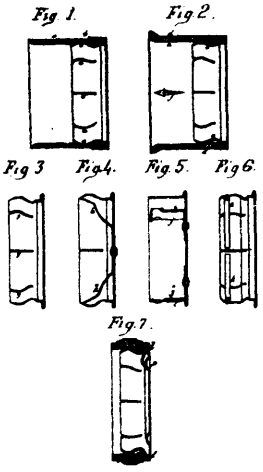
40279 Myers' Range.



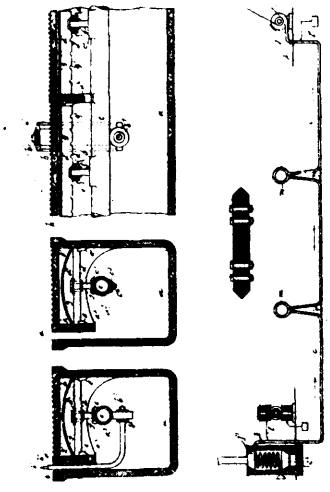
40280 Simpson's Lathe Carriage.



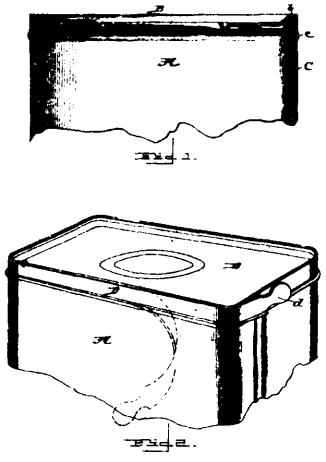
40281 Cox's Printing Press.



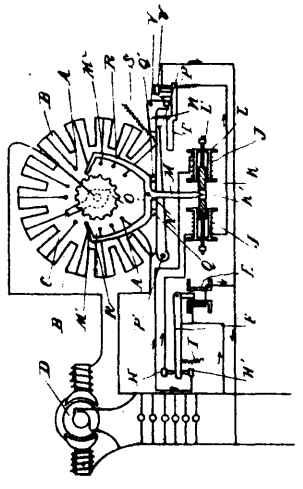
40282 Chaplin's Dust and Mud Cap for the Point-bands for Vehicle Hubs.



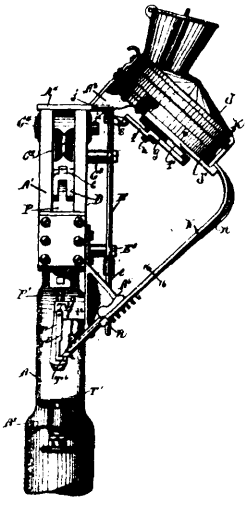
40283 Grantland's Apparatus for the Transmission of Currents through Conduits.



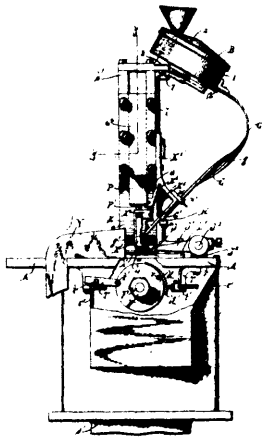
40284 Hopper's Can.



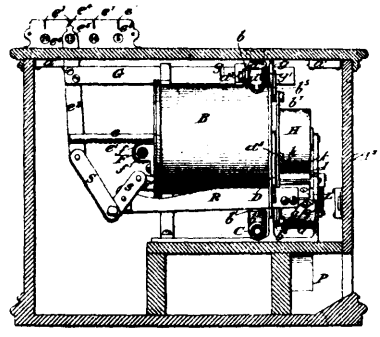
40285 McElroy's Electric Regulator.



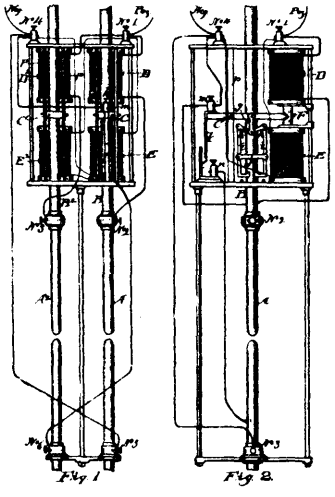
40286 Thomson's Rivetting Machine.



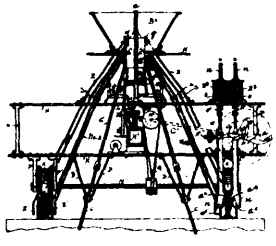
40287 Thomson's Rivet-slotting Machine.



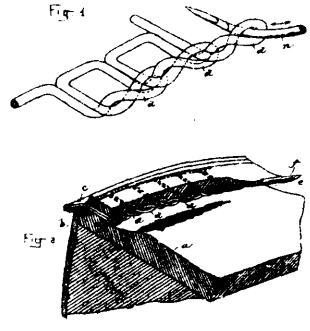
40288 Fowler's Apparatus for Dispensing Liquids.



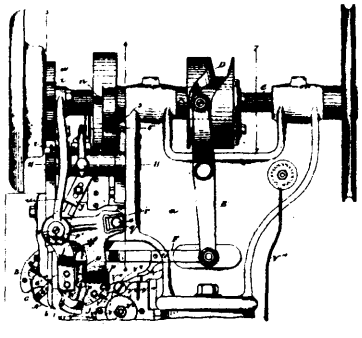
40289 Graves' Electric Arc Lamp.



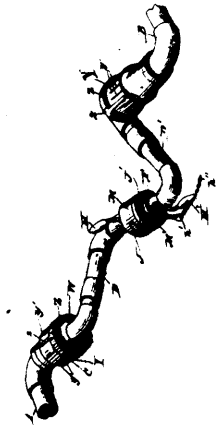
40290 Close and Graves' Railway Construction Machine.



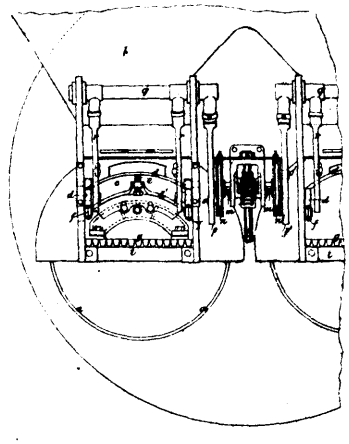
40291 Eppler's Chain Stitches.



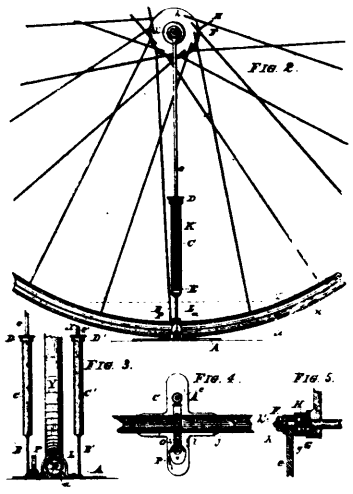
40292 Eppler's Machine for Sewing Welts to Uppers.



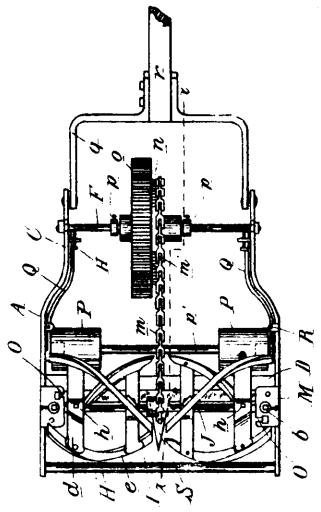
40293 Roberts' Pipe Coupling.



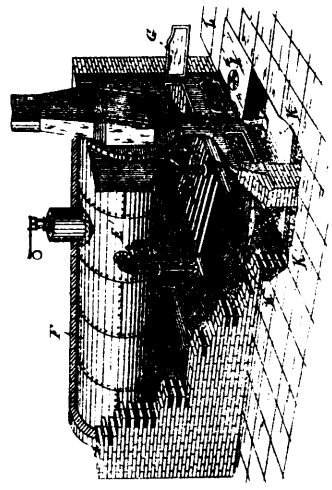
40294 Proctor's Stoker for Steam Boilers, &c.



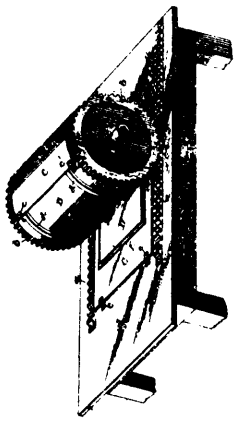
40295 Snyder's Support for Bicycles.



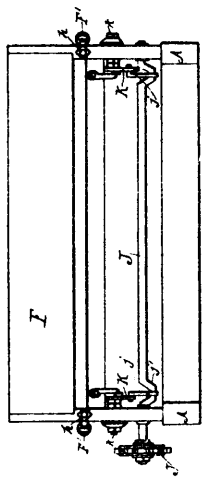
40296 Graham's Lawn Mower.



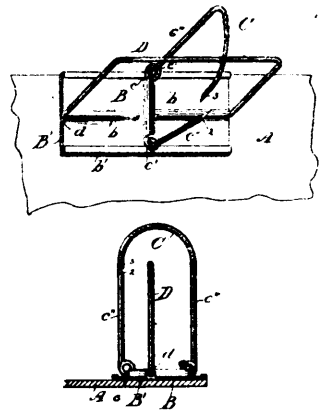
40297 Hawleys Steam Boiler Furnace.



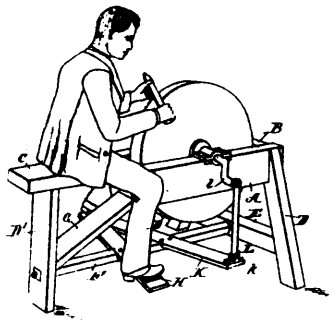
40298 Furlong's Method of Bending Electrotype Plates.



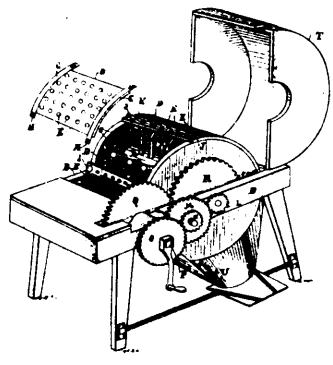
40299 Fraser's Fertilizer Distributor.



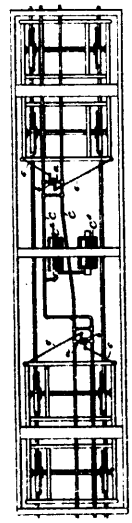
40300 Gottwals and Allan's Bell File.



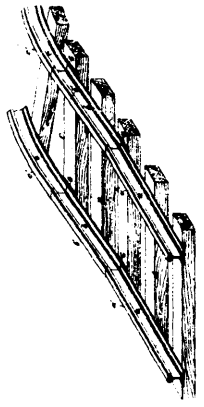
40301 Cochins' Mechanical Motor.



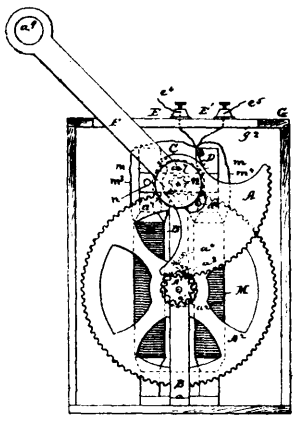
40302 Moulton's Pea Sheller.



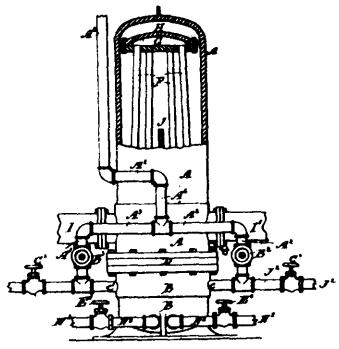
40303 Maher's Air Brake.



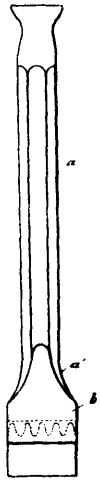
40305 Dudley's Railway Track.



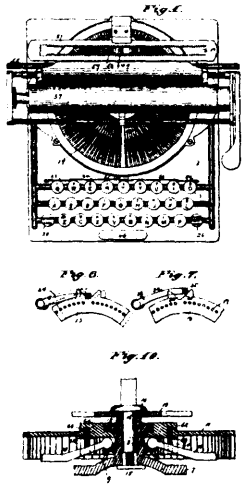
40306 Fitch's Magnecto-electric Machine for Blasting.



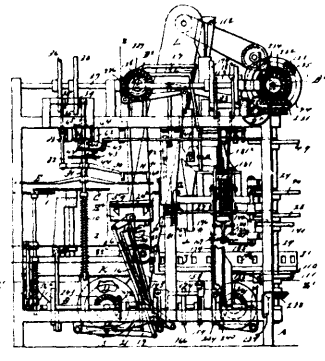
40307 Jacobs' Feed Water Heater.



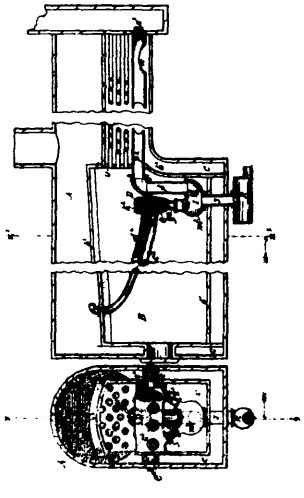
40308 Faulds' Mason's Tool.



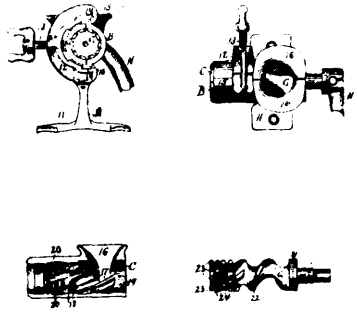
40309 Yost's Type-writing Machine.



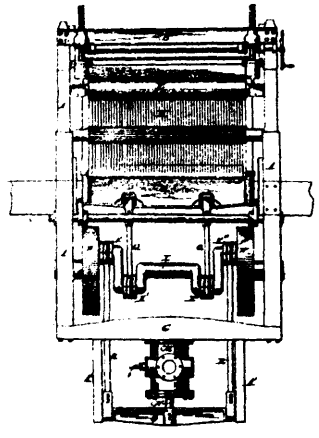
40310 Smyser's Package Making and Filling Machine.



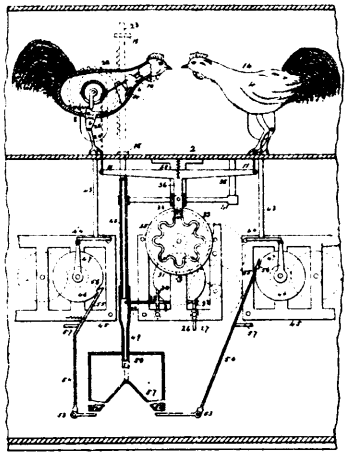
40311 Horton and Fitch's Steam Generator.



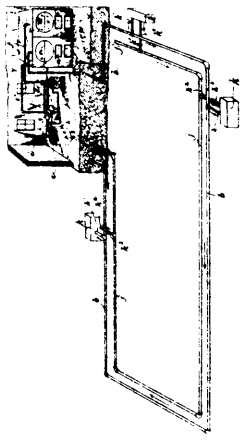
40312 Shepard's Meat Cutter.



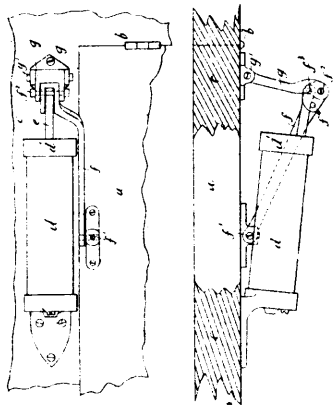
40313 Wilkins' Gang Sawmill.



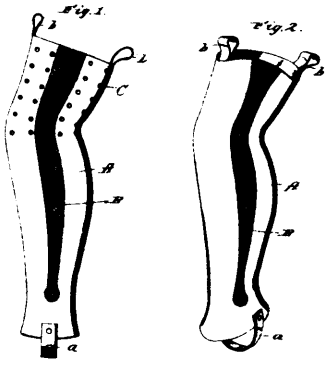
40314 Pierce's Coin-operated Automaton.



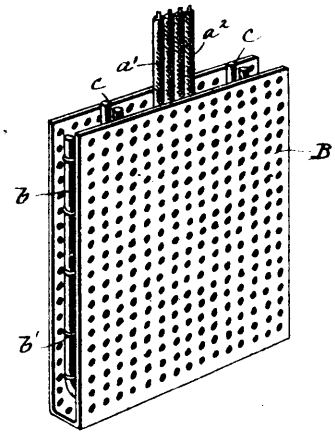
40315 Gates' Hot Water Heating System.



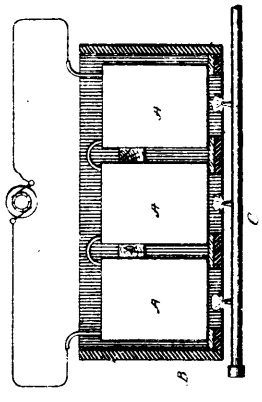
40316 Adams' Door-closing Appliance and Check for Same.



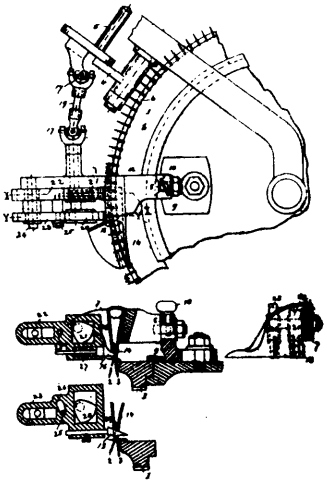
40317 Groat and Van Vleck's Leggings.



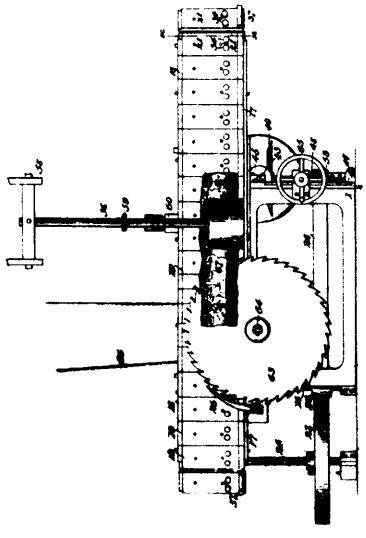
40318 Waddell, Entz and Phillips' Secondary Battery.



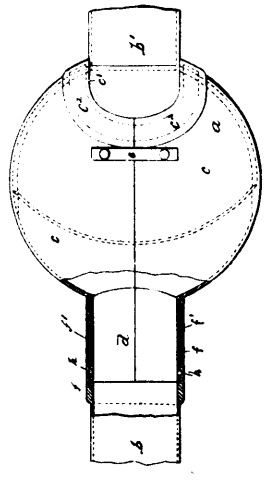
40319 Entz and Phillips' Secondary Battery.



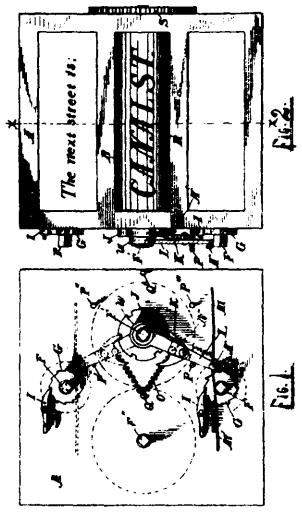
40320 Traver's Trimming Attachment for Sewing Machines.



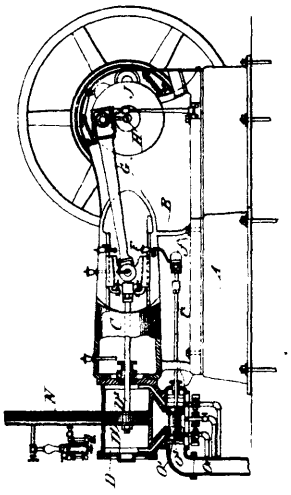
40321 Linderman's Slab-sawing Machine



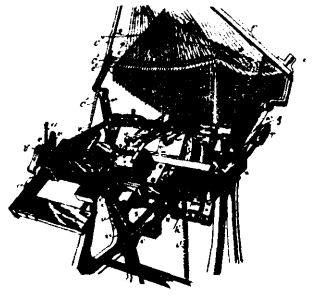
40323 Carey's Pipe Coupling.



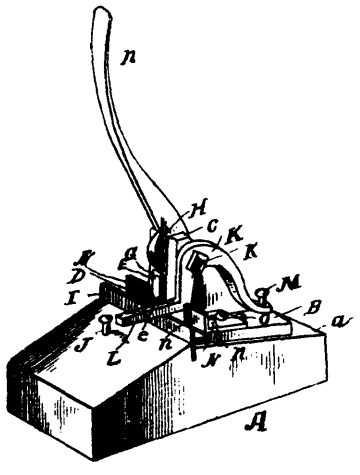
40324 Spoelstra, Vandermeer and Stevens' Street Indicator for Street Cars.



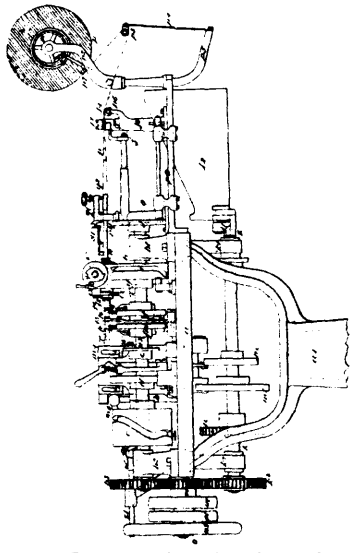
40326 Beck's Compound Steam Engine.



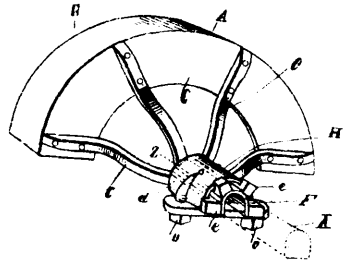
40327 Bright's Typograph.



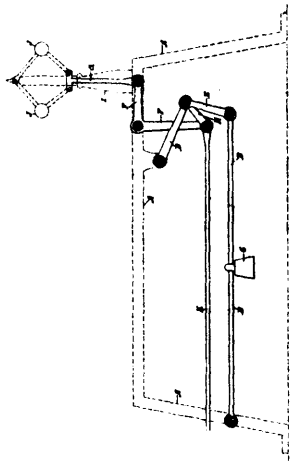
40328 Baker's Saw Set.



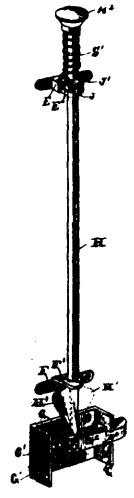
40330 Decoufle's Machine for making Cigarettes.



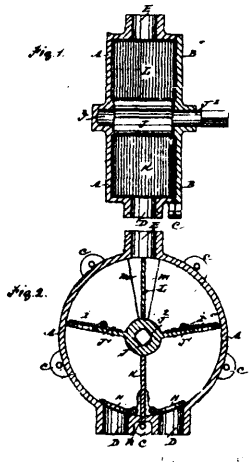
40331 Pain's Shield for Carriage Wheels.



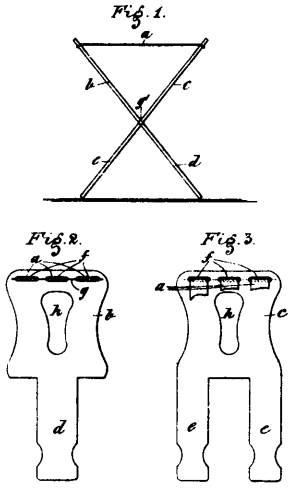
40333 Saylor's Speed Regulator for Governors.



40334 Bettmann's Gate Latch

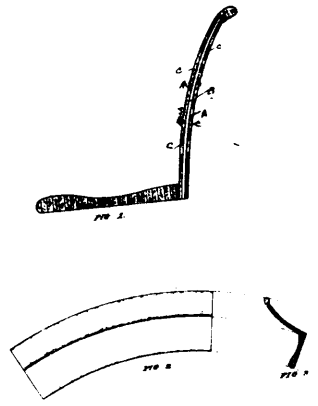


40335 Kievell and Wilkins' Pump.

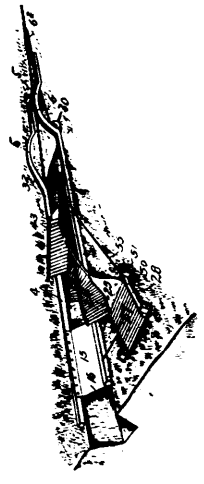


40336 Ellis' Camp Stool.

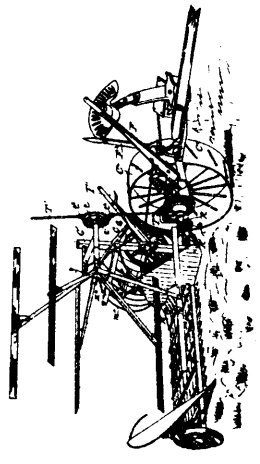
40337 Guilleaume's Fencing Wire.



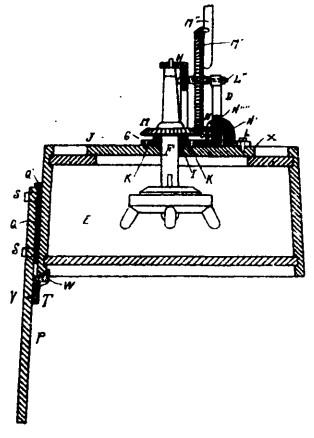
40339 Pennington's Pew Back.



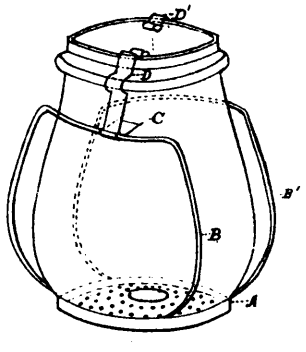
40340 Turner's Ditching Machine.



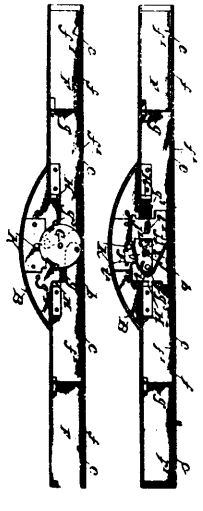
40341 Watrous' Grain Binder.



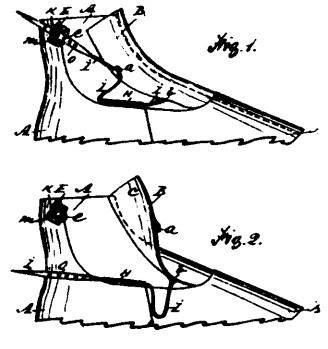
40342 Taylor's Washing Machine.



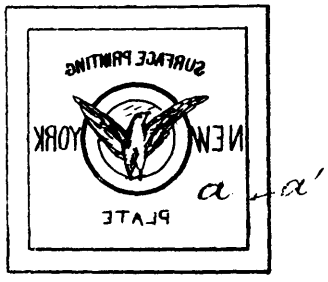
40343 Flower's Device for holding the Globe in Tubular Lanterns.



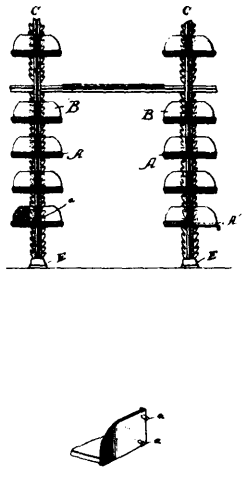
40344 McKinnon's Bag Lock.



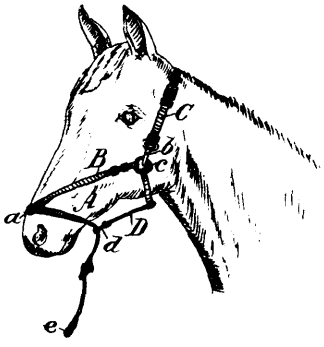
40345 Williams' Boot and Shoe.



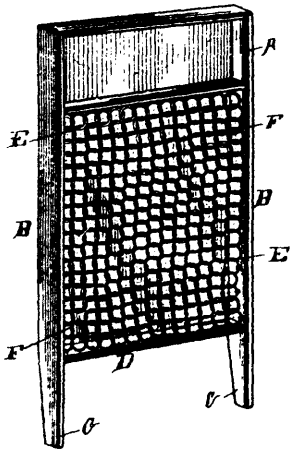
40346 Mullaby and Bullock's Surface-printing Plate.



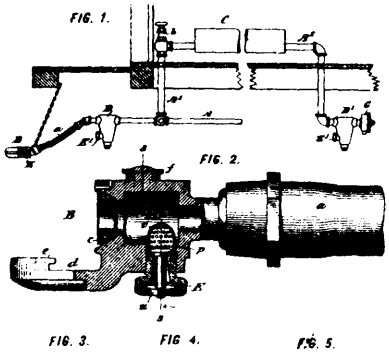
40347 Stikeman's Book-shelving.



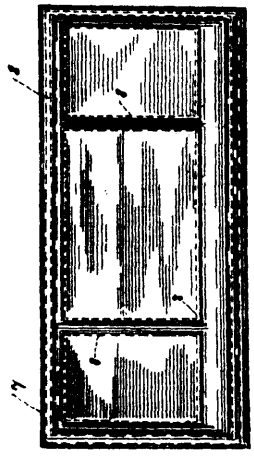
40348 Sisson's Halter.



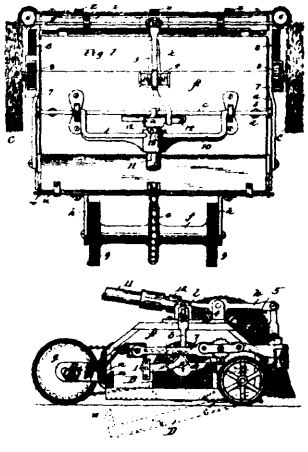
40349 Burke's Washboard.



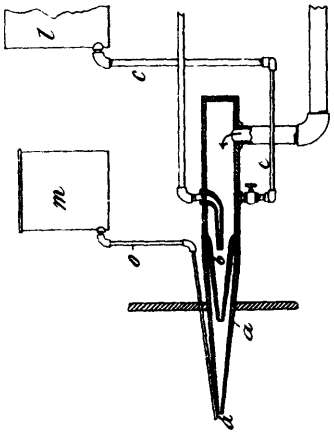
40350 Gold's Drainage Trap for Steam Pipes.



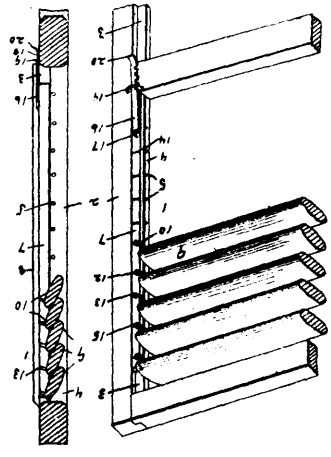
40351 Barnes' Dashboard.



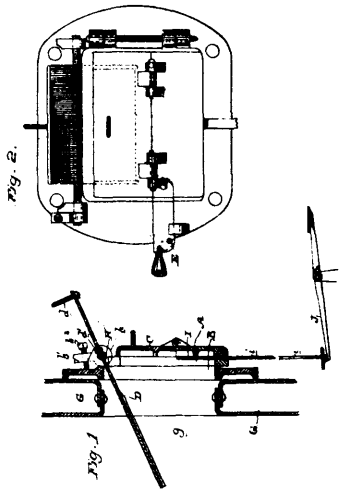
40352 Boggs' Carpet Sweeper.



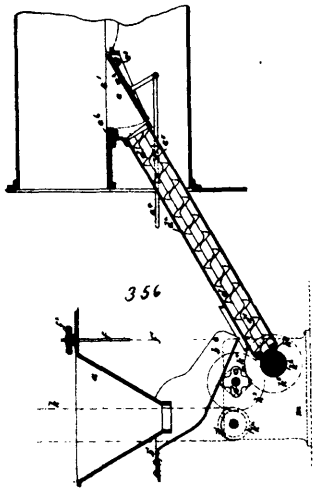
40353 Abbott's Apparatus for burning Liquid Fuel.



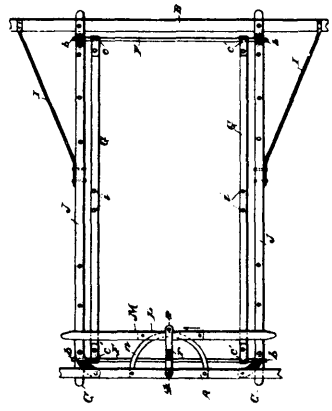
40354 Brown's Window Blind.



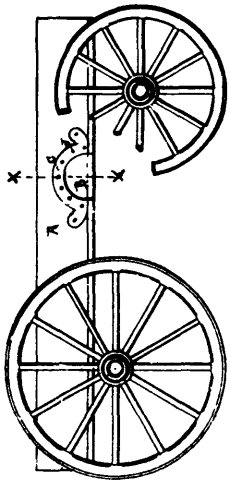
40355 Bates' Smoke Consumer



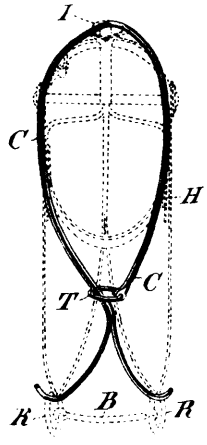
40356 Williamson's Mechanical Stoker.



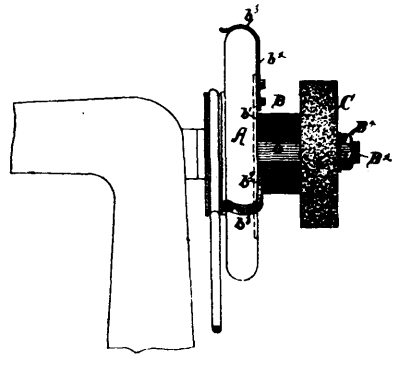
40357 Seaman's Vehicle.



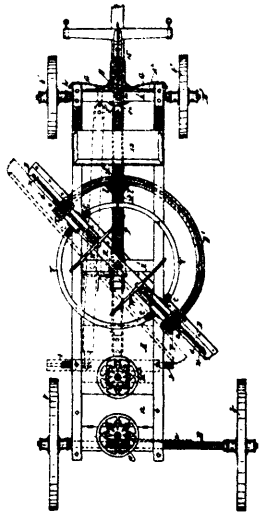
40358 McCubbin's Waggon Box.



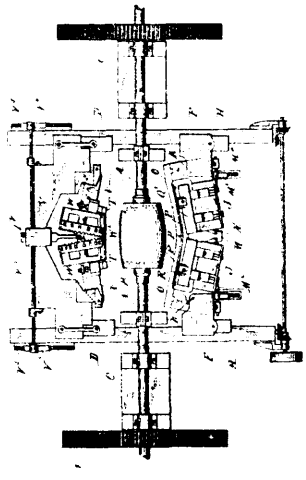
40359 Bruce's Halter.



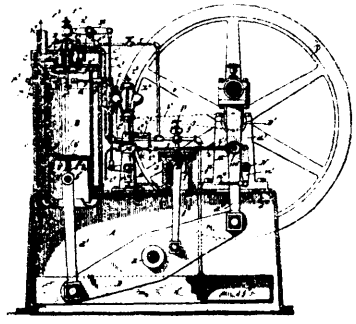
40360 McDowell's Sewing Machine Attachment.



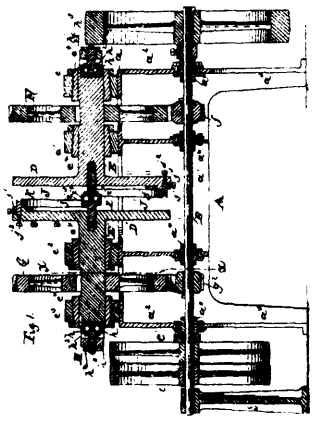
40361 Taft and Lathrop's Machine for Making, Repairing and Clearing Roads.



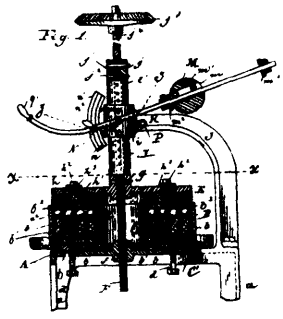
40362 Chapman's Machine for Cutting Staves or Barrel Covers.



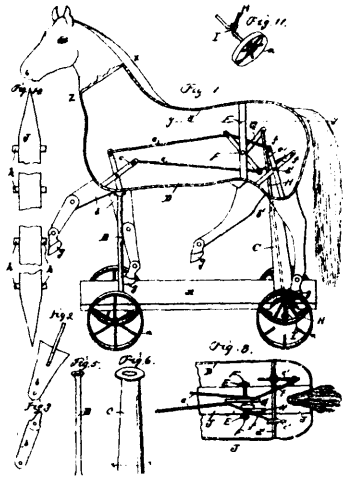
40363 Brayton's Hydro-carbon Engine.



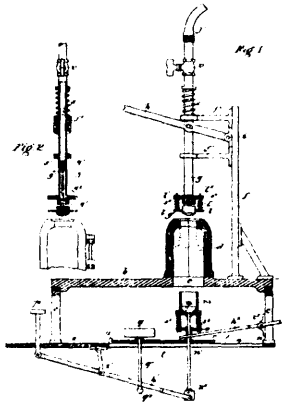
40364 Jones' Machine for making Metal Balls.



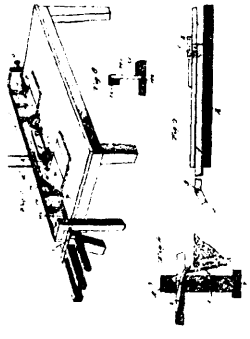
40365 Jones' Machine for Grinding Metal Balls.



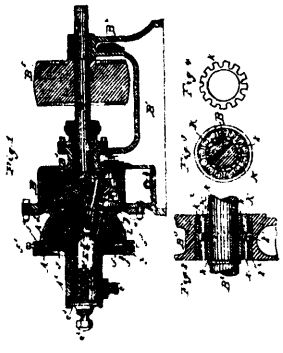
40366 Snyder's Toy.



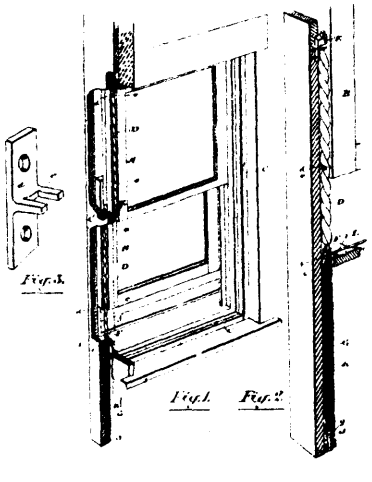
40367 Jones' Machine for Pressing and Blowing Glassware.



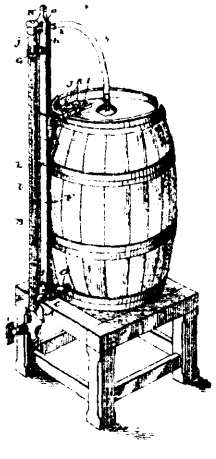
40368 Linderman's Dovetail Joint-closing Machine.



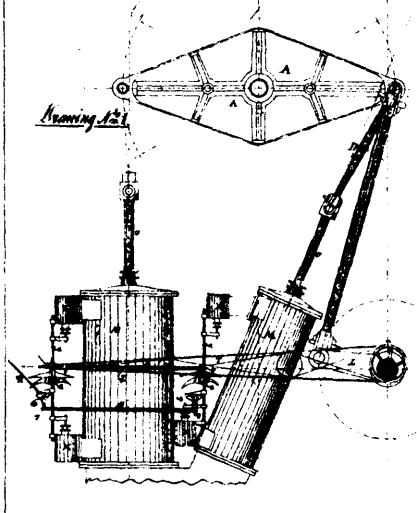
40369 Smith's Steam Engine.



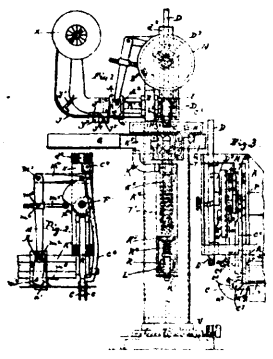
40370 Sharp and Reid's Sash Balance.



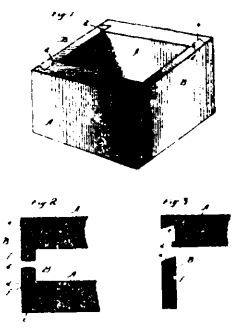
40371 Sharp and Reid's Liquid Gauge and Tap.



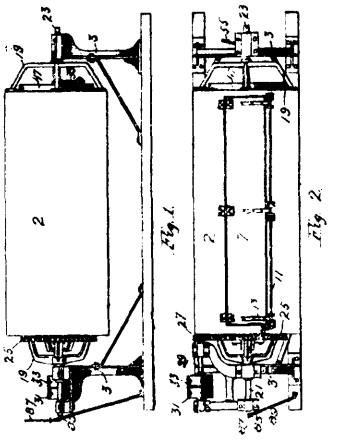
40372 Larochelle's Steam Engine.



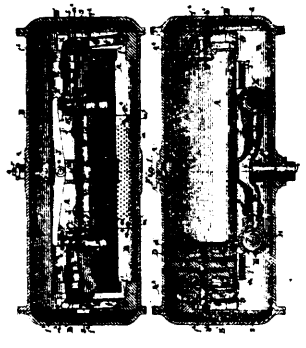
40373 Lynam's Book-stapling Machine.



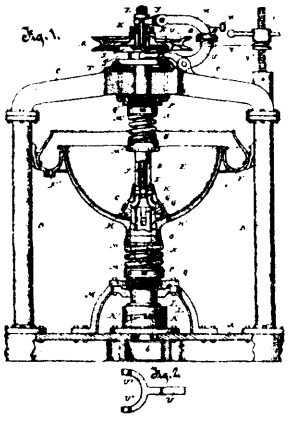
40374 Linderman's Corner Joint for Packing Boxes.



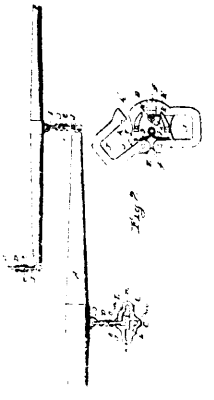
40375 Disbrow's Churn and Butter Worker.



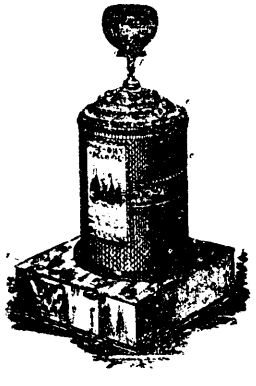
40376 Rogers' Water Meter.



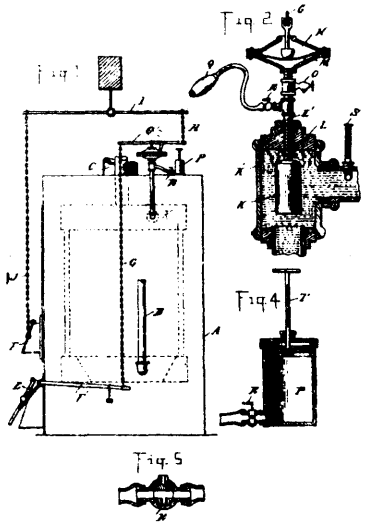
40377 Seymour and Staver's Ore Concentrator.



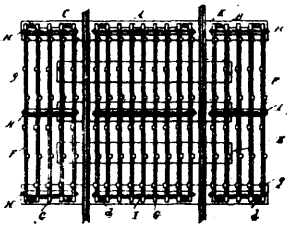
40378 Lohr's Whiffletree.



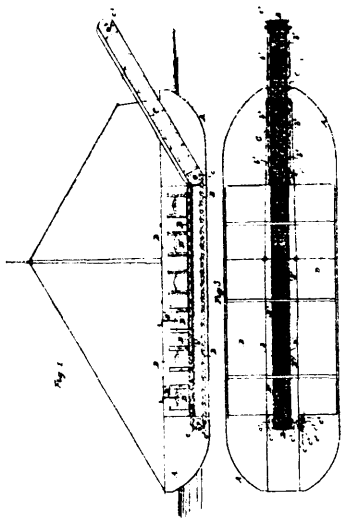
40379 White's Cigar Tip Cutter and Advertising Device.



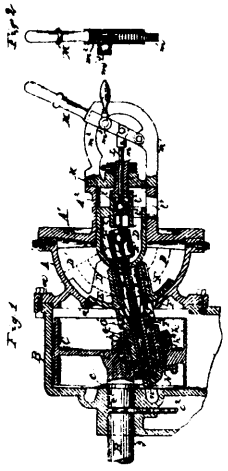
40380 Jewett's Damper Regulator.



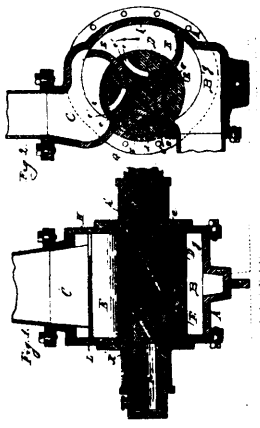
40381 Hall's Cattle Guard.



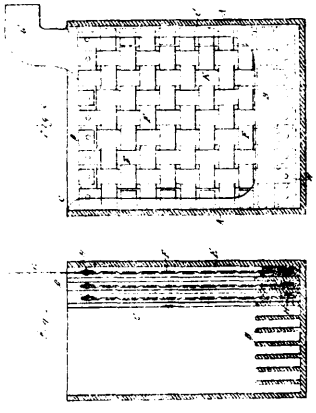
40382 Paul's Apparatus for Unloading Vessels.



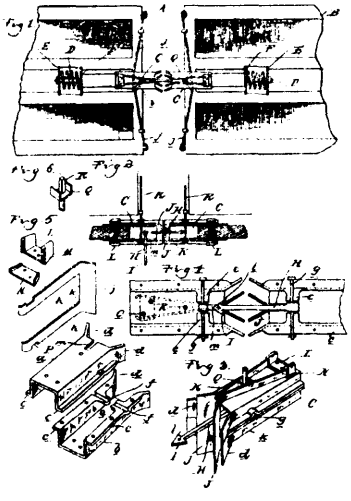
40383 Smith's Steam Engine.



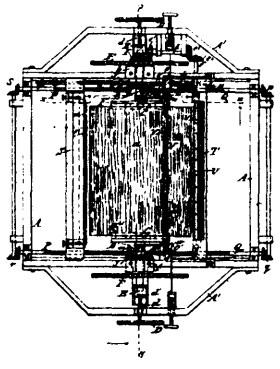
40384 Taber's Rotary Pump.



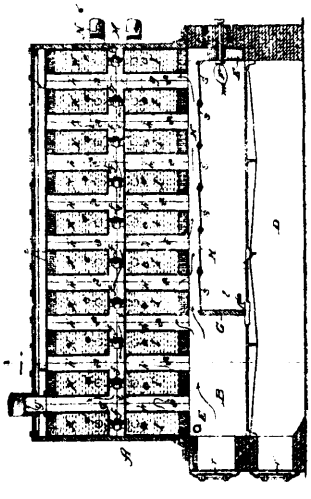
40386 Gerry and Long's Secondary Battery.



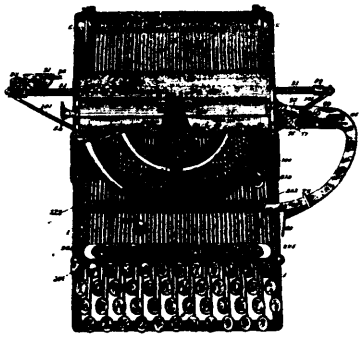
40387 Hoff's Car Coupler.



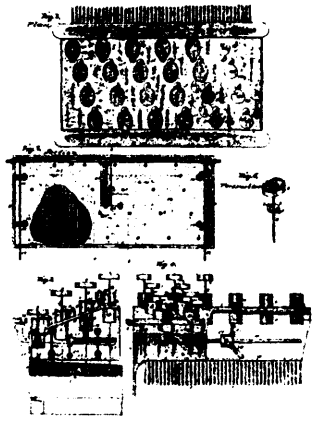
40388 Smith and Plumb's Rotary Veneer or Lumber Cutter.



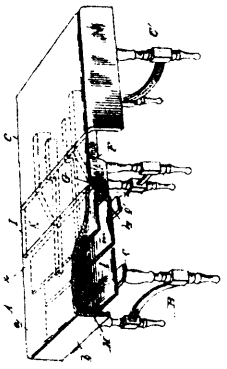
40389 Wilber's Heater.



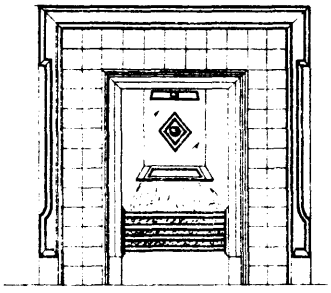
40390 Lasar's Type-writer.



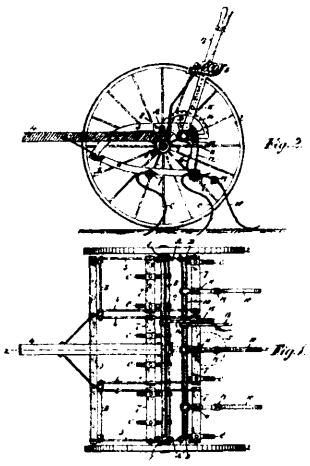
40391 Lasar's Type-writer.



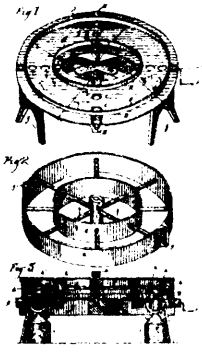
40392 Williams' Extension Table.



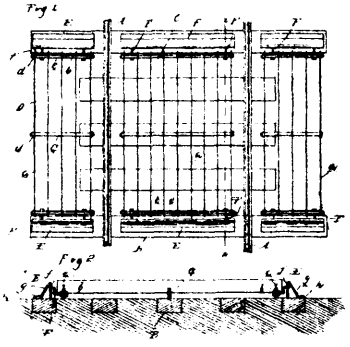
40393 McKenzie's Flue for Fire-places.



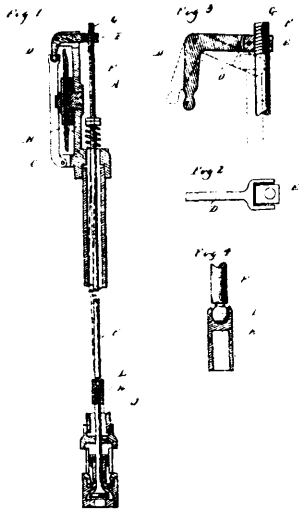
40394 Publow's Spring Tooth Harrow.



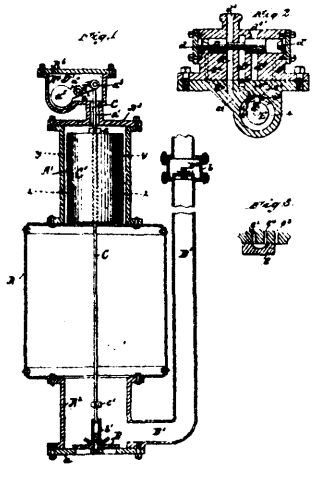
40395 Nevill's Tire Heater.



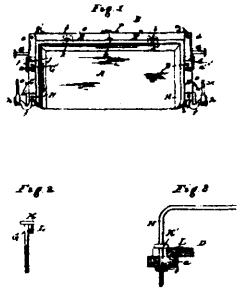
40396 Whittemore's Cattle Guard.



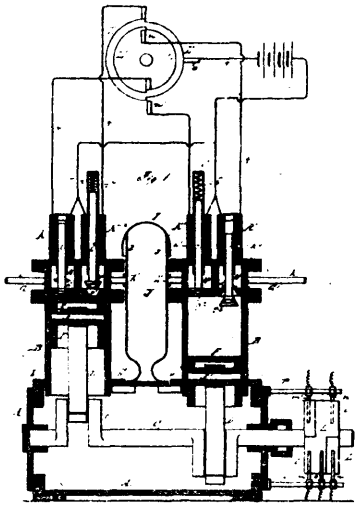
40397 McElroy's Temperature Regulator.



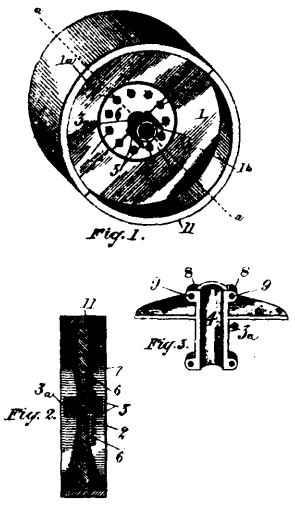
40398 Halsey's Pneumatic Pump.



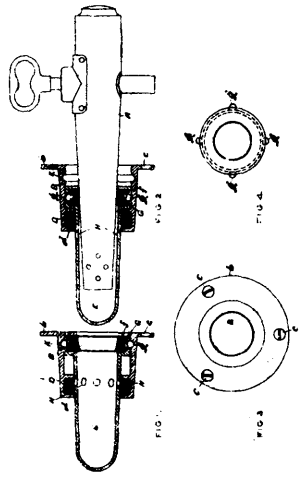
40399 Parker's Shifting Rail for Carriages.



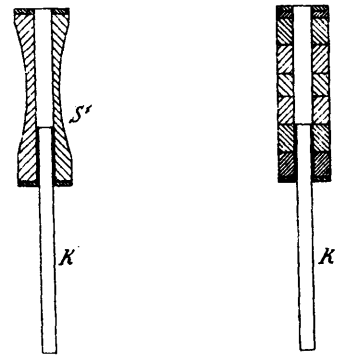
40400 Dittmar and Falkenhausen's Air Pump.



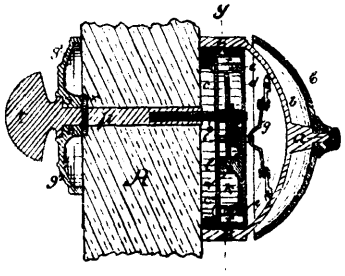
40401 Maurer's Pulley.



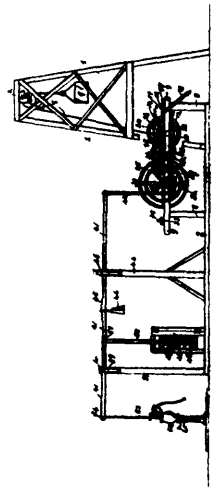
40402 Mayhew's Tap Socket for Barrels.



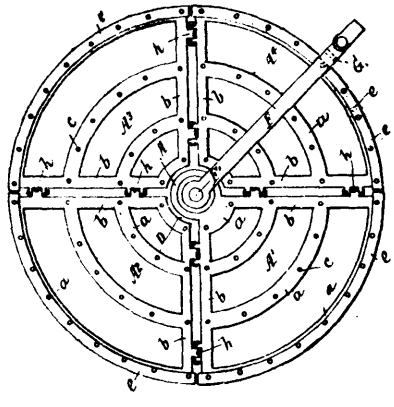
40403 Michl's Core-attracting Solenoids.



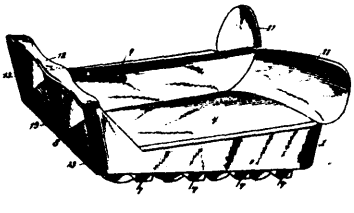
40404 Allen and Goulden's Door Bell.



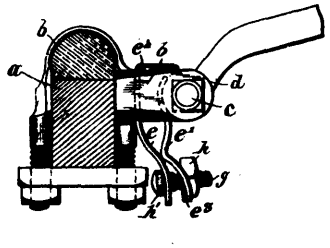
40405 Wightman's Pump Motor.



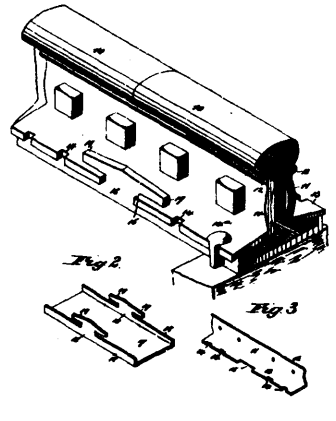
40406 Neville's Harrow.



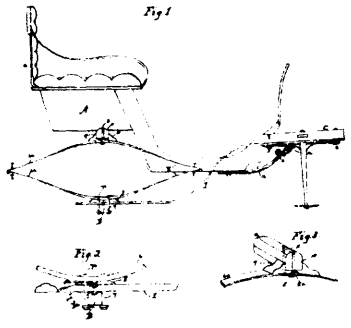
40407 Kobb's Snow Plow.



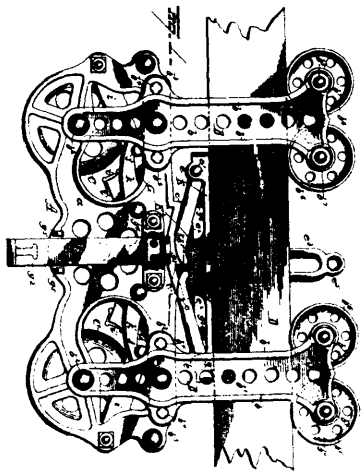
40408 Wilder's Anti-rattler for Thill Couplings.



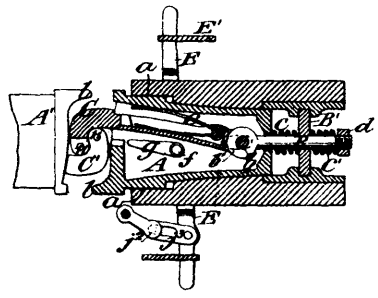
40409 Stacy's Rail Joint.



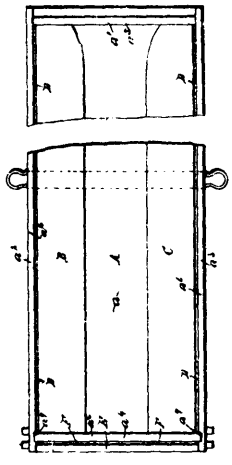
40410 Armstrong's Road Cart.



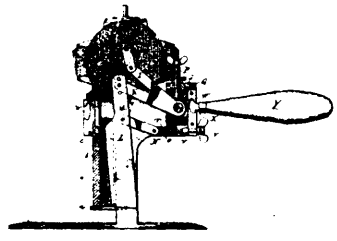
40411 Londen's Hay Elevator and Carrier.



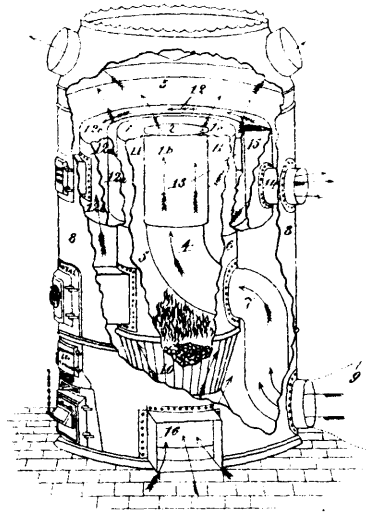
40412 Watson's Car Coupler.



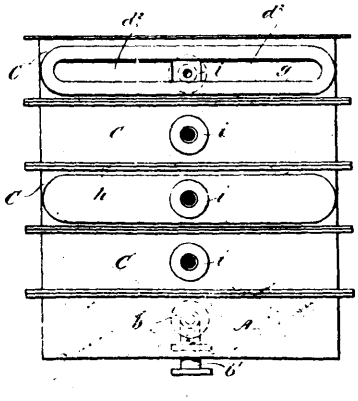
40413 Couch's Vehicle Box.



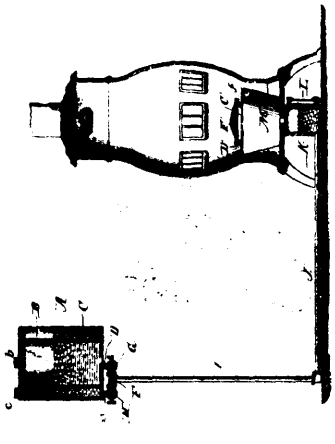
40414 Caldwell's Machine for Cutting Cloth.



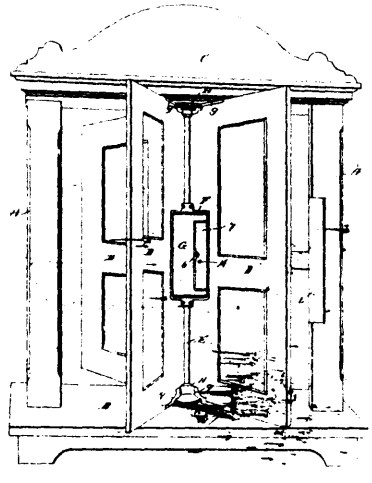
40415 Tate's Hot Air Furnace.



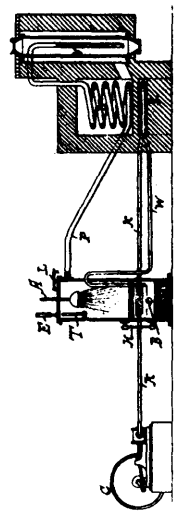
40416 Ellis' Apparatus for Distilling.



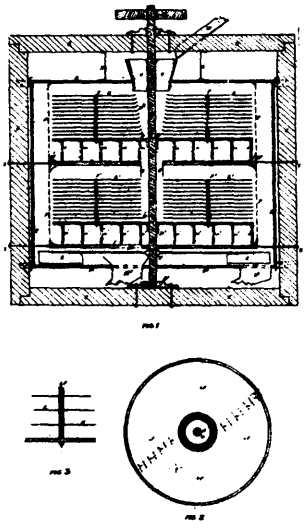
40417 LaRue's Carbon Burner.



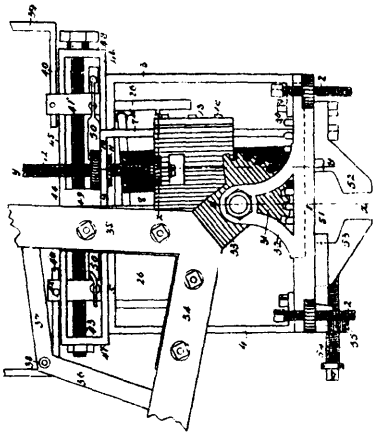
40418 Caspar's Coin-operated Lock.



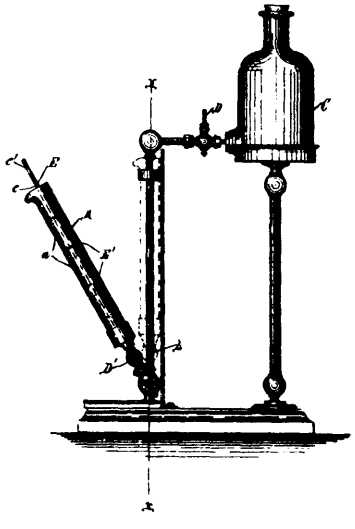
40419 Zwillinger's Process of making Charcoal,



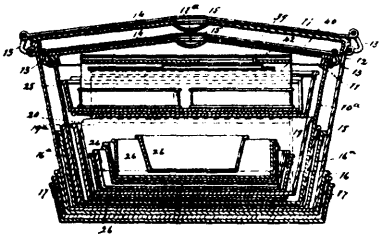
40420 Creaser's Machinery for Dressing Flour Middlings, &c.



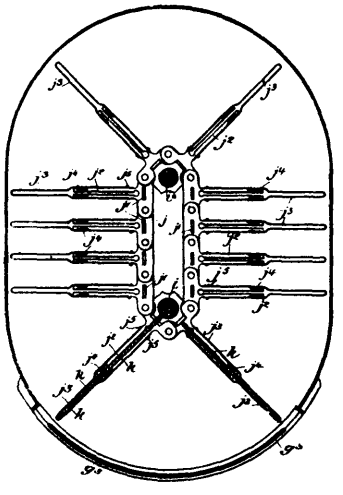
40421 Angell's Cutter for Railroad Rails.



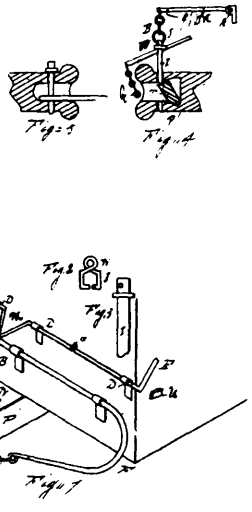
40422 Clement's Process of Testing Liquids and Substances.



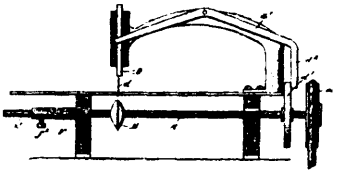
40423 Marcee's Field Range.



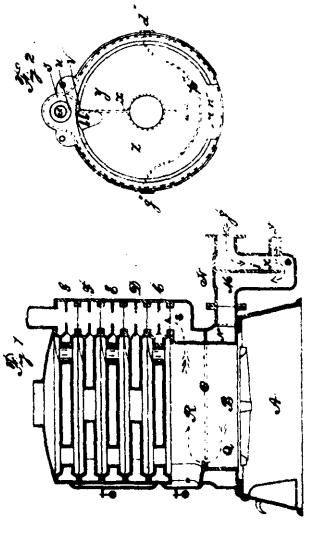
40424 Robertson's Station Indicator.



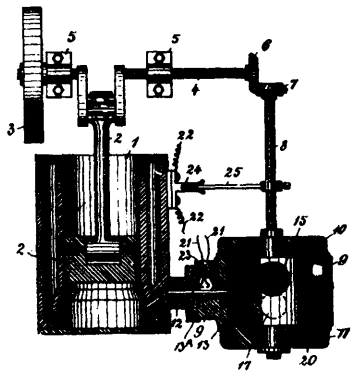
40425 Eakins' Car Coupler.



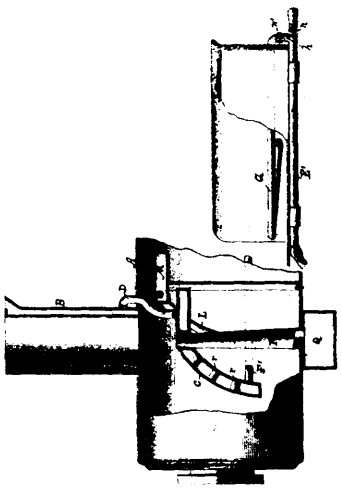
40426 Tracy's Sewing Machine.



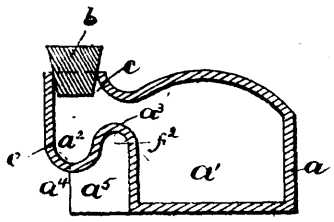
40427 Manny's Hot Water Furnace.



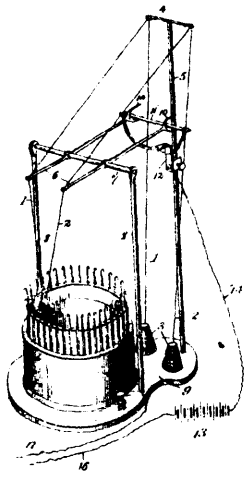
40428 Evans' Gas Engine.



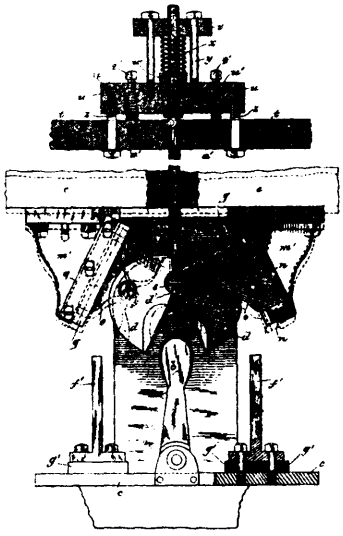
40429 Walsh's Water Heater.



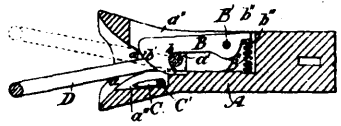
40430 Collins' Ink Bottle.



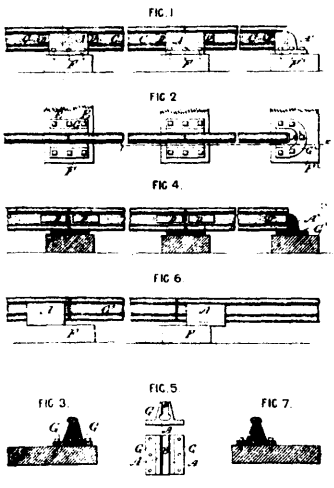
40431 Manderfield's Stopping Mechanism for Knitting Machines.



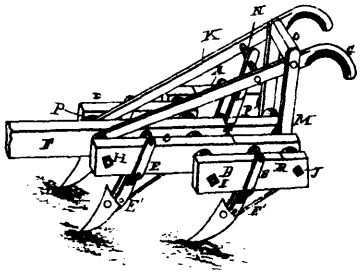
40432 Stewart's Machine for Molding Heel Stiffeners.



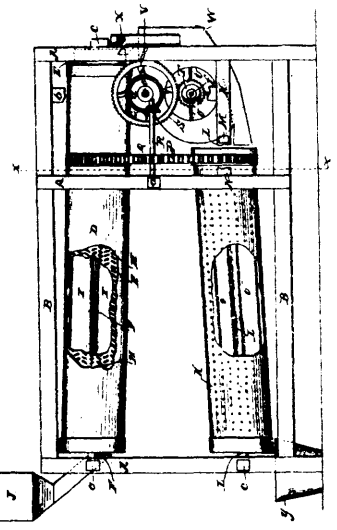
40433 Grant's Car Coupler.



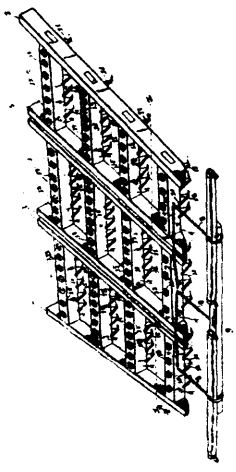
40434 Sayers' Chair for Railway Rails.



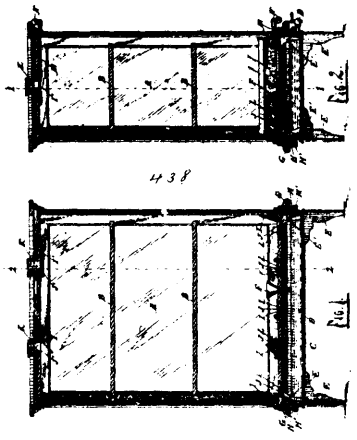
40435 Penn's Gang Plow.



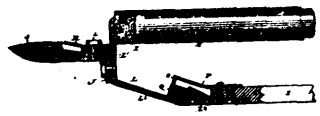
40436 Loger's Separator for Flax Seed.



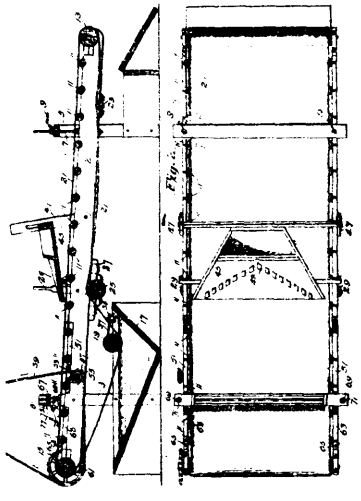
40437 Wilfert's Harrow.



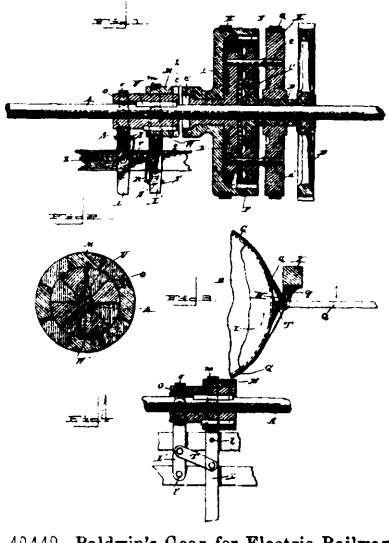
40438 Streator's Case for Preserving Merchandise in a Moist Condition.



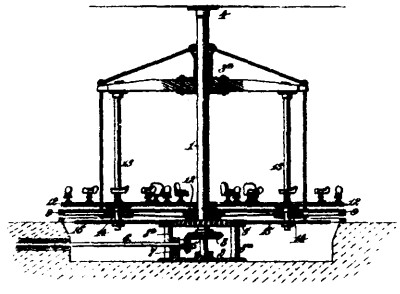
40440 Wilkins' Harvester.



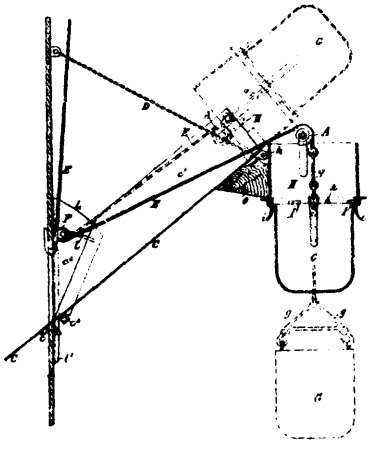
40441 Brent's Ore Concentrator.



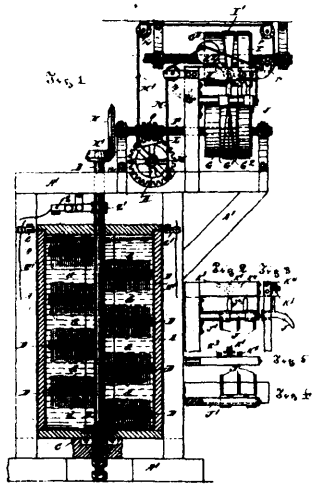
40442 Baldwin's Gear for Electric Railway Cars.



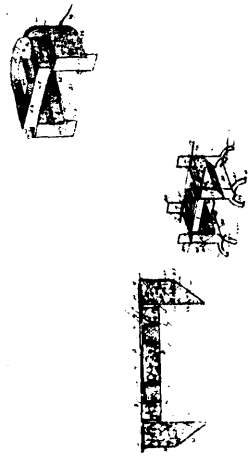
40443 Fowler's Merry-go-round.



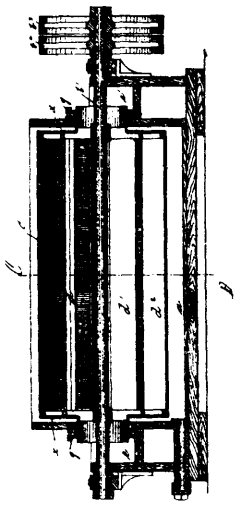
40444 Abbott's Apparatus for Loading and Unloading Vessels



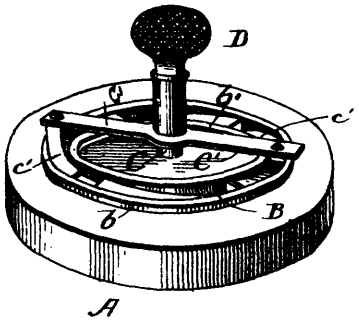
40445 Pfanne's Apparatus for making Varnish.



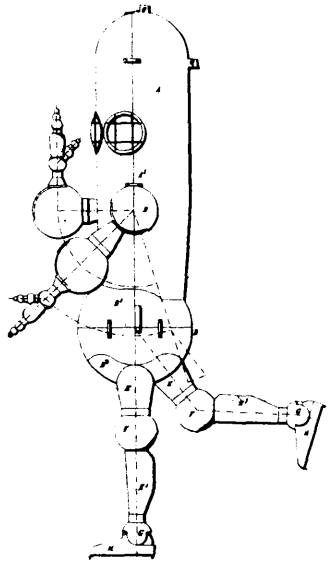
40446 Magill's Body Cooler and Supporting Frame therefor.



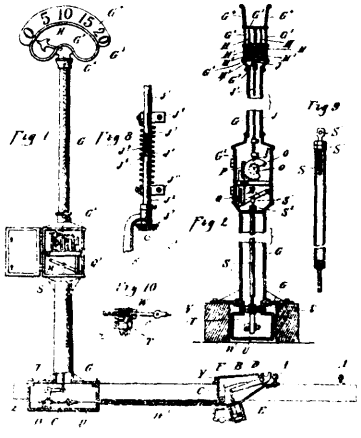
40447 Wandel's Apparatus for sorting Cellulose.



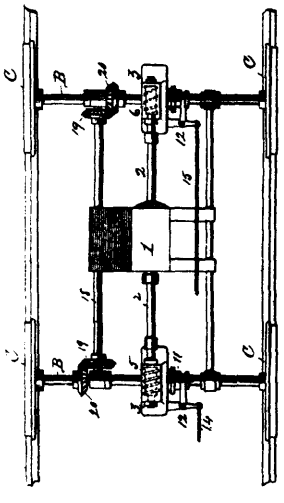
40448 Huntington's Electric Switch and Cut out.



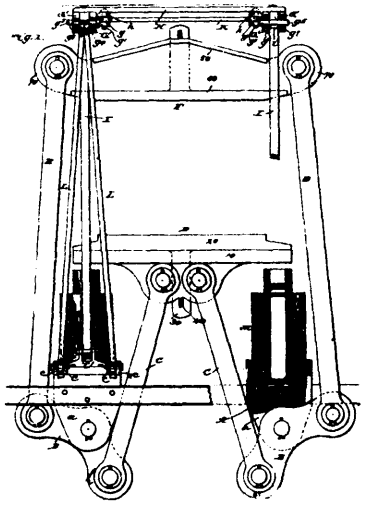
40449 Carey's Diving Dress.



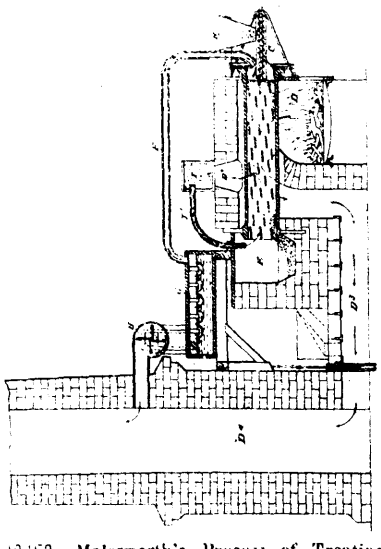
40450 Fountaine's Railway Time Signal.



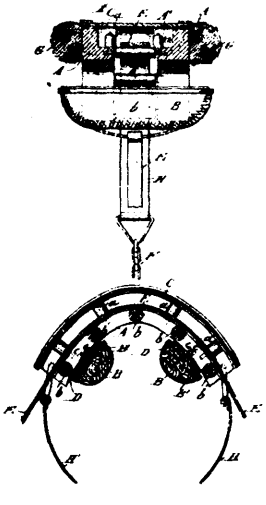
40451 Soley and Perkins' Electrical Locomotive.



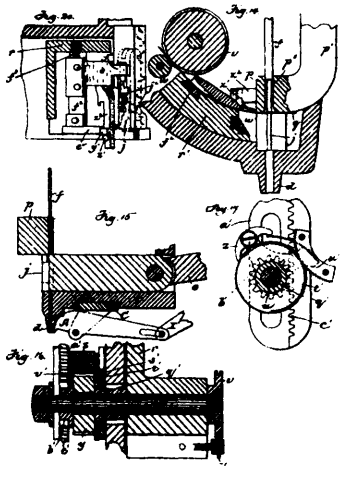
40452 Deane's Compound Press.



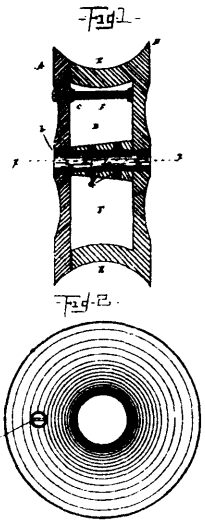
40453 Molesworth's Process of Treating Metalliferous Ores.



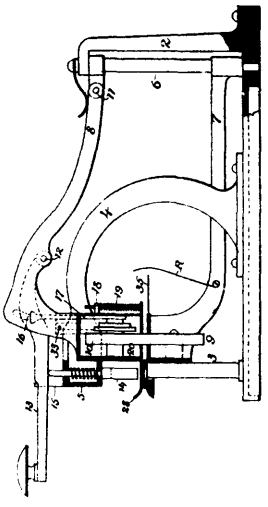
40454 Blackford's Cart Saddle.



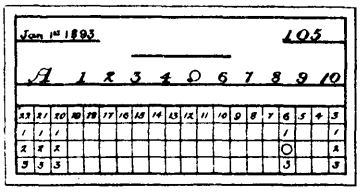
40455 Coupal's Staple-driving Machine.



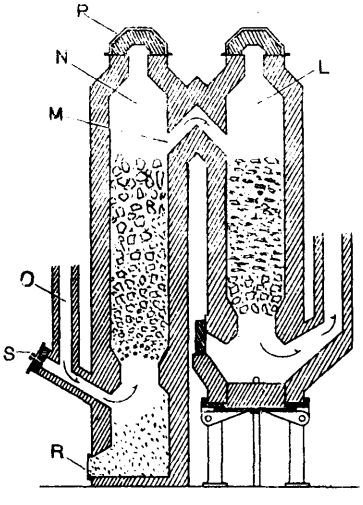
40456 McColl's Pulley Wheel.



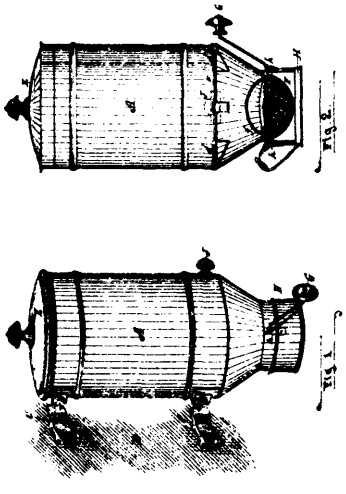
40457 Robinson's Check Puncher.



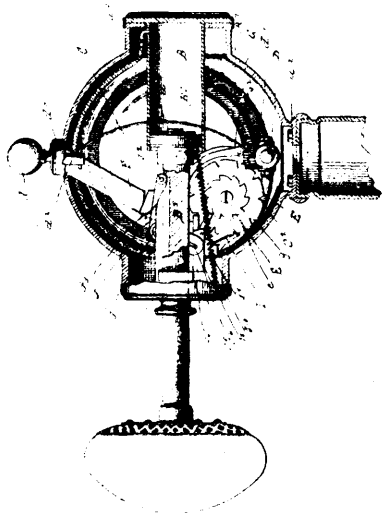
40458 Whitehead's Transfer Ticket.



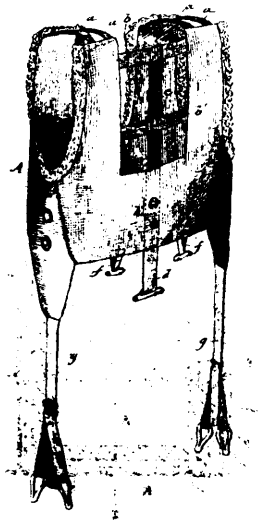
40459 Wainwright's Process of Reducing Ore.



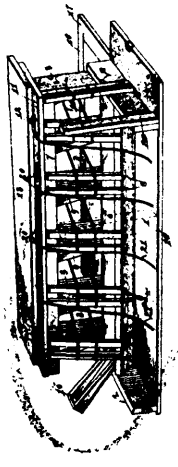
40460 Gill's Flour Bin, Sifter and Measure.



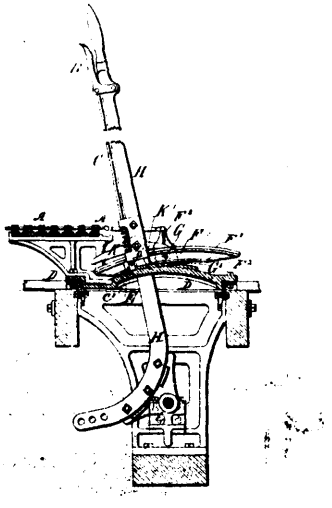
40461 Kremer's Machine for Testing Strength.



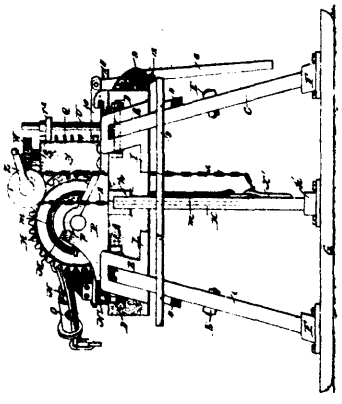
40462 McKay's Underwaist.



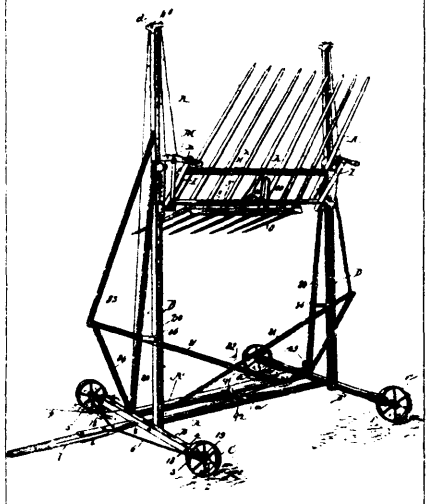
40463 Stellenberger's Feed Trough.



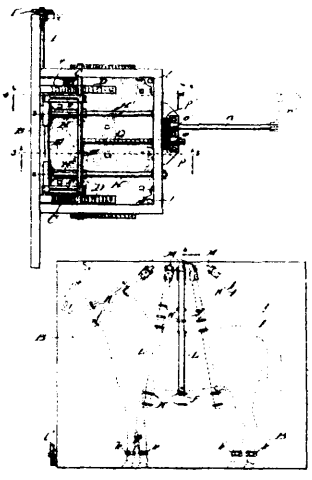
40464 Bezer and Burley's Mechanism for Actuating Railway Switches and Signals.



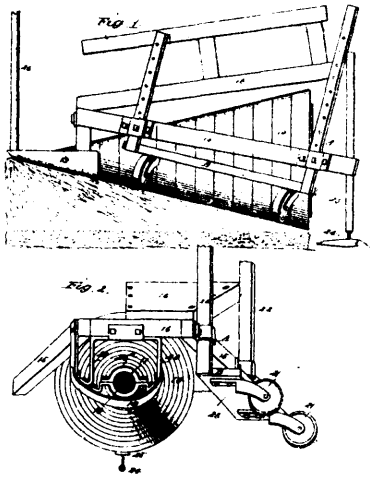
40465 Cornelius' Wrecking Machine and Stump Extractor.



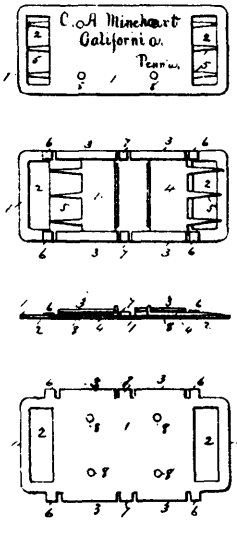
40466 Oliver's Hay Ricker.



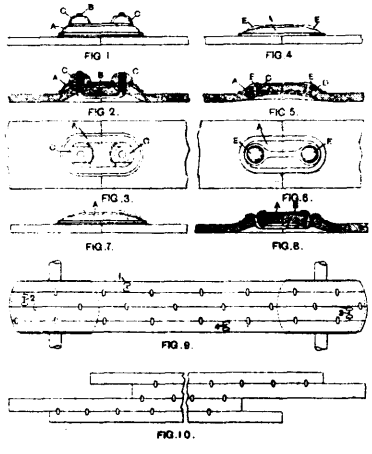
40467 Copp's Veterinary Operating Table.



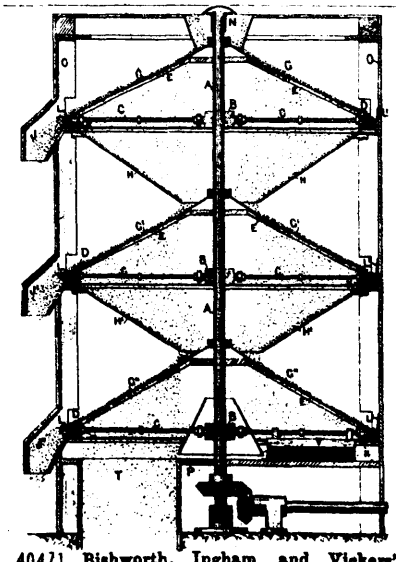
40468 Talbot's Machine for Stacking Hay, &c.



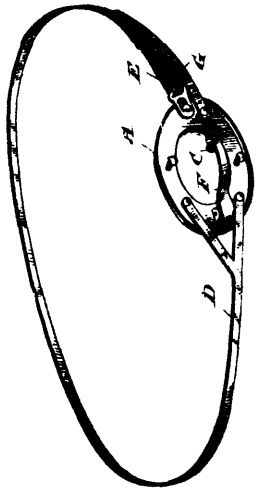
40469 Minehart's Buckle.



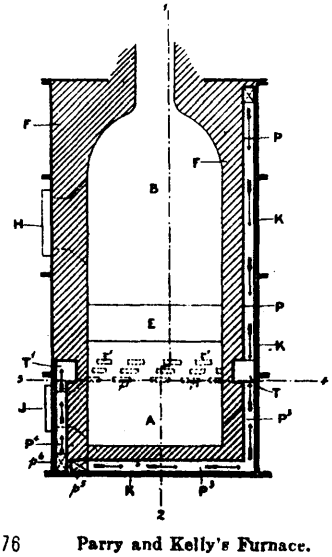
40470 Jackson's Driving Belt.



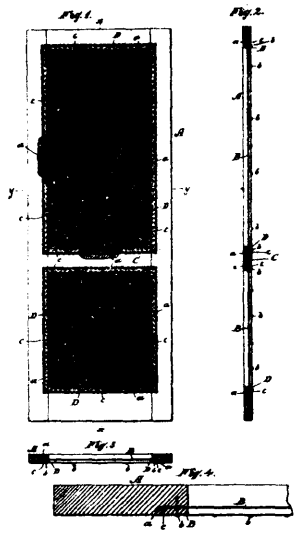
40471 Bishworth, Ingham and Vickers' Machine for Sorting and Separating Substances.



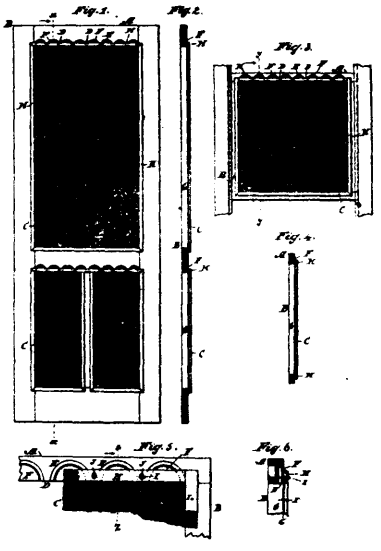
40472 Cluthe's Truss.



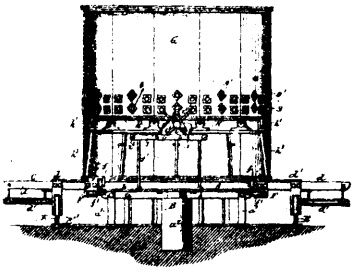
40476 Parry and Kelly's Furnace.



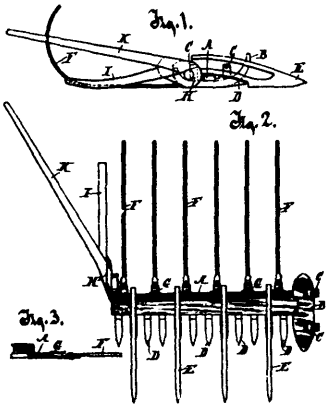
40477 Shirreff's Screen Door.



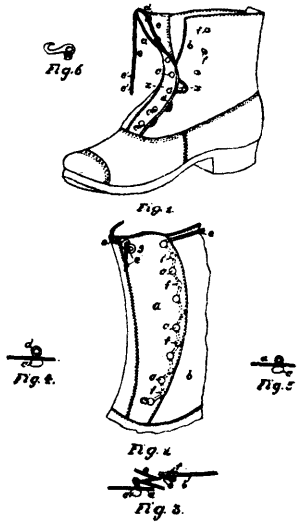
40478 Shirreff's Window and Door Screen.



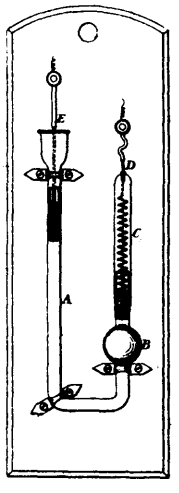
40479 Perew's Round about.



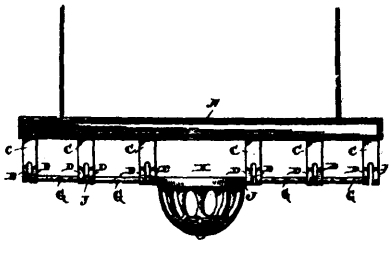
40480 Stephani's Mower.



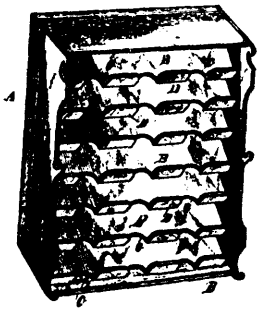
40481 Bertrand and Duncan's Shoe-lacing Device.



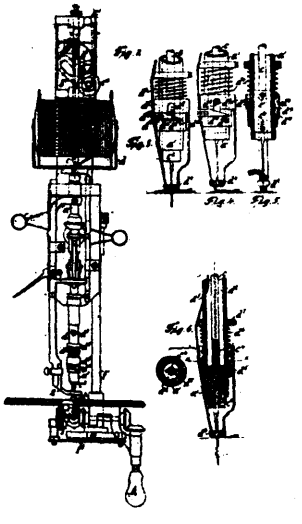
40482 Keating's Electric Cut out.



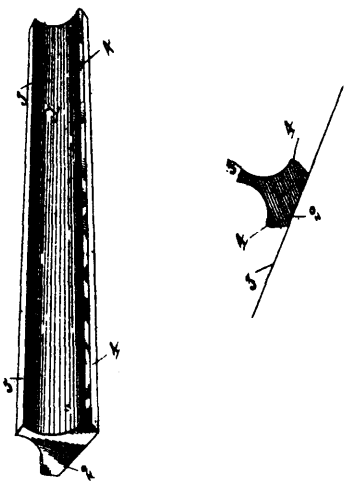
40483 Streeter's Bag Holder.



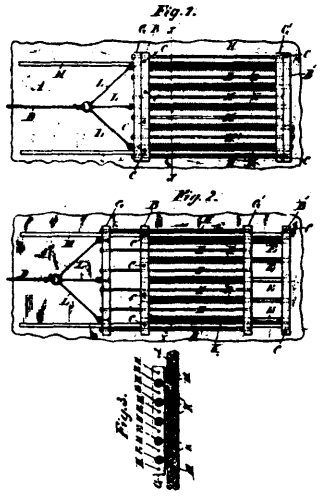
40484 Miller's Book and Blank Case.



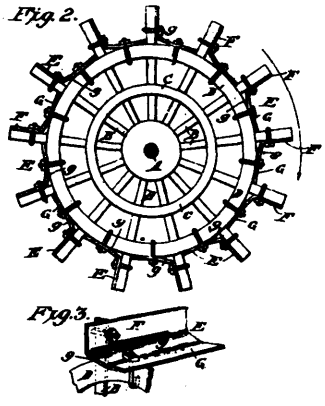
40485 Haas and Lintz's Sewing Machine.



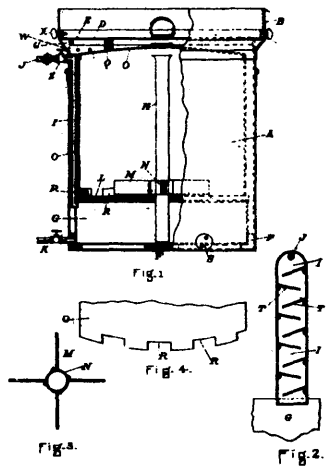
40486 McKercher's Ruler.



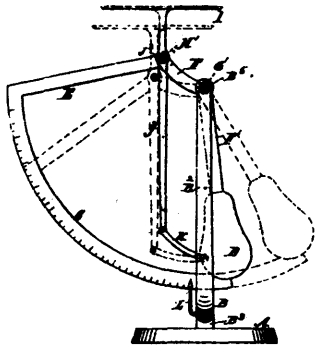
40487 Briggs' Towing Bridle.



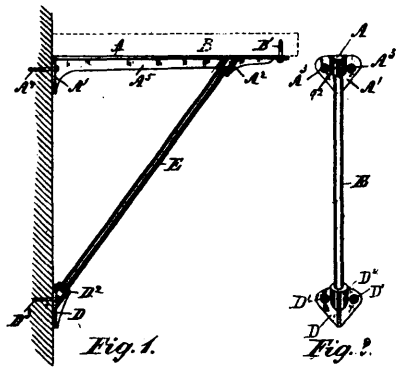
40489 Richter's Paddle Wheel.



40490 Laird's Apparatus for making Illuminating Gas.



40491 Martin's Pendulum Scales.



40492 McShane's Shelf Bracket.