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. 12. DECEMBER, 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. 41,124. Transfer Ticket. (*Billet de transfert.*)

Wallace Maclean, Toronto, Ontario, Canada, 9th December, 1892; 6 years.

Claim.—1st. A transfer ticket bearing a name or mark to indicate the line by which it is issued and the numeral or other mark to denote the particular trip of the car issuing it, substantially as and for the purpose set forth. 2nd. A transfer ticket bearing a name or mark to indicate the line by which it is issued, and the numeral or other mark to denote the particular trip of the car issuing it, in combination with a transfer schedule containing names or marks of the crossing lines and numbers to denote the number of the trip of each car which will connect with the car issuing the ticket, substantially as and for the purpose specified.

No. 41,125. Adjustable Number Device.

(*Appareil adjustable de nombres.*)

John Franklin Evert, Mendon, Michigan, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The combination of a chart bearing numbers, a vertically adjustable carriage, comprising a transverse bar having adjustable bearings on the sides of the chart frame, and slotted plates at the ends of said bar, and slides bearing numbers and adapted to be adjustably inserted in said slots, substantially as set forth. 2nd. The combination of a frame bearing a figured chart, the transverse bars in front and back of the chart, blocks having sliding bearings on the sides of the chart frame and attached to the ends of said bars, slotted plates attached to said blocks, slides adapted to be adjustably inserted in said slots, and a spring on the back bar for holding the transverse bars in different vertical positions, substantially as set forth. 3rd. The combination of a chart bearing numbers, the vertically carriage comprising a transverse bar in front of said chart, said bar having adjustable bearings on the sides of the chart frame, and slotted plates at its ends, and a longitudinal groove in the upper side of said bar, slides bearing numbers and adapted to be inserted in the end slotted plates of said bar, and a series of individual checks for bearing numbers and to be placed in the groove of the bar of the carriage to show results, substantially as set forth.

No. 41,126. Screw Stoppers. (*Arrêt de vis.*)

John James Varley, London, England, 9th December, 1892; 6 years.

Claim.—A screw stopper made of wood impregnated under pressure with a solution of gum, then stoved, afterwards coated with enamel and again stoved, substantially as and for the purpose set forth.

No. 41,127. Pen for Drawing. (*Plume pour tracer.*)

John Phillips, Walworth Road, County of London, England, 9th December, 1892; 6 years.

Claim.—1st. A drawing or stippling pen comprising in its construction a needle and needle bar, a holder and ink receptacle adapted to guide the said needle bar and supply the needle with ink, and mechanism for imparting to the needle bar a rotary motion around its axis, as well as a to and fro motion along the same, substantially as described. 2nd. In a drawing or stippling pen having a reciprocating needle and needle bar guided in a holder, the combination of the needle bar and holder, with a simultaneously revolving and reciprocating driving spindle adapted to transmit its rotary motion upon the needle bar, and a buffer spring interposed between the needle bar and the driving spindle, and adapted to transmit the axial motion of the driving spindle upon the needle bar, until the pressure on the point of the needle exceeds a given limit, substantially as described. 3rd. In a drawing or stippling pen having a reciprocating needle and needle bar guided in a holder, the combination of an annular cam face or roller path formed on the holder, with a continuously revolving driving spindle, a cross head fixed on the said driving spindle, and carrying a pair of friction rollers adapted to run on the said cam face, a spring adapted to keep the friction rollers in contact, and mechanism for transmitting the motion of the driving spindle to the needle bar, substantially as described. 4th. In a drawing or stippling pen having a reciprocating needle and needle bar guided in a tubular holder, the combination of an extensible holder provided with an annular cam face, with a revolving driving spindle adapted to set in motion the needle bar, a cross head fixed on the driving spindle and carrying a pair of friction rollers adapted to run on the said cam face, and a spring adapted to press the said rollers against the cam face, substantially as described. 5th. In a drawing or stippling pen having a reciprocating needle and needle bar, an extensible holder, comprising in its construction a pencil shaped lower part serving as a needle guide and ink receptacle, a tubular middle part serving as a lower guide and packing for the needle bar, and connected with the lower part by a screw joint, and a tubular upper part serving as a guide for the driving spindle, substantially as described. 6th. In a drawing or stippling pen having a reciprocating needle and needle bar guided by a holder, the combination of the needle bar, with a driving spindle receiving a rotary and a reciprocating motion, a coupling sleeve, and a compensating or buffet spring interposed between the needle bar and the driving spindle, the said parts being arranged and connected with each other in such a manner as to transmit the rotary motion of the driving spindle to the needle bar through the coupling sleeve, and the reciprocating motion through the spring, substantially as described. 7th. The combination of a drawing or stippling pen, with a flexible shaft adapted to transmit rotary motion to the mechanism of the said pen, an electro motor adapted to drive the said flexible shaft, a stand provided with a cylindrical column or post, and a bed plate or arm supporting the said motor or shaft, the said arm being adapted to pivot or turn on the said column or post, and to be secured thereto at various heights, substantially as described.

No. 41,128. Toy Bank Advertising Device. (*Jouet et appareil d'annonce.*)

John Willard Camvin, Montreal, Charles Leroy White, Toronto, Ontario, Canada, 9th December, 1892; 6 years.

Claim. As an advertising device, a toy bank provided with a plurality of sides to contain the advertisements, and a slot to receive the money and a pivotal support or standard C, on which the bank is designed to be rotated, as and for the purpose specified.

No. 41,129. Spoon Bait. (*Appats pour troller.*)

Ernest F. Pflueger, Akron, Ohio, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The herein described device for attaching trolling or other bait to a rod or snood, said device comprising a piece of wire or sheet metal bent into bow form, and having apertures near each extremity, which loosely engage the rod or snood, substantially as specified. 2nd. The combination, with a trolling spoon or other bait having a hole or aperture therein, of a fastening device for attaching said spoon or bait to a rod or snood, said device consisting of a short metal bow loosely engaging said aperture at its central portion, and provided with apertures near each end, which loosely engage the rod or snood, substantially as specified.

No. 41,130. Method of and Apparatus for Evaporating Liquids. (*Méthode et appareil pour évaporer les liquides.*)

Charles William Cooper, New York, State of New York, U.S.A., 9th December, 1892; 6 years.

Claim. 1st. The improvement in the art of evaporating liquids, which consists in continuously supplying the liquids to an evaporating apparatus, and in causing it to continuously and repeatedly circulate therein prior to and during its continuous discharge therefrom, substantially as set forth. 2nd. The improvement in the art of evaporting liquids, which consists in continuously supplying the liquids to an evaporating apparatus, and in causing it to continuously and repeatedly circulate therein, and in continuously discharging it from said apparatus into a second evaporating apparatus and in causing it to similarly circulate therein prior to and during its continuous discharge therefrom, substantially as set forth. 3rd. The method of evaporating liquid, which consists in continuously supplying the liquid to an evaporator, in causing it to circulate continuously and repeatedly therein through a tube supply chamber, evaporating tubes, a separating chamber, and a return conduit, and in evaporating the liquid while it is in circulatory transit through the evaporating tubes by the action of heat supplied to said tubes, and in continuously discharging the concentrated liquid from the evaporator, substantially as set forth. 4th. The method of evaporating liquids, which consists in continuously supplying the liquid to an evaporator, and in causing it to circulate continuously and repeatedly therein through a tube supply chamber, evaporating tubes, a separating chamber and a return conduit and in evaporating the liquid while in circulatory transit through the evaporating tubes by the action of heat supplied to said tubes, and in continuously discharging the concentrated liquid from the evaporator named into a second similar evaporator, in which a similar continuous circulation is set up and a similar continuous discharge effected, substantially as set forth. 5th. The combination to form an evaporator, of a tube supply chamber, a vapour and liquid separating chamber, evaporating tubes leading from said tube supply chamber to said separating chamber, and passing through an evaporating chamber, a return channel or conduit from said separating chamber to said tube supply chamber, means for supplying liquid to the tube supply chamber, means for discharging the concentrated liquid from the separating chamber, a vapour exit from the separating chamber, and means for supplying a heating medium to the evaporating chamber, substantially as set forth. 6th. The combination to form an evaporating apparatus, of a tube supply chamber, a vapour and liquid separating chamber, evaporating tubes leading from said tube supply chamber to said separating chamber, an evaporating chamber or casing inclosing the evaporating tubes, and provided with tube heads through which the tubes pass, a return channel or conduit leading from the lower portion of the separating chamber back to the tube supply chamber, a deflector or diaphragm within the separating chamber, and means for supplying a heating medium to the evaporating chamber, substantially as set forth. 7th. The combination to form an evaporating apparatus, of a series of evaporating chambers, each composed essentially of a tube supply chamber, evaporating tubes, a separating chamber and a return channel, or conduit, and each provided with means for supplying a heating medium to heat the evaporating tubes, all of the separating chambers being in communication by means of liquid passages, the first being provided with a liquid inlet for liquid to be evaporated, and the last provided with a liquid outlet for the condensed liquid, and all of them being in communication with a common vapour outlet, substantially as set forth.

No. 41,131. Spiral Hair Pin.

(*Epingle à cheveux en spirale.*)

John Thomas Larkin, Halifax, Nova Scotia, Canada, 9th December, 1892; 6 years.

Claim.—1st. A pin of the character described, in which the body portion of the pin is of a helical or spiral form, substantially as described and for the purpose specified. 2nd. A hair of jewelery pin, having a body portion of a helical or spiral form, and provided with a swivelled head, substantially as and for the purpose described.

No. 41,132. Damper. (*Régistre.*)

Charles A. Couch, Columbus, Ohio, U.S.A., 9th December, 1892; 6 years.

Claim. 1st. In a damper, the combination of the stem *a*, a conical or flaring surface deflector *b*, on said stem, a horizontal key pin *c*, also supported on said stem, and a deflecting ring *d*, suspended above said deflector *b*, said key being adapted to be journalled in a smoke pipe, substantially as and for the purpose specified. 2nd. In a damper, the combination with the stem *a*, a flaring deflector plate at each end thereof, a transverse key pin *c*, carried on said stem between said plates and a deflector ring *d*, suspended between said deflector plates, substantially as and for the purpose specified.

No. 41,133. Substitute for Scrubbing Brushes and Sponges. (*Substitut pour brosses et éponges à laver.*)

Walter Martene Taylor, Kings Cross, Middlesex, England, 9th December, 1892; 6 years.

Claim. The general arrangement and construction of the hereinbefore described device consisting of an elastic collapsible chamber, one face of which is provided with a number of ridges or points between which are arranged a number of perforations, substantially as and for the purpose set forth and described and illustrated in the accompanying drawings.

No. 41,134. Drier for Clothes. (*Séchoir à linge.*)

George W. North, Clarkes, Oregon, U.S.A., 9th December, 1892; 6 years.

Claim. As an improved article of manufacture the close rack described, consisting essentially of the vertically oblique bars A, and B, pivotally connected together, and the cross bars or rounds connecting said vertically oblique bars, the toothed plates secured to the outer sides of two of the bars A, below their pivotal points, and the pawls F, constructed as shown, and pivoted to two of the bars B, at a suitable distance from their upper enlarged ends and out of their longitudinal centres, to serve in locking the frame, substantially as and for the purposes specified.

No. 41,135. Hose Nozzle. (*Lance de boyau.*)

Thomas J. Carroll, Hamilton, Ontario, Canada, 9th December, 1892; 6 years.

Claim.—1st. In a hose nozzle for sprinkling water, a casing A, having an enlarged chamber containing a series of vertical walls F, the lower partition D, with inlet aperture E, in combination with the nozzle B, threaded to engage with said casing at *c*, the series of angled apertures P, with flexible washer H, and the metallic washer I, provided with vertical spreading wings J, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the adjustable nozzle B, as described, of a chamber casing having a series of vertical walls F, and opening E, the flexible washer H, placed immediately over said opening, and the metallic washer I, provided with wings J, capable of bending to position as shown, substantially as and for the purpose hereinbefore set forth.

No. 41,136. Scrubbing Brush. (*Brosse à laver.*)

Horace Blanchard, Boston, Massachusetts, U.S.A., 9th December, 1892; 6 years.

Claim. The improved scrubbing brush hereinbefore described, the same comprising in its construction, the acute angled triangular back having brush material on its under side and a socket on its upper side, and the handle having the curved neck or shank and the ball on said shank, said ball being engaged with the socket, as set forth.

No. 41,137. Blocking and Measuring Device.

(*Appareil à mesurer.*)

Fred Barnett Edmand, Toronto, Ontario, Canada, 9th December, 1892; 6 years.

Claim. 1st. The combination, with the tension rollers and folding means of a cloth measuring and blocking machine, of a pinion L, fixed to one of the tension rollers and geared to a wheel M, said wheel M, geared with a toothed wheel O, and having a pin N, engaging with the teeth of said wheel O, and the latter having indicating figures on its rim, substantially as described. 2nd. Two pivoted clamps supported opposite to each other, and designed to support a roll of cloth or other similar material on one side of a pair of tension rollers, one of the said clamps being connected to a longitudinally adjustable spindle, two clamps located opposite to each other and on the opposite of the tension rollers and designed to support a board on which the cloth may be wound, one clamp, being pivoted on the end of the longitudinally adjustable spindle, and the other clamp fixed to a spindle suitably journalled and connected to a cog pinion fixed to one of the tension rollers and geared to a wheel M, revolving within a toothed wheel O, said wheel M, having a pin engaging with the teeth of said wheel O, and the latter having indicating figures on its periphery, substantially as described.

No. 41,138. Machine for Making Confections.

(*Machine à faire les bonbons.*)

Thomas Robertson, Toronto, Ontario, Canada, 9th December, 1892; 6 years.

Claim.—1st. A reservoir containing a glutinous liquid, and having a tube or other compressible material extending from it, in combination with means for squeezing the tube to cut off the glutinous liquid and permit the "drop" to fall from the end of the tube, substantially as and for the purpose specified. 2nd. A reservoir containing a glutinous liquid, and having a tube of rubber or other compressible material extending from it, pneumatic or other means for expelling the glutinous liquid, in combination with means for squeezing the tube to cut off the glutinous liquid and permit the "drop" to fall from the end of the tube, substantially as and for the purpose specified. 3rd. A reservoir containing a glutinous liquid, having tubes of rubber or other compressible material extending from it and means for squeezing the tube to cut off the glutinous liquid, in combination with a "drop receiver" intermittently moved in a horizontal direction, substantially as and for the purpose specified. 4th. A reservoir containing a glutinous liquid, having tubes of rubber or other compressible material extending from it, and means for squeezing the tube to cut off the glutinous liquid, in combination with a "drop receiver" intermittently moved in a horizontal direction, and mechanism to cause the tubes and "drop receiver" to part when the "drops" are deposited thereon, substantially as and for the purpose specified. 5th. A hermetically sealed reservoir containing a glutinous liquid, and having tubes of rubber or other compressible material extending from it, in combination with an air pump connected to the reservoir, and a safety valve located thereon, substantially as and for the purpose specified. 6th. A hermetically sealed reservoir containing a glutinous liquid subjected to pneumatic pressure, a safety valve placed upon the reservoir from which reservoir tubes of rubber or other compressible material project, and means for squeezing the tube to cut off the glutinous liquid, in combination with intermittently moving paper carried below the tubes, substantially as and for the purpose specified. 7th. A reservoir containing a glutinous liquid, and having tubes of rubber or other compressible material extending from it, a web of paper carried below the tubes and intermittently moved in a horizontal direction, in combination with mechanism by which the paper receives at regular intervals an extra horizontal movement, and mechanism for cutting the paper immediately after said extra movement, substantially as and for the purpose specified. 8th. A reservoir containing a glutinous liquid, and having tubes of rubber or other compressible material extending from it, pneumatic or other means for expelling the glutinous liquid from the tubes, means for squeezing the tubes to restrain at given intervals the flow of glutinous liquid through them in combination with a drop receiver, intermittently moved in a horizontal direction, and mechanism to cause the paper to recede from the tubes when the drops are deposited thereon, substantially as and for the purpose specified. 9th. A reservoir containing a glutinous liquid and having tubes of rubber or other combustible material extending from it, pneumatic or other means for expelling the glutinous liquid from the tubes, means for squeezing the tubes to restrain at given intervals the flow of glutinous liquid through them, in combination with an endless apron, carrying a drop receiver intermittently moved in a horizontal direction, mechanism to cause the drop receiver to recede from the tubes when the drops are deposited and mechanism to impart a vibratory motion to the drop receiver after it has receded from the tubes, substantially as and for the purposes specified. 10th. A hopper-shaped reservoir A, containing a glutinous liquid and provided with a hermetically sealed detachable cover G, a pipe E, connecting the interior of the reservoir A, with the air pump F, a series of tubes I, extending from the bottom H, of the reservoir, and a pair of jaws *c*, extending across and on each side of the tubes, in combination with means for intermittently moving the jaws to grip the tubes, substantially as and for the purpose specified. 11th. A reservoir containing a glutinous liquid, a series of tubes extending from it, a pair of jaws *v*, suspended from the arms *w*, which are respectively pivoted on the independent vertical plate *z*, a bracket *y*, located between the arms *w*, each provided with a spring *z*, arranged to act against the bracket *y*, a pin a^1, projecting from each jaw *v*, in combination with a vertically moving plunger, having a cross head *t*, with horns *u*, formed on it and operated so that the horns *u*, will intermittently come in contact with the pin a^1, in such a manner as to force the jaws *v*, against the tubes, substantially as and for the purpose specified. 12th. An endless apron K, supported at one end by the drum L, and carrying a web of paper b^1, a suitably journalled shaft M, fixed to the drum L, and having a spur wheel N, fixed to it, which drives the rollers Q, and a ratchet wheel R, fixed to the shaft M, in combination with an eccentric U, fixed to the driving shaft J, arranged to operate the pawl with the ratchet wheel for the purpose of imparting an intermittent motion to the endless apron K, and paper b^1, substantially as and for the purpose specified. 13th. A hinged table *f*, located below the endless apron K, and paper b^1, which derives an intermittent motion in combination with a cam *i*, fixed to the shaft J, lever *h*, operated by said cam and the rod *g*, connecting the lever to the table and arranged to impart at regular intervals a vertical movement to the table, substantially as and for the purpose specified. 14th. The combination with an intermittently moving apron K, supporting a drop receiver, of a revolving agitator 5, arranged to impart a vibratory motion to the said apron, substantially as and for the purpose specified. 15th. A long arm n^1, pivoted on the shaft M, and supported by the block o^1, formed on the spring dog p^1, a crank arm r^1, extending from the arm n^1, and carrying the pawl s^1, in combination with the disk t^1, fixed to the shaft M, a projection u^1, and a finger v^1, arranged substantially as and for the purpose specified. 16th. A cutter f^1, suitably journalled in the frame of the machine and extending across the face of the paper b^1, a crank arm h^1, fixed to the cutter f^1, and actuated by a spring j^1, in combination with the arm k^1, and mechanism for causing the said arm to fall and strike the crank h^1, substantially as and for the purpure specified. 17th. A cutter f^1, suitably journalled in the frame of the machine and extending across the face of the paper b^1, a crank arm h^1, fixed to the cutter f^1, and actuated by a spring j^1, in combination with the dog m^1, pin x^1, pivoted arm n^1, and spring dog p^1, substantially as and for the purpose specified. 18th. An endless apron intermittently moved and supporting a web of paper, a a grooved metal plate held stationary on a line with the main surface of the apron and below the paper, rollers to carry the apron below and clear of the stationary plate, in combination with a cutter extending across the surface of the paper immediately above the grooved plate and operated by mechanism to bring it at certain intervals in contact with the paper, substantially as and for the purpose specified.

No. 41,139. Clamp for Bed Clothes.

(*Agrafe pour couvertures de lit.*)

Anthony W. Hamble, Allan, Kansas, U. S. A., 9th December, 1892; 6 years.

Claim. A bed clothes clamp comprising a plate provided with a perforated lug, clamping arms having their inner ends pivoted together and their outer ends provided with oppositely disposed concave circular clamping jaws, and a coupling block pivoted to the inner ends of the arms and to the lugs and provided with bifurcations disposed at right angles to receive the parts, substantially as described.

No. 41,140. Clamp for Floors. (*Agrafe pour planchers.*)

Alexander Zauner, San Antonio, Texas, U. S. A., 9th December, 1892; 6 years,

Claim.—1st. In a floor clamp, the combination, with a reciprocating clamping bar and means for operating the same, said clamping bar being provided at its front edge and lower corner with a transverse rabbet or recess, of a metal plate secured to the under side of the bar, substantially as specified. 2nd. In a floor clamp, the combination, with a reciprocating clamping bar and means for operating the same, said clamping bar being provided at its front edge and lower with a transverse rabbet or recess, of a transverse metal plate let into the under side of the clamping bar and having its front edge extending under the rabbeted portion thereof and bolts for removably securing the plate to the bar, substantially as specified. 3rd. In a floor clamp, the combination, with the clamping bar and a bolt passed through the rear end of the same, of a handle terminating at its lower end in jaws and provided with perforations for loosely receiving the bolt at opposite sides of the bar, means for opening and closing the jaws and sliding them on the bolt, and fulcrum points for engaging the joists, extending inwardly from the jaws below the bolt, substantially as specified. 4th. In a floor clamp, the combination, with the clamping bar and a bolt passed through the rear end of the same, of a handle terminating at its lower end in spring jaws perforated so as to loosely receive the bolt at opposite sides of the bar, means for increasing the tension of the jaws and for opening and closing the same, and fulcrum points located at the inner sides and near the lower ends of the jaws, substantially as specified. 5th. In a floor clamp, the combination, with the clamping bar, the bolt passed therethrough, the handle and the opposite spring jaws bent to embrace the bar and perforated to loosely receive the bolt and terminating below the bolt in fulcrum points, of the lever eccentrically pivoted to one end of the bolt beyond the jaw and having its inner end adapted to bear against said jaw, substantially as specified. 6th. In a floor clamp, the combination, with the clamping bar, the bolt passed through the rear end of the same, the opposite spring jaws perforated to loosely receive the bolt, a handle at the upper end of the jaws, and fulcrum points at the lower ends of the same, of the coiled springs mounted on the bolts between the jaws and bar and the eccentrically pivoted lever having a lower bearing end for operating on the jaws, substantially as specified. 7th. In a floor clamp, the combination, with the clamping bar, the transverse bolt, the opposite spring jaws, means for operating the jaws, and fulcrum points at the lower ends of the jaws, of the compoundly curved anchoring lever pivoted between the jaws, said lever terminating at its rear end in a half round toothed anchoring head, a stop at the front end of the lever, and a staple mounted over the lever and upon the clamping bar, substantially as specified. 8th. In a floor clamp, the combination, with the clamping bar, the pivoting bolt, the handle and bayonet shaped spring jaws perforated to receive the bolt and embracing the clamping jaw, of means for opening and closing the jaw and pointed and threaded set screws adapted to serve as fulcrums, mounted in the lower ends of the jaws, substantially as specified.

No. 41,141. Pump. (*Pompe.*)

Hugh J. Dykes, Peralta, California, U. S. A., 9th December, 1892; 6 years.

Claim.—1st. In a pump, the combination of a series of independent cylinders, having a common receiving chamber and a common discharge chamber with suitable controlling valves, valved pistons operating within the several cylinders and having valve rods, the means for operating the pistons, consisting of the power shaft having the series of differently located cams, the tappets on the piston rods, against which the cams successively operate to raise the rods, the springs for forcing the rods down again when relieved of the cams, and the top springs on the piston rods serving as cushions for limiting the downward stroke of the pistons, substantially as herein described. 2nd. In a pump, the combination of the main casting A, having the partitions dividing its interior space into separate cylinders, the bottom casting B, bolted to the main casting, and forming a receiving chamber common to all the cylinders of the main casting, the valve seat plate and valve strip secured between the bottom casting and the main casting and controlling their communication, the top casting bolted to the upper end of the main casting and forming the common discharge chamber communicating with each of the cylinders of the main casting, the reciprocating pistons with valves operating within the independent cylinders of the main casting, the piston rods of said piston, the power shaft, the cams located at different points about the circumference of said shaft, the tappets on the piston rods, against which the cams successively operate to lift the rods, the springs above the tappets for forcing the rods down again, and the top springs on the piston rods for limiting the downward stroke of the pistons and preventing them from comming in contact with the lower valves, substantially as herein described.

No. 41,142. Lubricating Box for Car Axles. (*Boîte à graisse de chars.*)

Charles Fergie, Westville, Nova Scotia, Canada, 9th December, 1892; 6 years.

Claim.—1st. An axle box having in the upper section a grease chamber E, at the front, and an internal conduit C, leading downwardly to the axle bearing, substantially as set forth, for the purpose described. 2nd. The combination, with the axle of a car, an axle box having a grease chamber E, in the upper section, and a conduit C, leading to the axle, and a stuffing box H, bolted to the underside of said upper section, and covering the bearings of the axle, as set forth.

No. 41,143. Depolarizing Liquid for Galvanic Batteries. (*Dépolarisation des liquides pour piles galvaniques.*)

Oscar Schlesinger, London, Middlesex, England, 9th December, 1892; 6 years.

Claim.—A depolarizing liquid for galvanic battery elements consisting of diluted sulphuric acid, trioxide of chromium, and nitrous acid solution, in or about the proportions stated.

No. 41,144. Grain Meter. (*Compteur à fluide.*)

John Henry, Ardoch, North Dakota, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The combination, with a frame, of a vibratory hopper, valves for opening and closing the hopper, and flexible connections extending from the valves to the frame, and adapted to limit the drop of the valves when the hopper vibrates, substantially as set forth. 2nd. The combination, with a frame and scale beam fulcrumed thereon, of a hopper pivotally supported on the beam to one side of its fulcrum, and valve for automatically opening and closing the hopper as it vibrates, substantially as set forth. 3rd. The combination, with a frame, of a hopper mounted therein to vibrate, valves connected to said hopper, flexible connections between the valves and frame, flanges on said hopper, and flanges on the valves to engage said flanges on the hopper, substantially as set forth. 4th. The combination, with a chute and a frame, of a hopper in the said frame and adapted to vibrate, said hopper being divided into two compartments, a valve pivoted to the hopper for each compartment, flexible connections between said valves and the frame, and a stop on the chute and adapted to retain one of said compartments of the hopper at a time in communication with the spout of the chute, substantially as set forth. 5th. The combination, with a frame of a hopper mounted therein to vibrate, valves connected to said hopper, flexible connections between said valves and frame, said valves being provided with flanges to engage flanges on the hopper, and made somewhat longer than the hopper is wide, substantially as set forth. 6th. The combination, with a chute, of a frame secured thereto, a yoke pivotally supported in said frame, and having a weighted arm, a hopper mounted in the free ends of said yoke and within the frame, a partition dividing said hopper into two compartments, a valve for each compartment, a cord or chain connecting each valve with the frame, and a stop secured to the chute, and adapted to maintain one of said compartments at a time in communication with the outlet of the chute, substantially as set forth.

No. 41,145. Saw-mill Dog. (*Clameau de scierie.*)

Michael Hanna, Clinton, Missouri, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. In a saw-mill dog, the combination with an upright mounted upon the carriage, and having the vertical face groove or channel, of a sliding rack bar moving in said channel and carrying a dog head at its lower end, a dog moving in said lower head, an upper dog head sliding upon said upright and over said rack bar, a dog moving in said upper head, means for moving said upper and lower head toward each other, and means for simultaneously adjusting said dogs, substantially as set forth. 2nd. In a saw-mill dog, the combination with the upright having a longitudinal face groove or channel, of a spring actuated rack bar moving vertically in said channel and carrying a dog head at its lower end, an upper dog head sliding over said upright above the lower dog head, laterally movable dog mounted in both of said heads, and means for simultaneously adjusting the dogs in said heads by a single movement, substantially as set forth. 3rd. In a saw-mill dog, the combination with the upright having a face channel or groove, of a spring actuated rack bar moving in said channel, and provided at its lower end with a head embracing the sides of the upright, a lower dog adjustably mounted in said lower head, an upper head sliding upon said upright over the rack bar, an upper dog mounted in said upper head, a toothed operating lever mounted at one end in said upper head and meshing with the rack bar, and means for simultaneously adjusting the dogs in said heads, substantially as set forth. 4th. In a saw-mill dog, the upright having a face groove or channel, a spring actuated rack bar moving in said channel and carrying a dog head at its lower end, an upper dog head sliding over said upright above the dog, simultaneously adjustable dogs mounted in said heads, and an operating lever pivotally mounted at one end in said upper head, and provided with a partly toothed circular lever head meshing with said rack bar, and circular guide flanges on each side and extending back of the teeth in the head and adapted to straddle the teeth of the rack, substantially as set forth. 5th. In a saw-mill dog, the combination, with the upright having a face channel, of a sliding rack bar moving in said channel and carrying a dog head at its lower end, an adjustable dog sliding within said head and provided with a toothed face, an upper dog head sliding upon said upright, and having a similar toothed face, an upper dog sliding in said upper head, a dog setting shaft passing through said upper and lower heads, and operating pinions loosely mounted upon said shaft to revolve therewith, and meshing with the toothed faces of said dogs to simultaneously adjust the same, substantially as set forth. 6th. In a saw-mill dog, the upright having a longitudinal face groove, a rack bar moving in said groove and carrying a dog head at its lower end, said dog head being provided with a laterally extending bearing lug, a bearing sleeve working in said bearing lug, a lower dog sliding in said lower head and provided with a rear toothed face, an upper dog head sliding upon said upright and having a laterally extending bearing lug, a bearing sleeve working in said bearing lug, an upper dog sliding in said upper head and having a rear toothed face, a bearing plate secured to the rear upper end of said upright, a squared setting shaft journalled at its upper end to said bearing plate and passing through said bearing sleeves, and operating pinions carried by and sliding upon said shaft and meshing with the toothed faces of said dogs to simultaneously adjust the same, substantially as set forth. 7th. In a saw-mill dog, the upright, a sliding rack bar moving in said upright and carrying a dog head at its lower end, a lower toothed dog sliding in said dog head, an upper dog head mounted to slide upon the upright over the lower dog head, an upper toothed dog sliding in said upper head, a notched bearing plate secured to the upper end of said upright, a vertical dog setting shaft journalled at the upper end in said bearing plate and working through said dog heads, operating pinions carried by said setting shaft and meshing with said toothed dogs, and an operating handle pivotally connected to the upper end of said shaft and provided with a locking lug adapted to engage said notched bearing plate, substantially as set forth. 8th. In a saw-mill dog, the upright having a face groove or channel, a spring actuated rack bar moving in said face, groove or channel and carrying a lower dog head, an upper dog head sliding over said upright, laterally adjustable dogs sliding in said dog heads, means for simultaneously adjusting said dogs, and a lock lever pivoted at one end to the top of the upright and adapted to be swung over the top of the spring actuated rack bar to hold the same inoperative, substantially as set forth. 9th. In a saw-mill dog, the upright having the face groove or channel, a lower dog head carried upon the lower end of said rack bar, an upper dog head sliding upon said upright over the lower dog head, an operating lever mounted in said upper dog head and provided with a partially toothed head meshing with and adapted to be ungeared from said rack bar, adjustable dogs moving in said dog heads, means for simultaneously adjusting said dogs, a rod secured in rear of the upright, and a spring actuated collar sliding upon said rod and connected to said rack bar, substantially as set forth. 10th. In a saw-mill dog, the upright having a face channel, rearwardly extending lugs, and a slot between said lugs, a rack bar in said channel and carrying a lower dog head, an upper dog head sliding upon the upright, an incased rod mounted between said rearwardly extending lugs, a sliding collar mounted upon said rod and provided with a securing arm projecting through said slot and connected with said rack bar, a spring mounted upon said rod

between the lower lug and said collar, and a buffer spring located at the upper end of said rod, substantially as set forth.

No. 44,146. Oil Can. (*Bidon à huile.*)

Steward Dunlap, Ashley, Pennsylvania, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The herein described oil can, consisting of an oil receptacle, a spout, a nozzle, a detachable nut between the spout and nozzle, said nut being formed with a valve seat in its lower end, a valve fitting said seat, a U-shaped valve rod extending through the spout into the body of the can and upward through a stuffing box in the top thereof, a filling tube at the top of the can and a combined stopper and vent fitting said tube, substantially as described. 2nd. The combination, with an oil can, of a vent consisting of a substantially cylindrical casing, the lower end of the casing being closed excepting a small perforation, and the upper end being provided with a similar perforation and a tube extending therefrom downwardly nearly to the bottom of the casing, substantially as described. 3rd. The combination, with an oil can having a filling tube threaded at its outer end, of a combined stopper and vent consisting of a cylindrical casing having an attached ring J, threaded to fit the filling tube, said casing having its lower end closed except a small perforation, and its upper end provided with a similar perforation and a small tube extending from said latter perforation nearly to the bottom of the casing, substantially as described.

No. 41,147. Combination Tool for Fences.

(*Outil à combinaison pour clôtures.*)

John W. Gallant, Delta, Colorado, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. In a tool of the character set forth, the combination of the handles having horizontally disposed discs with notches therein, and heads integrally formed therewith and extending upward at an angle therefrom, and a gripping lever mounted between said heads and pivotally connected to one of the same, substantially as described. 2nd. In a tool of the character set forth, the combination of heads and a gripping lever movably mounted between the same and projecting rearwardly therefrom, substantially as described. 3rd. In a tool of the character set forth, the combination of heads having an opening extending therethrough, and a gripping lever mounted between said heads in line with said opening, substantially as described. 4th. In a tool of the character set forth, the combination of reins or handles having horizontally disposed discs integrally formed therewith and provided with notches, and heads rising vertically from said discs with spurs or points thereon and an opening extending therethrough, a gripping lever mounted between said heads and projecting rearwardly therefrom, teeth secured in the upper portions of said heads, and means for securing said teeth in position, substantially as described.

No. 41,148. Electrotype and Stereotype Blocks.

(*Bloc électrotypes et stéréotypes.*)

Jacob Calvin Wolfe, New York, State of New York, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The combination, with an electrotype shell, of a backing of box like form secured to the shell, substantially as shown and described. 2nd. The combination, with electrotype or stereotype shells, of a metal box like backing having vents produced in one face for the escape of the surplus cementing material, by which the shell is secured to the backing, substantially as shown and described. 3rd. The herein described method of bringing an electrotype or stereotype shell, its backing and an interposed cementing material to the standard height of type, which consists in subjecting the same to pressure while the cementing material is in a fluid state, substantially as set forth. 4th. The method herein described of backing stereotype plates, consisting in heating the shell, applying metallic cement to the upper face of the shell, then heating the backing and placing it upon the shell, and finally subjecting the whole to pressure, as specified. 5th. As an improved article of manufacture, a block or base consisting of a body shell having interior lattice work, substantially as shown and described. 6th. As an improved article of manufacture, a block or base consisting of a body shell having interior lattice work, and a top plate detachably attached thereto, adapted for the reception of electrotype and stereotype shells, as and for the purpose specified. 7th. A block or base for the purposes described, consisting of a body shell, removable, interior lattice work supporting strips, and a removable top plate, as and for the purpose specified. 8th. A block or base for the purpose described, consisting of a body shell open at the top and bottom, interior, removable lattice work supporting strips, a top plate covering the upper portion of the body shell and lattice strips, and capable of receiving an electrotype or stereotype shell, and connections between the top plate and the structure covered thereby, substantially as shown and described. 9th. A mould comprising removable marginal strips, body or block sections within the marginal strips, and wedge sections inserted between the body or block sections, substantially as described. 10th. A mould comprising removable marginal strips, tapering body or block sections within the marginal strips, wedge sections inserted between the block sections, and core plates intervening the block sections and the block sections and marginal strips, substantially as described. 11th. As an improved article of manufacture, a knock down mould, substantially as shown and described. 12th. As an improved article of manufacture, a knock down mould, core plates and means, substantially as described, for holding the score plates in the mould. 13th. A mould comprising removable and adjustable strips, tapering body or block sections, wedge sections inserted between the body sections at their base, core plates intervening the upper surfaces of the body sections, and said sections and the marginal strips, and spacing plates engaging with the body sections and core plates, substantially as described. 14th. A backing or block for the purpose described, constructed of a single casting and comprising a base, sides and ends containing openings, and webs connecting the sides or ends, substantially as specified. 15th. A backing or block for the purpose described, constructed of a single casting and comprising a base, sides and ends containing openings, the webs connecting the sides or ends also containing openings, substantially as specified. 16th. A mould for the electrotype and stereotype blocks or other articles, consisting of adjustable marginal strips, blocks having their side and end surfaces tapered upward in the direction of their centres, removable cores located between the blocks and the blocks and marginal strips and pins removably fitted in sockets in the upper faces of the blocks, substantially as shown and described. 17th. A mould for the purpose described, consisting of adjustable marginal strips provided with locking devices, body blocks having their side and end surfaces tapered upward in the direction of their centres, removable cores located between the blocks and the blocks and marginal strips, and pins removably fitted in sockets in the upper faces of the body blocks, substantially as and for the purpose specified. 18th. As an improved article of manufacture, a block for the purpose described, consisting of a hollow backing provided with interior webs, and a shell secured to the backing while in the process of casting, as and for the purpose specified. 19th. An electrotype or stereotype block, consisting of a hollow backing open at the bottom and provided with a series of side openings, interior webs integral with the shell, also provided with openings, and shell secured to the upper face of the backing, substantially as described. 20th. That improvement in the process of making electrotype or stereotype blocks, which consists in first casting a hollow back, and while said back is still fluid pressing an electrotype or stereotype shell thereon, substantially as specified. 21st. In a mould for casting electrotype or stereotype shells, the core plates provided with revoluble pins, substantially as and for the purpose specified.

No. 41,149. Car Coupler. (*Attelage de chars.*)

Frank A. Fox, San Francisco, California, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. In a car coupler of the type hereinmentioned a zigzag shaped bolt, adapted to move in an oblique direction in raising in combination with tail piece D, having the bevelled or inclined face *e*, substantially as described. 2nd. In a car coupler a flat bolt G, having one or more inclined faces or shoulders F, adapted to move up and down in a recess in the coupler head having corresponding inclined planes in combination with a tail piece D, having an inclined face *f* at its ends, substantially as described.

No. 41,150. Phonographic Apparatus.

(*Appareil phonographique.*)

Louis Glass, San Francisco, California, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. In a phonograph, the combination with the recording and reproducing mechanism, of the tension spring adapted to overcome undue vibration so as to create perfect recording and reproduction of the sound undulation, as and for the purpose set forth. 2nd. In a phonograph, the combination with the recording and reproducing mechanism, of the pressure spring or cushion, and a tension regulating device for said spring or cushion, for the purpose of overcoming undue vibration so as to create perfect recording and reproduction of the sound undulation, as and for the purpose set forth. 3rd. In a phonograph, the combination with the vibrating plate, of an adjustable tension spring adapted to bear against said plate, for the purpose of preventing undue vibration, as and for the purpose set forth. 4th. In a phonograph, the combination with the recording and reproducing mechanism, of an adjustable tension spring cushion adapted to overcome undue vibration for the purpose of creating a perfect recording or reproduction of tone undulations, as and for the purpose set forth. 5th. In a phonograph, the combination with the recording mechanism, of the tension spring adapted to overcome undue vibration so as to create perfect recording of the sound undulation, as and for the purpose set forth. 6th. In a phonograph, the combination with the reproducing mechanism, of the pressure spring or cushion, and a tension regulating device for said spring or cushion, for the purpose of overcoming undue vibration so as to create perfect reproduction of the sound and undulation, as and for the purpose set forth.

No. 41,151. Machine for Making Envelopes.

(*Machine pour faire des enveloppes.*)

Louis Peter Bouvier, Toronto, and William Harty, Kingston, both in Ontario, Canada, 9th December, 1892; 6 years.

Claim.—1st. In an envelope machine, the combination with the double headed plunger and picker, and means for operating said

grip, substantially as described. 2nd. In combination with the picker F, and double headed plunger, with means for operating them, the carrier grip pivoted in the forked end of the rod O, the bar Q, connected to the said rod and moving on the guide bar U, the wheel T, and belts R and S, connecting said wheel with the bar Q, substantially as described. 3rd. In combination with the picker F, and double headed plunger A, with means for opearating them, the carrier grip pivoted in the forked end of the rod O, and means for reciprocating said rod, consisting of the bar Q, connected with its rear end moving on the guide bar U, the wheel T, secured to the shaft W, belts R, S, connecting said wheel with the bar Q, the quadrant *x*, also secured to the shaft W, the quadrant Y, meshing therewith, and the rod 2, eccentric 3, and shaft 4, substantially as and for the purpose set forth. 4th. In combination with the carrier grip N, pivoted in the forked end of rod O, the bar O formed on the end of said rod and moving on the guide bar U, the wheel T, belts R and S, connecting the wheel with the bar Q, and the bars *b*, with means for operating them, said means consisting of arms *f*, depending from a rod *g*, and having their lower ends pivotally connected to said bars, an arm *i*, carried by the rod *g*, a cam on the main shaft and connections between the said arm and main shaft, substantially as described. 5th. The carrier grip N, pivoted in the forked end of the rod O, means for reciprocating the rod, the notches n^1, n^{11}, formed in the grip in the rear of the pivot point, and the plunger P, provided with spring *p*, substantially as and for the purpose set forth.

No. 41,152. Weighing Scale, Recorder and Register.

(*Balance à registre.*)

Robert McFarlane and Waldo E. Holmes, both of Minneapolis, Minnesota, U.S.A., 9th December, 1892; 6 years.

Claim.—1st. The combination, with a scale beam and means for applying the weight thereto, of a beam poise slidable on said beam, a registering wheel independently arranged with respect to said parts, and means whereby on the movement of the sliding weight said wheel is operated, substantially as described. 2nd. The combination, with the scale beam and the frame wherein the same is pivoted, of a beam poise, a registering device, a cord connected with said poise and with said registering device, whereby on the moving of said weight said device is operated, said device being immovable with respect to the beam, substantially as described. 3rd. The combination, with a pivoted scale beam, of sheave arranged at the ends thereof, a beam poise, a cord, belt or wire arranged on said sheaves or pulleys, said cord connected with said sliding weight, a gear in connection with the innermost pulley, a rack engaging the same, and a registering device to be operated by the movement of said rack, substantially as described. 4th. The combination, with the pivoted scale beam, and means for applying weight thereto, of sheaves arranged on said beam, an endless cord passing over and between the same, a beam poise arranged upon the beam and engaging said cord, wire or belt, a gear arranged in connection with the innermost sheave, a rack meshing therewith to be operated thereby, a registering wheel, a gear wheel to move therewith, said rack engaging the same, figures arranged on said registering wheel and means for taking impressions therefrom, substantially as described. 5th. The combination of the scale beam and the counterpoise thereof, with detachable counterpoise weights, a frame or bar whereon the same are stored when not in use on the counterpoise, a registering wheel, a slidable head to engage the end of the row of stored weights, and means in connection therewith for operating the registering wheel, substantially as described. 6th. The combination, with the beam and the counterpoise swung from the end thereof, of detachable weights adapted to be placed thereon, a bar or frame for storing said weights when not so in use, a rack having an end adapted to engage the end of the stored row of said weights, a registering wheel and a gear arranged in connection therewith to engage said rack, whereby on the movement of the rack said registering wheel is operated, means being provided in connection with said wheel for permanently indicating the weights registered thereby, substantially as described. 7th. The combination, with the beam pivotally supported in a suitable frame, of a counterpoise plate and rod therefor, detachable counterpoise weights, a stationary bar or frame therefor, a movable rack having an end to engage the same when on said frame, a registering wheel supported upon a suitable shaft, a gear wheel arranged in connection therewith and meshing with said movable rack, said rack provided with the end 54, and the finger lug 55, substantially as and for the purpose specified. 8th. The combination with the pivoted scale beam and the beam poise slidable thereon, with a counterpoise hung from the end of the beam, separable counterpoise weights therefor, a fixed frame adapted to receive said weights when not in use, a rack longitudinally slidable with respect to the row of weights thus stored, the head or end of said rack adapted to engage the foremost counterpoise weight in the frame, a registering wheel having figures indicating the units and adapted to be operated by the movement of said rack, sheaves or pulleys arranged at the ends of said beam, a cord belt or wire arranged upon the same and fixed on said beam poise and rack, a gear interposed between the same and the innermost sheave or pulley, a second registering wheel arranged to be operated by the movement of said second rack, said second registering wheel provided with figures to indicate fractions of a unit, and means for simultaneously printing from said wheels to record the total weight, substantially as described. 9th. The combination with the beam and the counterpoise hung therefrom, of separable counterpoise weights, a stationary frame or bar whereon the same are adapted to be stored, a rack having a head or end to engage the end of the row of weights, a registering wheel adapted to be operated by the movement of said racks, sheaves on the beam, a cord, belt or wire passing over and between the same, the beam poise arranged on the bar and fixed to the cord, a second registering wheel and a rack adapted to operate the same and to be operated by the movement of said slidable weight communicated through said cord, belt or wire, substantially as described. 10th. The combination with the pivoted scale beam and the counterpoise arranged thereon, of the beam poise provided on the beam, an endless cord, belt or wire arranged in connection with said weight, a rack to be operated by the cord, an interposed gear, a shaft, a registering wheel yieldingly fixed to the same, a gear provided on said shaft and meshing with the lower part of said rack, means for holding said rack thereon, a stationary frame or rod, the counterpoise weights to be stored thereon, another rack slidably arranged with respect to the same, a second registering wheel arranged on a sleeve loosely provided on said shaft, and having a gear to engage the second rack, said second wheel yieldingly fixed on said sleeve, and a printing plate movably arranged with respect to said wheels, and means for forcing the same against the peripheries thereof, substantially as described. 11th. The combination with the beam 2, of the frame whereon the same is pivoted, the sheaves 22 and 23 arranged on opposite ends of the beams, the endless cord 24 passing over the same, the beam poise 13 arranged on the bar and whereto one side of the cord is fixed, the gear wheel 26, to move therewith, an idler gear 27 meshing therewith, the rack bar 29 engaging the same, the gear 30 arranged on the shaft journalled in standards, the lugged arm 31 guiding said bar 29, and the registering wheel to be operated by the movement of the rack 29, substantially as described. 12th. The combination with the pivoted beam and the registering wheels, the beam poise on said beam, the sliding rack 48 to engage the stored counterpoise weights, the printing plate 35, provided on the shaft 26, the pivoted lever 38, the treadle 40 linked thereto, and a spring for raising the same, substantially as described. 13th. The combination with the standards, of the shaft, with a registering wheel arranged thereon, an arm clamped thereon, springs arranged on the sides of said arms, and a pin on said wheel or disc and engaged by said spring, substantially as described. 14th. The combination of the beam 2, and the beam poise thereof with grooved sheaves 22 and 23 arranged thereon, and the latter provided with a spiral groove 45, the endless cord, wire or belt wound upon said sheves, and a registering device to be operated thereby, substantially as described.

No. 41,153. Barbed Wire. (*Fil de fer barbelé.*)

John Drennan Curtis, Worcester, Massachusetts, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. The combination with a strand of wire, of a four pointed wire bark, made of wire non-circular in cross section, having divided ends which form the barb, and a solid centre portion which is spirally wrapped around the wire strand, substantially as and for the purpose hereinbefore set forth. 2nd. The combination with a strand of wire, of a four pointed wire barb made of one piece of wire, having divided ends which form the barb points, and solid centre portion which is spirally wrapped around the wire strand, substantially as set forth.

No. 41,154. Method of Attaching Vehicle Springs.

(*Methode d'assujetir les ressorts de voitures.*)

Malcolm Elwin Robb, Knowlton, Quebec, Canada, 10th December, 1892; 6 years.

Claim.—1st. The combination with a carriage or vehicle spring of the elongated hook C, formed either by part of the spring, bent over, or by the addition of a metal piece B, and the swiveled bearing piece or block D, retained in position by ears or lugs G or M, and the bearing piece or coupling R, rigidly secured to one end of a spring, substantially as and for the purpose hereinbefore set forth.

No. 41,155. Cleaner for Mucilage Brushes.

(*Nettoyeur de pinceau à mucilage.*)

Frederick Theophilus Aikins, Toronto, Ontario, Canada, 10th December, 1892; 6 years.

Claim.—1st. A strip of metal B, detachably connected to the neck of a bottle A, and having fingers C, extending from it, jaws D, being formed on the ends of the said fingers, which fingers are set so that the tension of their spring shall cause the jaws to press elastically towards each other, substantially as and for the purpose specified. 2nd. A strip of metal B, detachably connected to the neck of a bottle A, and having fingers C, extending from it, jaws D, being formed on the ends of said fingers, which fingers are set so as to leave a space between them and cause the jaws to press elastically towards each other, substantially as and for the purpose specified. 3rd. A strip of metal B, detachably connected to the neck of a bottle A, and having fingers C, extending from it, jaws D, being formed on the ends of the said fingers, the strip B, at its connection with the finger C, being set inwardly so as to bring the jaws B, squarely opposite to each other, substantially as and for the purpose specified.

No. 41,156. Disconnector for Overhead Conductors.

(*Désembrayeur pour les conducteurs suspendus.*)

Andrew Langstaff Johnston, Richmond, Virginia, U. S. A., 10th December, 1892 ; 6 years.

Claim.—1st. In an automatic disconnector for overhead conductors or other wires, the combination of the body thereof provided with an insulated cap having jaws, of the switch bars mounted on the body of the disconnector having heads at their upper ends, said heads being adapted to be thrown out of engagement when the wires are slackened as stated. 2nd. In an automatic disconnector for overhead conductors or other wires, the combination, with the body having an insulated cap with the jaws on either side, of the switch bars pivotally mounted on the body, and provided at their upper ends with the hatchet shaped heads, which are automatically thrown out of engagement when the wires are slackened, as specified. 3rd. In an automatic disconnector for overhead conductors or other wires, the combination, with the body thereof provided with an insulated cap having jaws, and lever switch bars mounted upon the body so as to be thrown into engagement with the jaws, of the hollow sections having springs secured thereto at one end, and the line wires connected to the other ends of the said springs, and knock bars also connected to the said springs, and adapted to be thrown into engagement with the lever switches when the wires are slackened, as described. 4th. In an automatic disconnector for overhead and other electrical conductors, the combination of a hanger, substantially as described, provided with circuit breakers having interlocking devices arranged to hold the levers in closed adjustment, as set forth. 5th. The combination, in an automatic electrical disconnector for overhead and other conductors, of a hanger or suitable support provided with a pair of pivoted levers having hatchet shaped heads, and jaws adapted to receive the heads of interlocking beads or projections, and recesses adapted to receive the beads and hold the heads in place, for the purposes described.

No. 41,157. Rest for the Arms and Writs.

(*Appui-bras et poignet.*)

Rebecca Kirk, Stratford, Ontario, Canada, 10th December, 1892; 6 years.

Claim.—1st. An arm rest comprising a guide rail, a carriage mounted upon said guide rail consisting of a frame, wheels mounted in said frame and adapted to run upon said guide rail, and a top to said frame for the arm to rest upon, substantially as and for the purpose set forth. 2nd. In an arm rest, the combination of a guide rail, a carriage mounted upon said guide rail, said carriage comprising a frame work, two wheels mounted in said frame work and adapted to run upon said guide rail, a roller mounted in the top of said frame work to support and allow the movement of the arm, substantially as and for the purpose described. 3rd. In an arm rest, the combination of a guide rail, a carriage mounted upon said guide rail, said carriage comprising a frame work, two wheels mounted in said frame work and adapted to run upon said guide rail, a roller mounted in the top of said frame work to support and allow of the movement of the arm, and a stop located at either end of said roller to prevent the arm moving off said roller, substantially as and for the purpose set forth. 4th. In an arm rest, the combination of a guide rail, provided with two parallel grooves, a tongue between said grooves, a carriage comprising a frame work, grooved wheels mounted in said frame work, the flanges of which travel in the grooves of the guide rail, a top to said frame, a roller mounted in said top adapted to support the arm, and a pin located at either end of said roller to prevent the arm slipping off said roller, substantially as and for the purpose described.

No. 41,158. Filtering Apparatus for Molten Glass.

(*Appareil à filtrer le verre fondu.*)

Moritz Epstein, Berlin, German Empire, 10th December, 1892; 6 years.

Claim.—1st. An improved device for refining molten glass, consisting of a filtering tube *a*, divided into two compartments, the lower of which is fitted with clay or porcelaine balls so that the glass after having passed the openings *f* must first pass through the clay or porcelaine balls before it can pass through the orifice *g* into the upper compartment, substantially as described. 2nd. The improved subdivided smelting vessel *b*, with partition *p* and serpentine ways *c*, substantially as and for the purpose set forth.

No. 41,159. Machinery for Compressing and Accumulating Air and Water. (*Machine pour compresser et accumuler l'air et l'eau.*)

George Goodlet, East Brunswick, Victoria, Australia, 10th December, 1892 ; 6 years.

Claim.—1st. The combination of parts forming the machinery, substantially as described and shown, by means of which fluids may be compressed within an accumulator by aid of a power that need only be sufficient to overcome the coefficient of friction of the moving machinery and of the compressed fluids. 2nd. The combination of the accumulator D, displacing cylinder A, trunk piston A^1, rod A^2, compensating valve F, spring F^2, rod F^3, check valve G^6 and casing G, with the compensaing piston B^2, in cylinder B, furnished with a U-leather and with the compensating pipe D^2 that communicates the power stored in accumulators to below the compensating piston, substantially as herein described and shown. 3rd. The combination, with an accumulator or reservoir, within which is a displacing cylinder and compensating valve having below it an inlet check valve, of a pipe springing from near top of accumulator and leading to under the piston in compensating cylinder, the rod of which operates the aforesaid compensating and check valve, as and for the purposes described and substantially as shown. 4th. The combination, with a vertical displacing cylinder arranged within an accumulator, of a compensating cylinder, the piston of which works within a U-leather, the piston rods of both being in a vertical line with each other and with a pipe connecting the accumulator and compensating cylinder, substantially as described and shown. 5th. The combination of the compensating cylinder having inlet and outlet valves at its top end with a vacuum chamber, as and for purposes described. 6th. The combination of the check valve G^6, furnished with friction clutch H, H, with the compensating piston rod F^3, and inlet valve box G, either with or without the supplementary valve J^4, as described and shown.

No. 41,160. Spring Motor. (*Moteur à ressort.*)

The Universal Sewing Machine Motor Attachment Company, assignee of Eli Samuel Reed, all of Chattanoga, Tennessee, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. In a spring motor, the combination, of a spring driven train of frictional gearing, which includes a drum having a frictional wheel connected thereto, and said drum containing the drive spring, of another frictional wheel having an internal part thereto, serving as a journal for the drum, together with a short shaft carrying a wheel, which is belted to the driven machine, said shaft being actuated by the aforesaid train of frictional gearing. 2nd. In a spring motor, the combination with a spring driven train of frictional gearing, that includes a drum having a frictional wheel connected thereto, and said drum containing the drive spring, of another friction wheel having an integral tube, on which the drum revolves as a journal, a shaft carrying a wheel belted to the driven machine and actuated by the aforesaid train of gearing and winding devices for rotating the friction wheel and its integral tube. 3rd. In a spring motor, the combination of the drum having a frictional wheel connected thereto, the spring within the drum, the friction wheel and its integral part on which the drum revolves, the shaft above the drum, the bevel wheel carried thereby, the multiplying gearing connecting the friction wheel, on the drum with the said shaft of the bevel gear and horizontal shaft carrying the bevel pinion acted on by the bevel wheel, and carrying also a pulley belted to the driven machine. 4th. In a spring motor, the combination of the drum, the spring driven train of gearing, including a friction wheel connected to the drum, a frictional disc or wheel having an integral tube on which the drum revolves and the friction dogs acting on said disc. 5th. In a spring motor, the combination with the spring driven train of frictional gearing which includes a friction wheel connected to the drum containing a drive spring, of a frictional disc having an integral part thereof serving as a journal for the drum, the dogs acting to clutch said disc and devices for rotating the same for the purpose of winding the spring. 6th. In a spring motor, the combination with a spring driven train of frictional gearing, including a frictional wheel connected to the drum which contains the drive spring, of a friction wheel or disc having an integral part serving as a journal for the drum, friction dogs acting in connection with the periphery of said friction wheel, a bevel gear mounted below the wheel and loosely connected thereto, so as to rotate therewith, and winding devices for actuating said bevel gear. 7th. In a spring motor, the combination with a spring driven train of frictional gearing, including a frictional wheel connected to the drum containing the drive spring, of a frictional wheel having an integral part thereof serving as a journal for the drum, the friction spring provided dogs, acting to clutch the periphery of said friction wheel, the horizontal shaft geared to the friction wheel, and the winding lever provided with clutching devices, whereby the said shaft is rotated for the purpose of winding the drive spring. 8th. In a spring motor, the combination, with the spring driven train of frictional gearing, of the drum containing the drive spring, a friction wheel or disc having an integral part on which said drum revolves, the dogs acting in connection with the periphery of said friction wheel, the bevel gear having a projection on its upper side engaging a recess in the said friction wheel, the horizontal shaft carrying a bevel gear engaging the aforesaid bevel gear, and the winding lever containing a disc which is connected to said shaft, together with one or more dogs operating in connection with said disc to cause the parts to act as a clutch. 9th. In a spring motor, the combination, with a spring driven train of frictional gearing, and a drum containing the drive spring, of the frictional wheel having an integral part on which the drum revolves, the dogs P, P, having springs *p*, *p*, and acting in connection with said friction wheel, the gear O, having a projection *o*, on the upper side thereof adapted to enter the recess *h*, in the friction wheel and the bottom shaft *a*, beneath the gear, the shaft R having a gear R^1 engaging the gear O, and the winding lever Q carrying the disc Q^1, together with the dog Q^2, substantially as described. 10th. In a spring motor, the combination of the drum containing a drive spring, the train of multiplying frictional gearing for

actuating the shaft which carries the pulley belted to the driven machine, the frictional wheel or disc having an integral part on which the drum revolves as a journal, the dogs for clutching said disc, and a winding lever provided with a clutch mechanism for operating a shaft which is connected to said frictional wheel, so that the spring may be readily wound by the vibrations of the said lever. 11th. In a spring motor, a frame for the mechanical parts consisting essentially of the uprights B, B, connected by transverse pieces, the uprights C, C, likewise connected by transverse pieces, the bottom bar C^3, having an integral transverse bar C^4 connected to the uprights C, C, and having an end c adjustably connected to the bottom connection between the uprights B, B, the lower skeleton frame E connected to the bottom parts, and the skeleton upright D adjustably connected at its lower end to one end of the bottom part C^3, all substantially as described. 12th. In a spring motor, the combination of the drum having a frictional wheel connected thereto, the spring within the drum, the winding frictional wheel having an integral part on which the drum revolves, together with the clutching dogs, the shaft upon said drum carrying a large friction wheel, the multiplying gearing connecting the frictional wheel on the drum with the shaft above, and the horizontal shaft carrying a bevel pinion engaging the bevel wheel and likewise a pulley belted to the driven machine, together with a suitable supporting frame for the several mechanical parts, substantially as described. 13th. In a spring motor, the combination of the drum having a frictional wheel connected thereto, the spring within the drum, the winding frictional wheel with its integral tube on which the drum revolves, the short shaft above the drum, the train of multiplying frictional gearing connecting the friction wheel on the drum with the said shaft, together with the large bevel wheel on the said shaft said bevel wheel being so arranged that it may be readily reversed to act in combination, either above or below with a bevel pinion on the horizontal shaft carrying a pulley belted to the driven machine. 14th. In a spring motor, the combination of a drum, a frictional wheel connected to said drum, a spring within the drum, the winding frictional wheel having an integral tube on which the drum revolves, a shaft parallel to said tube and carrying a friction pinion engaging the friction wheel on the drum and also carrying the large friction wheel, the short vertical shaft above the drum carrying the friction pinion engaging the aforesaid large friction wheel and also carrying a bevel friction wheel and a horizontal shaft having thereon the pulley belted to the driven machine and the beveled friction pinion engaged by the beveled friction wheel. 15th. In a spring motor, the combination of a drum having a frictional wheel connected thereto, a spring within the drum, a winding frictional wheel having an integral tube on which the drum revolves, a shaft above the drum carrying a bevel friction wheel and a small friction pinion, the latter being adjustable on the shaft and the shaft itself being reversible, a parallel shaft carrying an adjustable friction pinion engaging the friction wheel on the drum and also an adjustable friction wheel engaging the friction pinion on the short shaft, and the horizontal shaft carrying an adjustable bevel friction pinion together with a pulley. 16th. The combination of a drum having a grooved friction wheel, a winding frictional wheel having an integral tube on which the drum revolves, the short shaft above the drum carrying an adjustable friction pinion and a large bevel wheel, a parallel shaft having a screw threaded part and carrying thereon an adjustable friction pinion, together with a nut, a large peripherally grooved friction wheel likewise adjustable on said shaft and a horizontal shaft carrying a peripherally grooved pulley and having one end screw threaded whereon is carried a bevel friction wheel adjustable between the nuts with its bevel surface in contact with the aforesaid friction wheel. 17th. The combination of the drum having a connected friction wheel, a spring within the drum, a winding friction wheel or disc having an integral tube on which the drum revolves, a multiplying train of friction back gearing, the horizontal shaft carrying the pulley belted to the driven machine and actuated by said back gearing together with the frame supporting said mechanical parts and adjustable at different points, as described. 18th. The combination of the drum F, containing spring G, and having friction wheel I, the winding disc H^1, having the integral part H, on which the drum revolves, the vertical shaft J, having the screw plug bearing b^1, at its upper end the short shaft L, above the drum, and having the screw plug bearing l^1, at its upper end, and the train of multiplying friction gearing carried by said shaft, substantially as described. 19th. The combination of a drum, having a friction wheel, a spring within the drum, a winding friction wheel or disc, having an integral tube on which the drum revolves, the shaft above the drum carrying friction gearing, the parallel shaft carrying friction gearing and the horizontal shaft carrying friction gearing, all arranged substantially as described, so that the spring may actuate the train of friction gearing for the purpose of driving a machine belted to the pulley on the horizontal shaft. 20th. The combination of the drum F, having frictional wheel I, the spring G, within the drum, the winding frictional wheel H^1, having an integral part H, on which the drum revolves, the shaft J, carrying friction pinion b, engaging wheel I, and also carrying friction wheel K, the shaft L, carrying friction pinion d, engaging wheel K, and also bevelled friction wheel M, and the horizontal shaft f, carrying bevel friction pinion N, and pulley k, substantially as described. 21st. In a spring motor, the combination with the spring driven train of friction gearing, which includes a drum having a connected frictional gear wheel and containing the drive spring, of a frictional winding wheel or disc having an integral part thereof serving as a journal for the drum, a sleeve surrounding said journal within the drum and keyed thereto, one end of the spring being attached to said sleeve and the other to the drum, and the horizontal shaft carrying a pulley which is belted to the driven machine, which shaft is actuated by the aforesaid train of gearing. 22nd. In a spring motor, the combination of the drum having a frictional gear wheel connected thereto, the spring within the drum, the frictional winding disc or wheel, having an integral tube on which the drum revolves, the sleeve or thimble surrounding said tube within the drum and connected to the tube, to which sleeve one end of the spring is attached, the shaft above said drum carrying the bevel friction wheel, the horizontal shaft having a bevel pinion actuated by said wheel, and the multiplying gearing connecting the frictional wheel of the drum with the short shaft for the purpose of actuating the latter. 23rd. The combination in a spring motor, of the drum having a frictional gear wheel connected thereto, the spring within the drum, the frictional winding disc having an integral tube on which the drum revolves, the horizontal shaft carrying a pulley belted to the driven machine, a sleeve on the tube within the drum to which sleeve one end of the spring is attached, the short shaft carrying its friction gear, and the parallel shaft carrying a friction pinion that engages the friction wheel on the drum and a friction gear wheel that engages a friction pinion on the short shaft. 24th. The combination of the drum and its connected friction gear wheel, the spring within the drum, the frictional winding disc having an integral part on which the drum revolves as a journal, a sleeve surrounding said journal, to which sleeve one end of the spring is connected, the horizontal drive shaft, the frictional gearing connecting the friction wheel on the drum with the said horizontal shaft, and the dogs for clutching the frictional winding disc, the winding lever provided with clutch mechanism, and the shaft geared to the frictional winding disc, all designed to operate in combination, substantially as described. 25th. The combination of the drum, the frictional gear wheel connected thereto, the spring within the drum, the frictional winding disc having an integral tube on which the drum revolves, the horizontal shaft carrying a pulley belted to the driven machine, the train of multiplying friction gears connecting the friction wheel on the drum with the said pulley shaft, the dogs acting to engage the frictional winding disc, the bevelled gear loosely connected to said disc, the horizontal shaft having a bevel gear engaging the aforesaid gear, the winding lever provided with the disc Q^1, which is provided with the opening to receive the end of the aforesaid shaft and a dog Q^2, operating in connection with the periphery of said disc, all substantially as described. 26th. In a spring motor, the combination with the pulley belted to the driven machine, of a brake lever having a shoe applied to the periphery of said pulley, a spring acting to press said shoe against said periphery, a right angled lever having one arm operating against the end of the brake lever to remove the shoe from the pulley, a connection between the end of the other arm with a lever fulcrumed on the machine frame, and a second lever carrying a plate or pad and having its other end operated in connection with the lever just mentioned, substantially as described. 27th. The combination with the pulley k, of the spring actuated brake lever S, having a shoe S^1, the right angled lever T, having one arm acting upon the end of the lever S, and the levers U and V, said lever V being connected by the connection r^1, with the right angled lever T. 28th. The combination with the pulley k, of the brake lever S, fulcrumed at s^2, having shoe S^1, and provided with spring s^1, the right angled lever T fulcrumed at t, the lever V fulcrumed at v, and connected by a connection r^1, with the end of the right angled lever T, and the lever U, fulcrumed at u, and having a knee or foot pad u^1, all substantially as described.

No. 41,161. Paper Rack for Telephones.

(*Porte papier pour téléphones.*)

John F. Bullock, St. John, New Brunswick, Canada, 10th December, 1892 ; 6 years.

Claim.—1st. In combination with a telephone, a paper rack, consisting of side rods A, having heads and threaded, as described, the clamps B, having the brackets D, and arms K and I, the clamps B^1, having the lugs x, and the notched openings p, the cutter C, attached to the clamps B, by lugs, as described, and having the pin o, the hanger F, the roller E, and the nuts H, substantially as and for the purposes described. 2nd. In combination with a telephone desk, a rack consisting of side rods A, clamps B, having brackets D, and arms K and I, clamps B^1, having lug x, cutter C, hanger F, roller G, and nuts H, substantially as described. 3rd. In combination with a bracket shelf, a rack consisting of side rods A, clamps B, having brackets D and arms K and I, clamps B^1, having lugs x, cutter C, hanger F, roller G, and nuts H, substantially as and for the purposes described. 4th. In a rack, for holding paper, to be used in connection with a telephone, the rods A, in combination with the clamps B and B^1, the cutter C, the hanger F, the roller E, and the nuts H, substantially as and for the purposes described. 5th. In a telephone paper rack, the cutter C, having the pin o, substantially as and for the purposes described. 6th. In a telephone paper rack, the arms I, substantially as and for the purposes described. 7th. In a telephone paper rack, the pin o, in combination with a cutter of any form, substantially as and for the purposes described. 8th. In a cutter for a paper rack, the pin o,

substantially as and for the purposes described. 9th. The combination of the rods A, clamps B, having brackets D, and arms K and I, clamps B^1, having lugs x, cutter C, having pin o, hanger F, roller G, nuts H, with a double roll of paper and carbon paper, substantially as and for the purposes described. 10th. The combination of the rods A, clamps B, having brackets D, and arms K and I, clamps B^1, having lugs x, cutter C, having pin o, hanger F, roller G, nuts H, substantially as and for the purposes described. 11th. The combination of the rods A, clamps B, having brackets D, and arms K and I, clamps B^1, having lugs x, cutter C, having pin o, hanger F, roller G, nut H, substantially as and for the purposes described.

No. 41,162. Brake for Cars. (*Frein de chars.*)

John G. Zimmermann, John J. Zimmermann and Rivington A. Stiles, all of West Troy, New York, U. S. A., 10th December, 1892; 6 years.

Claim.—1st. In a car brake, the combination of brake beams provided with brake shoes, a rocker shaft provided with a pair of eccentries, whose centres are arranged at opposite sides of said shaft, said eccentrics being connected to said brake beams, so as to move the latter relatively in opposite directions, and mechanism whereby a rocking motion can be imparted to said shaft from opposite ends of a car, as and for the purpose herein specified. 2nd. In a car brake, the combination of brake beams provided with brake shoes, a rocker shaft, provided with a pair of eccentrics, whose centres are arranged at opposite sides of said shaft, horizontal levers arranged adjacently to said brake beams and connected to said eccentrics and brake beams, so as to move the latter relatively in opposite directions, and mechanism whereby a rocking motion can be imparted to said shaft from opposite ends of the car, as and for the purpose specified.

No. 41,163. Toy. (*Jouet.*)

Waldo V. Snyder, Canton, Ohio, U. S. A., 10th December, 1892; 6 years.

Claim.—1st. The combination of the travelling platform A, having mounted thereon the body B, the pivoted legs d and d^1, the connecting wires e, the arms f, the compound bell crank F, the bars E, the pitman G and means for communicating rotary motion to the travelling wheels a, substantially as and for the purpose specified. 2nd. The combination of the travelling platform A, the hollow post or standard D, the bar h^1 having fixed thereto the yoke h, carrying the travelling wheel b, the head M fixed to the top or upper end of the bar h^1, and the guide bar N, substantially as and for the purpose specified. 3rd. The combination of the bar h^1, provided with the arm k, the wire or cord k^1, the pivoted tail shank k^3, and the tail k^4, substantially as and for the purpose specified. 4th. The combination of the body B, having fixed thereto the movable head M, and means for communicating movement to the head M, and the tail k^4, substantially as and for the purpose specified. 5th. The combination of the travelling platform A, having mounted thereon the body B, provided with the movable legs d and d^1, the crank shaft I provided with the wheel L, the wheel g, and the drive chain or belt g^1, substantially as and for the purpose specified. 6th. In a toy a travelling platform mounted on wheels, an animals body, mounted on, and fixed to said travelling platform, and means for propelling the travelling platform and communicating movement to the legs of the animal, substantially as and for the purpose specified.

No. 41,164. Method of Electrically Welding Metal.

(*Méthode de souder les metaux par l'électricité.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. The hereindescribed method of electric welding or metal working, consisting in subjecting the work to the influence of a magnetic field, rapidly changing the strength or polarity of the field, thereby raising the temperature of the work to the required extent, and then performing the desired operation upon the same. 2nd. The hereindescribed method of electric welding or metal working, consisting in subjecting the work to the influence of a magnetic field, rapidly changing the strength or polarity of the field, partly or wholly surrounding the work with suitable material to prevent radiation of heat, thereby raising the temperature of the work to the required extent, and then performing the desired operation upon the same. 3rd. The hereindescribed method of electric welding or metal working, consisting in subjecting or exposing the work at a point to be heated to the influence of a magnetic field, rapidly changing the strength or polarity of the field, thereby raising the temperature of the work to the required extent, and then performing the desired operation upon the same. 4th. The hereindescribed method of electric welding or metal working, consisting in generating an irregular electric current in a conductor including a coil of insulated wire, locating an iron core within the coil, placing the work in proximity to one or both poles of the core, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 5th. The hereindescribed method of electric welding or metal working, consisting in generating an irregular electric current in a conductor including a coil of insulated wire, locating a laminated iron core within the coil, placing the work in proximity to one or both poles of the core, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 6th. The hereindescribed method of electric welding or metal working, consisting in generating an alternating electric current in a conductor including a coil of insulated wire, locating a laminated iron core within the coil, placing the work in proximity to one or both poles of the core, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 7th. The hereindescribed method of electric welding or metal working, consisting in generating an alternating electric current in a conductor including a coil of insulated wire, locating a laminated iron core within the coil, placing the work in proximity to one or both poles of the core, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 7th. The hereindescribed method of electric welding or metal working, consisting in generating an alternating electric current in a conductor including a coil of insulated wire, locating a laminated iron core within the coil, placing the work in proximity to and between both poles of the core, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 7th. The hereindescribed method of electric welding or metal working, consisting in generating an alternating electric current in a conductor including a coil of insulated wire, locating an iron core within the coil, placing the work in proximity to one or both poles of the core, partly or wholly inclosing the work, and the one or both poles in proximity thereto with a suitable material to prevent radiation of heat, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same. 9th. The hereindescribed method of electric welding or metal working, consisting in subjecting the work to the influence of a magnetic field, rapidly changing the strength or polarity of the field, thereby raising the temperature of the work to the required extent, controlling the temperature by varying the strength of the field, and then performing the desired operation upon the same. 10th. The hereindescribed method of electric welding or metal working, consisting in generating an irregular electric current in a conductor including a coil of insulated wire, locating an iron core within the coil, placing the work in proximity to one or both poles of the core, exposing said work to the magnetic action until sufficiently heated, controlling the heat by varying the distance between the pole or poles and the work, and then performing the desired operation upon the same. 11th. The hereindescribed method of electric welding or metal working consisting in subjecting the work to the influence of a magnetic field, suitably holding or supporting the work, rapidly changing the strength or polarity of the field, thereby raising the temperature of the work to the required extent, and then performing the desired operation upon the same. 12th. The hereindescribed method of electric welding or metal working, consisting in generating an irregular electric current in a conductor, including a coil of insulated wire, locating an iron core within the coil, placing the work in proximity to one or both of the poles of the core, suitably holding or supporting the work, exposing said work to the magnetic action until sufficiently heated, and then performing the desired operation upon the same.

No. 41,165. Magnetic Separator.

(*Séparateur magnétique.*)

Jonas Wenstrom, Orebro, Sweden, and Olof Wenstrom, Marquette, Michigan, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. In a magnetic separator, the combination, with suitable armatures, of a magnet for said armatures, and means whereby the distance between said magnet and armatures may be varied for the purpose set forth. 2nd. In a magnetic separator, the combination with suitable movable armatures, of a fixed magnet, past which said armatures are arranged to move, and suitable means whereby said armatures and magnets may be adjusted with respect to each other. 3rd. In a magnetic separator, the combination with a stationary magnet, of an armature barrel arranged to revolve around said magnet, and suitable means whereby said barrel and magnet may be adjusted with respect to each other. 4th. In a magnetic separator, the combination with suitable standards, of a stationary magnet, adjustable sockets for sustaining said magnet within said standards, an armature barrel, substantially as described. 5th. In a magnetic separator, the combination with suitable standards, of a magnet sustained by said standards, an armature barrel wherein said magnet is held, and suitable barrel supports encircling the shafts of the armature, and whereon the barrel may be revolved, substantially as described. 6th. In a magnetic separator, an armature barrel comprising a series of soft iron bars, having threaded ends, and a ring or flange through which said ends of the armature bars extend, and suitable insulating bars between said armature bars, substantially as described. 7th. In a magnetic separator, the combination with an armature barrel and a magnet eccentrically sustained within said barrel, of a counterpoise for said magnet, substantially as described. 8th. In a magnetic separator, a feed mechanism comprising a delivery hopper, a feed pan and a suitable tappet wheel for imparting a shaking motion to said feed pan, substantially as described. 9th. In a magnetic separator, a feed mechanism comprising a delivery hopper, a feed pan and a suitable tappet wheel for imparting a shaking motion to said feed pan, and an adjusting screw for limiting the extent of movement of said feed pan, substantially as described. 10th. In a magnetic separator, a feed mechanism, comprising a delivery hopper, a fed pan for delivering the ore to the armatures, a tappet wheel for imparting a shaking movement to said feed pan, and suitable elastic bars for sustaining the feed pan, substantially as described. 11th. In a magnetic separator, the combination with a magnet and its armatures, of a frame having standards for sustaining said magnet and armatures, and having extensions, a drive shaft journalled in said extensions, and a hopper connecting said uprights and extensions,

substantially as described. 12th. In a magnetic separator, the combination with a magnet and its armatures adapted to be moved over said magnet, of standards for sustaining said magnet, a hopper sustained by the upper ends of said standards, a feed pan, for delivering the ore on to the armatures, and a sutiable tappet wheel for imparting an adjustable shaking motion to said feed pan, substantially as described.

No. 41,166. Breast Strap Slide for Harness.

(*Maille pour courroies d'atelles de harnais.*)

James Ansdell Macrae, Regina, North-west Territories, Canada, 10th December, 1892; 6 years.

Claim.—A breast strap slide, consisting of a hollow case through which the breast strap passes, and provided upon one side thereof with a snap hook or other means of attaching it to a neck-yoke or ring thereof, and upon the other side thereof a keeper for attaching or securing the martingale thereto.

No. 41,167. Thill Tug. (*Porte-limonière.*)

The Adjustable Metallic Lug Company, Boston, assignees of Daniel Rupert Porter, Chelsea, both in Massachusetts, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. In a thill tug, the combination of a main or inner section provided with a buckle at the upper portion thereof, and a swinging or outer section hinged to the lower end of said main section and provided on its outer side with a projecting portion adapted to surround a strap, as set forth. 2nd. In a thill tug, the combination of a main or inner section provided with a buckle at its upper portion, a swinging or outer section hinged to the lower end of the said main section and provided on its outer side with a projecting portion adapted to surround a strap, and a strap attached at one end to the upper portion of the main section, and having its free end passed through the projecting portion of the swinging section, as set forth.

No. 41,168. Art of Excavating Shafts.

(*Art de creuser les puits.*)

John D. Long, assignee of David Nathaniel Long, both of Buffalo, New York, U.S.A., 10th December, 1892; 6 years.

Claim. 1st. The hereindescribed mode of excavating shafts for mines or other purposes, which consists in sinking a test pit to the depth required, then cutting a tunnel to intersect the bottom of the test pit and thereby form an outlet for the debris, then excavating the rock or earth from the bottom of the test pit upward until the shaft is complete, substantially as described. 2nd. The herein described mode of excavating shafts for mines or other purposes, which consists in sinking a test pit to the depth required, then forming an outlet for the debris at the bottom of the test pit, then lowering an explosive down to the required depth in the test pit by means of a connecting wire, then exploding the same by a current of electricity which removes a sufficient amount of earth or rock to give the required diameter to the shaft, then removing the debris through the outlet, then repeating the operation above the removed portion of the shaft as often as may be required until the shaft is completed, substantially as described. 3rd. The herein described mode of excavating shafts for mines or other purposes, which consists in sinking a test pit to the depth required, or to a tunnel or outlet for the debris, then lowering the explosive by means of a wire connected thereto to the required depth in a can having a valve of flexible material above the top adapted to fit the diameter of the test pit, then filling the test pit above the valve with water, then exploding the same, then removing the debris through the outlet, and repeating the operation until the shaft is completed, substantially as described.

No. 41,169. Storage Battery. (*Accumulateur.*)

Charles James Hartmann, South Orange, New Jersey, U.S.A., 10th December, 1892; 6 years.

Claim.—1st. In an electrode for storage batteries, the main conducting plate A, constructed with diamonds or pyramidal depressions substantially as specified. 2nd. In an electrode for storage batteries, the central conducting plate A, constructed with serrated or fluted diamond or pyramidal depressions, substantially as specified. 3rd. In an electrode for storage batteries, the central conducting plate A, constructed with diamond or pyramidal depressions, serrated or fluted upon their surfaces and with burred or flanged perforations, substantially as specified. 4th. An electrode for storage batteries, constructed with the lug B, extending from the central portion of the top plate A to its outer edge, substantially as and for the purposes specified. 5th. In an electrode for storage batteries the conducting plate, constructed with the central portion A, the end folds A^3, the flaps A^1 and A^2, and the bottom fold A^4 arranged as shown, to fold upon the central portion A, so as to leave a space between for active material, and the lug B, substantially as shown and described. 6th. In an electrode for storage batteries, the conducting plate, substantially as shown and described, consisting of the central portion A, and flaps A^1 and A^2, the end folds A^3 and A^4 and the lug B, the portion A, A^1 and A^2, being covered with depressed serrated pyramids, a provided with flanged perforations, substantially as and for the purposes hereinbefore specified. 7th. An electrode for storage batteries, consisting of the conducting plate, constructed with side flaps A^1 and A^2, and arranged to fold around a central portion A, for the purpose of securing active material between their surfaces, and perforated and formed into diamond or pyramidal depressions, substantially as and for the purposes set forth. 8th. An electrode for storage batteries, consisting of a conducting plate constructed with pyramidal or diamond shaped depressions, alternating in direction and arranged to fold one upon the other, so that the apex of one pyramid or diamond coincides with and enters the depressions of another pyramid or diamond opposite it, and retains active material between their surfaces, substantially as and for the purposes set forth. 9th. An electrode for storage batteries, consisting of a central conducting plate A, and the side flaps A^1 and A^2, constructed with serrations and arranged to fold the one upon the other substantially as and for the purposes specified. 10th. An electrode for storage batteries, consisting of a central conducting plate A, and side flaps A^1 and A^2, constructed with flanged or burred perforations substantially as and for the purposes specified. 11th. An electrode for storage batteries consisting of the central plate A, side flaps A^1 and A^2, constructed with serrations or flutes, and flanged perforations, substantially as and for the purposes specified. 12th. The conducting plate A^a, constructed with serrations D^a, and grooves or pockets E^a, combined and arranged to operate, substantially as described. 13th. An electrode for storage batteries, consisting of the doubly serrated or grooved plate A^a, substantially as described, and the encasing conducting plates F and G, all combined and arranged to operate, substantially as hereinbefore set forth. 14th. The storage material for batteries, composed of resin or other similar gum, dissolved by alkali and mixed with active material, dried and made porous by neutralizing the alkali with acid, substantially as hereinbefore set forth. 15th. An electrode for storage batteries, consisting of the central conducting plate A^a, serrated and grooved on its faces, the serrated encasing and conducting plates F and G, and the active storage material, pressed into the internal serrations D^a, and the grooves E^a, all combined and arranged to operate, substantially as described. 16th. In an electrode for storage batteries, the plate A^a, constructed with serrations D^a, grooves E^a, and flanged perforations C^a, all combined and arranged, substantially as set forth. 17th. In an electrode for storage batteries, the plate A^a, constructed with flanged perforations C^a, substantially as described. 18th. In an electrode for storage batteries, the encasing plates F and G, constructed with serrations D^{a1}, and flanged perforations C^{a1}, arranged substantially as described, to encase the conducting plate A^a, and to hold storage material between the said conducting plate A^a, and the encasing plates F and G, substantially as set forth.

No. 41,170. Heating Apparatus for Railway Carriages. (*Appareil de chauffage pour chars de chemin de fer.*)

Thomas Steward Lapraik, Derby, England, 10th December, 1892; 6 years.

Claim. 1st. The combination of the railway carriage heating apparatus, substantially as herein described, and according to figs. 1 and 2 of the accompanying drawings. 2nd. In a railway carriage heating apparatus, the combination of the cylinder *a*, steam jacket *b*, pressure pump *c*, feed pipe *e*, steam pipe *d*, stop cocks *f*, *g*, *i*, coils *j*, pipe *h*, tank *k*, substantially for the purpose herein specified and according to the accompanying drawings. 3rd. The combination of the railway carriage heating apparatus, constructed of any material, shape, or with any modification of the various parts, substantially as herein described and for the purpose specified.

No. 41,171. Combination Lock. (*Serrure à combinaison.*)

Henry Harris Daniels, Cincinnati, Ohio, U. S. A., 10th December, 1892; 6 years.

Claim.—1st. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F, and tumbler support K united together, substantially as described, the tumbler support being provided with the pinion k^9, arranged to mesh with the notches or teeth f^2 of the tumbler, and the rod C^{16} provided with the projecting teeth C^{29}, and mechanism substantially as described, for enabling the rod C^{16} to be longitudinally reciprocated for bringing said teeth C^{29} into contact with their respective pinions k^9, and for rotating the rod C^{16}, substantially as and for the purposes specified. 2nd. In a combination lock, the combination of two or more tumblers, each tumbler consisting of a tumbler disc N, tumbler ring F, and tumbler support K united together, substantially as described, and a tumbler operating column having rod C^{16} carrying teeth C^{29}, and the finger disc C^{15} arranged to move to and from the tumblers provided with mechanism for enabling the rotation of the said disc when at one end of its reciprocal movement, to rotate a given tumbler, substantially as and for the purposes specified. 3rd. In a combination lock, the combination of two or more tumblers, each consisting of a tumbler disc N, tumbler ring F, and tumbler support K united together, substantially as described, and tumbler operating column having rod C^{16} carrying teeth C^{29}, and the finger disc C^{15} arranged to move to and from the tumblers, provided with mechanism for enabling the rotation of the said disc when at one end of its reciprocal movement to rotate a given tumbler, and provided with means, substantially as described, for elastically returning the disc after a given tumbler

has been returned to its first position, substantially as and for the purposes specified. 4th. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F, and tumbler support K united together, substantially as described, and a tumbler operating column having rod C^{16} carrying teeth C^{29}, and the finger disc C^{15} arranged to move to and from the tumblers, provided with mechanism for enabling the rotation of the said disc when at one end of its reciprocal movement to rotate a given tumbler, and provided with spring C^{20} embracing the rod C^{16}, fastened substantially as described, substantially as and for the purposes specified. 5th. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F, and tumbler support K united together, substantially as described, and the rod C^{16} provided with teeth engaging the pinions k^9, the rod C^{16} reciprocating through the said shank, and the disc C^{15} connected to the rod, the disc C^{15} being capable of reciprocal movement to and from the tumblers, substantially as described, and spring for elastically returning finger disc C^{15} to its first position, substantially as and for the purposes specified. 6th. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F and tumbler support K, united together substantially as described, and rod C^{16} provided with teeth C^{29}, engaging their respective adjacent pinions k^9, the rod C^{16} reciprocating through the shank, and the reciprocating disc C^{15}, and means, substantially as described, for enabling the reciprocating movement of the disc to rotate the rod, substantially as and for the purposes specified. 7th. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F and tumbler support K, united together substantially as described, and rod C^{16} provided with teeth C^{29} engaging their respective adjacent pinions k^9, the rod C^{16} reciprocating in the shank C^4, and finger disc C^{15} located in the recess C^{14} at the end of the bed foundation portion of the tumbler operating column connected to the rod by mechanism, substantially as described, for enabling the said finger disc C^{15}, when reciprocated and turned, to rotate the rod and move the teeth C^{29}, substantially as and for the purpose specified. 8th. In a combination lock, the combination of two or more tumblers, each tumbler consisting of tumbler disc N, tumbler ring F and tumbler support K, united together substantially as described, and rod C^{16} provided with teeth engaging their respective adjacent pinions k^9, the rod C^{16} reciprocating in the shank C^4, the disc C^{15} located in the recess C^{14} and rigidly connected to the said rod C^{16}, and provided with spring C^{20}, substantially as and for the purposes specified. 9th. The series of tumblers having central openings through which passes an operating rotable reciprocating shaft, having projections in combination with pinions for successively operating the tumblers, one of the said projections, when the shaft has been reciprocated in one direction and rotating a given distance engaging with one of the said pinions, the said projections when the shaft has been reciprocated in the opposite direction being out of engagement with the said pinions, substantially as and for the purposes specified. 10th. The combination of the catch C^{21}, and the disc C and tumbler operating column, having shank C^4, having two or more projections C^5, and the tumblers having projections n^1, and the shell having notches, as A^3, A^4, A^5, substantially as and for the purposes specified. 11th. The combination of the catch C^{21}, and the disc C and tumbler operating column, having shank C^4, having two or more projections C^5, and the tumblers having projections n^1, and the shell having notches, as A^3, A^4, A^5, and the reciprocating rod C^{16}, having teeth C^{29} and finger disc C^{15}, and elastic mechanism for returning the spring to its first position after being operated, and pinions, as k^9, located substantially as described, substantially as and for the purposes specified. 12th. The combination of the catch C^{21}, and the disc C and tumbler operating column, having shank C^4, having two or more projections C^5, and the tumblers having projections n^1, and the shell having notches, as A^3, A^4, A^5, and the reciprocating rod C^{16} having teeth C^{29}, and finger disc C^{15}, and spring C^{20}, located in connection with rod C^{16}, and pinions as k^9, located substantially as described, substantially as and for the purpose specified. 13th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, bearing against a fixed portion of the lock, against the bottom of the end tumbler support, substantially as and for the purposes specified. 14th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10} compressed between a fixed portion of the shell and a part of the tumbler mechanism for creating frictional contact between the tumblers, substantially as and for the purposes specified. 15th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, one end bearing against the end C of the shell, and the other end of the spring pressing up the bottom side of the lower tumbler support, substantially as and for the purposes specified. 16th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, one end located in a depression C^{12}, in the end of C of the shell, and pressing the tumbler devices together, substantially as and for the purposes specified. 17th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, one end located in a depression C^{12}, in the end C of the shell, and the washer O, against which the other end of the spring bears, this washer being below the lower tumbler support, substantially as and for the purposes specified. 18th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, bearing against a fixed portion of the lock, and against the bottom of the end tumbler support, each tumbler having projections as n^1, and the shank C^4, having projections C^5, for respectively engaging the projections as n^1 of the tumblers, and the rotable disc C connected to the shank and having catch C^{21}, engaging a fixed portion of the lock, and mechanism for rotating each tumbler to a given number, substantially as and for the purposes specified. 19th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10}, bearing against a fixed portion of the lock, and against the bottom of the end tumbler support, each tumbler having projections as n^1, and the shank C^4, having projections C^5, for respectively engaging the projections as n^1 of the tumblers, and the rotable disc C connected to the shank, and having catch C^{21}, and a fixed portion of the lock having as many notches as there are tumblers, the notches being adapted to receive the said catch, and mechanism for rotating each tumbler to a given number, substantially as and for the purposes specified. 20th. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler supports, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10} bearing against a fixed portion of the lock, and against the bottom of the end tumbler support, each tumbler having projections as n^1, and the shank C^4 having projections C^5 for respectively engaging the projections as n^1 of the tumblers, and the rotable disc C connected to the shank and having catch C^{21}, and a fixed portion of the lock having as many notches as there are tumblers, the notches being adapted to receive the said catch, and rod C^{16} having teeth C^{21}, and connected to finger disc, and reciprocating with the length of the shank, and mechanism for enabling the movement of the teeth of the rod C^{16} to rotate the tumblers, substantially as and for the purposes specified. 21st. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10} bearing against a fixed portion of the lock, and against the bottom of the end tumbler support, each tumbler having projections as n^1, and the shank C^4 having projections C^5 for respectively engaging the projections as n^1 of the tumblers, and the rotable disc C connected to the shank and having catch C^{21}, and a fixed portion of the lock having as many notches as there are tumblers, the notches being adapted to receive the said catch, and rod C^{16} having teeth C^{21}, and connected to finger disc, and reciprocating with the length of the shank, and pinions as k^9, for respectively operating the tumblers, and for engagement with the teeth of rod C^{16}, substantially as and for the purposes specified. 22nd. The combination of the tumbler supports and the tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and the spring C^{10} bearing against a fixed portion of the lock, and against the bottom of the end tumbler supports, each tumbler having projections as n^1, and the shank C^4 having projections C^5 for respectively engaging the projections as n^1 of the tumblers, and the rotable disc C connected to the shank, and having catch C^{21}, and a fixed portion of the lock having as many notches as there are tumblers, the notches being adapted to receive the said catch, and rod C^{16} having teeth C^{21}, and connected to finger disc, and reciprocating with the length of the shank, and pinions as k^9, for respectively operating the tumblers, and for engagement with the teeth of rod C^{16}, and mechanism for retracting the rod to its original position, substantially as and for the purposes specified. 23rd. The combination of the shank C^4, fixed to the rotable disc C, and having notch or recess C^{24}, and teeth C^5, and tumblers having projections as n^1, for respective engagement with said teeth C^5, and rod C^{16} reciprocating in the shank, and having teeth C^{29} on the blade C^{19}, and mechanism for enabling the said teeth C^{29}, as rod C^{16} is turned to rotate the tumblers, substantially as and for the purposes specified. 24th. The combination of the shank C^4, fixed to the rotable disc C, and having notch or recess C^{24}, and teeth C^5, and tumblers having projections as n^1, for respective engagement with teeth C^5, and rod C^{16} reciprocating in the shank, and having teeth C^{29} on blade C^{19}, and pinions k^9 for engaging said tumblers, and also said teeth C^{29}, as rod C^{16} is rotated, the sides of notch C^{24} limiting the rotation of the blade C^{19}, and thereby limiting the rotation of the said teeth C^{29}, substantially as and for the purpose specified. 25th. The combination of the tumbler supports and tumblers, each tumbler made thicker than the depth of its seat in the tumbler support, and the envelope or shell in which said tumblers and their supports are contained, and elastic mechanism bearing

against one portion of the lock, and arranged to press the tumbler devices against each other, substantially as and for the purposes specified.

No. 41,172. Wooden Shovel. (*Pelle de bois.*)

Victor Lemieux, Quebec, Canada, 10th December, 1892; 6 years.

Résumé.—1er. Un couvrement du morceau C en métal, fait de la forme de trois pans d'un carré et ajustable sur le haut de la soucoupe. 2ème. Un morceau en métal H introduit dans une rainure faite dans la demi épaisseur de la soucoupe qui forme le taillant de la dite soucoupe tel que ci-dessus décrit et pour les fins indiquées.

No. 41,173. Method of Making Iron Globules.

(*Méthode de faire des globules en fer.*)

Benjamin Chew Tilghman, Broadheath, near Manchester, England, and Richard Albert Tilghman, Philadelphia, Pennsylvania, U.S.A., 12th December, 1892; 6 years.

Claim.—1st. The described method of manufacturing chilled iron globules with bright metallic surfaces, which consists in atomizing melted metal in a non-oxidizing atmosphere, chilling the resulting globules by immersion in water and subsequently drying them under conditions which preclude the formation of rust. 2nd. The described method of manufacturing chilled iron globules with bright metallic surfaces, which consists in atomizing melted metal in a non-oxidizing atmosphere, chilling the resulting globules by immersion in water, removing the globules from the water and wetting them with a saturated solution of lime or its equivalent, and then drying them. 3rd. The described method of manufacturing chilled iron globules with bright metallic surfaces, which consists in atomizing melted metal, chilling the resulting globules by immersion in water, removing the globules from the water and wetting them with a saturated solution of lime or its equivalent, and then drying them.

No. 41,174. Automatic Numbering and Check Printing Machine. (*Numérateur automatique et machine à imprimer les billets.*)

William Easdown Smith, Sydney, New South Wales, Australia, 12th December, 1892; 6 years.

Claim. 1st. In a Wharfdale or other printing machine, the use and application of a framework fitted with mechanism for consecutive numbering and printing in substitution for the ordinary type frame, placed upon the movable table of such machine and operated by a movable pad attached to the rigid framework or foundation part of the printing machine, as described and for the purposes set forth. 2nd. The application to a Wharfdale or other printing machine, of a rectangular framework, placed upon the movable table, and having longitudinal and transverse bars, containing in combination, letter press and numbers, the said numbers being made to operate by a compound lever actuated by an impulse rod, operated simultaneously by the backward and forward movements of the table of the printing machine, as herein described and for the purposes set forth. 3rd. In a combined numbering and printing machine, applied to a Wharfdale or other printing machine, the mechanism consisting of an outer rigid frame and an inner movable frame, used in combination with a compound lever, for operating the inner movable frame, to which is attached upon distance rods, the letter press, electrotype, or copperplate, and the numbering mechanism for the purpose of printing and numbering simultaneously, as described and shown. 5th. In a combined numbering and printing machine, taking the place of an ordinary type frame, the use and application of casings containing numerals, the said casings being fitted with slides, springs, levers and pawls, each actuated simultaneously by the movement of the inner frame, in combination with a compound lever, attached to an impulse rod, operated by a movable pawl, attached to the rigid framework of a Wharfdale or other printing machine, as described and for the purpose set forth. 5th. In a combined numbering and printing machine, taking the place of an ordinary type frame, and consisting of an outer rigid frame and an inner movable frame fitted with letter press and numerals, in combination, the use and application of a compound lever attached to an impulse rod, operated by a movable pawl, as described and for the purpose set forth. 6th. In a combined numbering and printing machine, as described in claim three, the use and application of a movable pawl, attached to the rigid framework of a printing machine, for the purpose of operating an impulse rod attached to a compound lever, imparting motion to an inner frame, containing numerals and letter press, for the purpose of operating the said numerals at the will of the operator, as described and shown.

No. 41,175. Exhaust Pipe for Locomotives.

(*Tuyau d'émission de la vapeur pour locomotives.*)

James Bernard Hartigan, Oswego, New York, U.S.A., 12th December, 1892; 6 years.

Claim.—1st. The combination, with the exhaust pipe B, of the chamber R, and the pipe connected to said chamber, and tapping said exhaust pipe beneath the nozzle, as set forth. 2nd. In combination, with the exhaust pipe B, the chamber R, communicating with said pipe, and the exhaust pipe *a*, of the air pump extending into said chamber, as set forth.

No. 41,176. Door Lock Switch for Electric Lights.

(*Serrure de porte à aiguille pour lampes électriques.*)

Charles Green, Toronto, Ontario, Canada, 12th December, 1892; 6 years.

Claim.—1st. In a door lock swith for electric lights, a switching piece pivoted in the keeper, and having one end located between the conducting wires, and held normally out of contact therewith, and the other end adapted to be operated by the bolt of the lock to close the circuit, substantially as described. 2nd. The combination with the bolt B, of the lock A, and the switch C, and having the wedged or V-shaped portions *e*, *e*, and provided with the spring *a*, and designed to come in contact with the plates, *f*, *f*, and *g*, *g*, so as to complete or break the circuit through the wires D, as and for the purpose specified.

No. 41,177. Combined Inhaler and Medicator.

(*Inhalateur et appareil médical combinés.*)

John Jacob Sencenbaugh, Chicago, Illinois, U.S.A., 12th December, 1892; 6 years.

Claim. 1st. In a device of the class described, the combination of two bowls separably connected to form a chamber, a cup removably secured in one of said bowls, and adapted to contain a suitable drug, a sponge secured in the other of said bowls, and adapted to be moistened with a suitable liquid, and means for maintaining a space between said cup and sponge, substantially as shown and described. 2nd. The combination with the portions A, B, of the cup C, having the bail *c*, adapted to receive and retain a suitable drug, and the sponge b^1, isolated therefrom by means of the bail *c*, substantially as described. 3rd. The combination with the portions A, B, of the cup C, having the bail *c*, a suitable drug within the cup, the sponge c^2, holding the same in place, and itself retained by means of the bend c^1, and a second sponge b^1 within the interior, held away from the sponge c^2, by means of the bail *c*, substantially as described.

No. 41,178. Fastener for Trunks. (*Agrafe pour coffres.*)

Joshua L. Jones, Chicago, Illinois, U.S.A., 12th December, 1892; 6 years.

Claim. 1st. A trunk fastener consisting of an upper part A, having a tongue *b*, provided with holes *c*, in combination with a lower part B, formed of a flat blade or base *j*, provided with a notch adapted to receive said tongue, said blade *j* being provided with walls *k*, forming a rectangle of which the upper wall is cut away to receive said part A, and a locking bar held within and hinged at one end to said walls, and provided with spurs to enter the holes of said tongue, substantially as specified. 2nd. A trunk fastener consisting of an upper part A, having a tongue *b*, provided with holes *c*, in combination with a lower part B, formed of a flat blade or base *j*, provided with a notch adapted to receive said tongue, said blade *j* being provided with walls *k*, forming a rectangle of which the upper wall is cut away to receive said part A, and a locking bar held within and hinged at one end to said walls, and provided with spurs to enter the holes of said tongue, and locking mechanism in the free end of said bar, substantially as specified. 3rd. A trunk fastener consisting of an upper part A, having a tongue *b*, provided with holes *c*, in combination with a lower part B, formed of flat blade or base *j*, provided with a notch adapted to receive said tongue, said blade *j* being provided with walls *k*, forming a rectangle of which the upper wall is cut away to receive said part A, and a locking bar held within and hinged at one end to said walls, and provided with spurs to enter the holes of said tongue, and locking mechanism in the free end of said locking bar, and a flat spring to press on the free end of said locking bar near its pintle, substantially as specified.

No. 41,179. Watch Case. (*Boîte de montre.*)

François Borgel, Geneva, St. Jean, Switzerland, 12th December, 1892; 6 years.

Claim.—In watch cases of any shape or configuration, the use of a female screw thread *a*, in combination with a corresponding male screw thread provided to a watch work B, or to the circle C surrounding the same, in view of firmly affixing the watch work into the watch case.

No. 41,180. Vehicle Pole. (*Timon de voiture.*)

William Luther Pike, Groton, New York, U.S.A., 12th December, 1892; 6 years.

Claim. 1st. The combination, with the cross bar of a pole, of arms loosely secured thereto, and rods secured to said arms at a point between their ends, and means for securing its opposite end adjustably upon the cross bar. 2nd. The combination, with the cross bar of the pole, of the arms loosely secured thereto, eyes loosely secured to said arms, and rods secured to said arms at a point between their ends, and means for securing its opposite end adjustably upon the cross bar. 3rd. The combination, with the shaft or pole, of the pivoted arms 2 secured thereto, rods 3 and 8 secured upon the bolt 4, the bolt 4 having a head 6 travelling in the slotway 7, and the coupler 9 receiving the inner ends of the rod 8, as set forth.

No. 41,181. System of Checking Fares and Baggage.
(*Système de marquer les cachets et le bagage.*)

James Philip Martin, Montreal, Quebec, Canada, 12th December, 1892; 6 years.

Claim. 1st. In a combined fare and baggage checking system, the issuance of a coupon with the passenger ticket adapted to bear particulars of the quantity and weight of the baggage accompanying the holder of such ticket. 2nd. The combination with a passenger ticket, of a baggage coupon. 3rd. The combination of a passenger and baggage coupon the latter adapted to bear particulars of the quantity and weight of the baggage accompanying the holder of the ticket and both bearing corresponding numbers, as set forth.

No. 41,182. Transfer Ticket. (*Billet de transfert.*)

Emil C. Boeckh, Toronto, Ontario, Canada, 12th December, 1892; 6 years.

Claim. 1st. A ticket having printed on its surface a column of twelve figures indicating the hours, and opposite to said column two other columns with figures arranged in pairs opposite to each hour figure to denote, when punched, the half hour before and the half hour after each particular hour, the column being differently marked or coloured to indicate night and day, substantially as and for the purpose specified. 2nd. A ticket having printed on its surface a column of names or symbols indicating the transfer routes, the said column being divided by a line, the punching on one side of which indicates the direction of the route for which the transfer ticket is issued, substantially as and for the purpose specified. 3rd. A ticket having printed on its surface a column of twelve figures indicating the hours, and opposite to said column two other columns with figures arranged in pairs opposite to each hour figure to denote, when punched, the half hour before and the half hour after each particular hour, the column being differently marked or coloured to indicate night and day, a column of names or symbols indicating the transfer routes, the said column being divided by a line, the punching on one side of which indicates the direction of the route for which the transfer ticket is issued, substantially as and for the purpose specified.

No. 41,183. Gas Governor. (*Régulateur à gaz.*)

James Love, Linton Road, Barking, Essex, England, 12th December, 1892; 6 years.

Claim. 1st. In a gas regulator or governor, the combination of the diaphragm *d*, bell *e*, float *f*, annular chamber *h*, nut *c*, valve rod *g*, controlling valve *i*, *i*, and valve seatings *j*, *j*, with the valve *a*, in a casing *l*, substantially as herein described and according to the accompanying drawing. 2nd. In a gas regulator or governor, the combination of the diaphragm *d*, bell *e*, nut *c*, valve rod *g*, vent hole *b*, and the screw plug *a*, with the controlling valve, substantially as herein described and according to the accompanying drawing.

No. 41,184. Gate. (*Barrière.*)

William Richard White, Bloomington, Illinois, U. S. A., 12th December, 1892; 6 years.

Claim. 1st. The combination with a swinging gate, of the operating levers G, G¹, a laterally projecting frame or arm I, extending outward from the side of the gate, and a rod *b*, between the outer end of the said frame or rod and the inner ends of the operating lever, substantially as described. 2nd. The combination of a swinging gate provided with a lock or latch *m*, the laterally movable arm 2, connected with the said lock or latch, the operating levers G, G¹, and the connecting parts between the inner ends of the operating levers and the said arm 2, substantially as described. 3rd. The combination of a swinging gate provided with the bolt or latch *m*, the gate operating levers G, G¹, a laterally projecting frame I, consisting of the bracing pieces 3 and 4, and a laterally movable member 2, connected with the bolt, lock or latch and the rod connecting the said frame I, with the gate operating levers, substantially as described. 4th. The combination of a swinging gate having a sliding latch or bolt *m*, the gate operating levers G, G¹, and frame I, projecting outward from the side of the gate having a laterally movable member 2, connected with the bolt, lock or latch, and the two bracing members 3 and 4, the said bracing members being hinged or pivoted to a support adjusted to the gate hinges, and connecting rod *b*, substantially as described. 5th. The combination of the gate with the post B, composed of the two parts 5 and 6, set at an angle to each other to form a recess 7, substantially as described. 6th. The combination of a swinging gate, the operating levers G, G¹, the vibrating steadying arm *c*, to which one of the levers is directly connected, the arm F, uniting the other lever to the arm, and the rod *b*, connecting the arm *c*, with the gate, substantially as described. 7th. The combination with a swinging gate of the means for adjustably connecting the gate to the post, consisting of vertically arranged staples 22, upon which the gate swings, and a bracket 25, sliding upon one of the staples, substantially as described. 8th. The combination with a gate, of the hinges consisting of the gate member 21, and the post member 22, provided with abutments 24, substantially as and for the purposes set forth.

No. 41,185. Land Roller. (*Rouleau d'agriculture.*)

David A. Grant, Township of Raleigh, County of Kent, Ontario, Canada, 12th December, 1892; 6 years.

Claim. 1st. The combination, of four drums of same size, coupled in pairs A, A, and B, B¹, revolving on steel arms E¹, and cast iron sleeve E, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of drums A, A¹, and B, B¹, revolving on arms E¹, and cast iron sleeve E, with the oscillating head H, working on bars K, and the collars I, I, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of drums A, A¹, B, B¹, the arms E¹, cast iron sleeve E, the oscillating head H, transverse bars K, with the foot lever C, attached, and operating a cleaning device G, for each pair of drums, all substantially as and for the purposes hereinbefore set forth.

No. 41,186. Pulley. (*Poulie.*)

William Henry Standish and William Taylor Reid, both of Toronto, Ontario, Canada, 12th December, 1892; 6 years.

Claim. 1st. A split pulley, comprising two sections, the rim of each of said sections made one continuous piece of material bent into a semi-circular shape, substantially as and for the purpose set forth. 2nd. A split pulley, comprising two sections, the rim of each of said sections made of one continuous piece of material bent into a semi-circular shape, each end of said section of the rim mortised, in combination with an arm, tenons formed on the end and adapted to fit into the mortised ends of the section of the rim, substantially as described. 3rd. In a split pulley consisting of two sections, each of said sections provided with an arm, said arms parallel to each other when the sections are put together, the combination of a hub comprising two sections, said sections secured one to either of said arms, one of said sections having a groove, the other one of said sections having a tongue adapted to enter the groove of the other section, substantially as described. 4th. In a split pulley having a split hub, the combination of a bushing comprising two sections, one of said sections being more than one-half the size of the cavity, so that its ends will project beyond the dividing line, the ends of said section arranged at an angle of about sixty degrees to the inner circumference, the other section being proportionately less than one-half the size of said cavity, and the ends of this section being inclined at the same angle at the ends of the other section, substantially as and for the purpose described.

No. 41,187. Valve. (*Soupape.*)

Ghorge K. Tower, District of Molega, County of Queen's, Nova Scotia, Canada, 12th December, 1892; 6 years.

Claim.—1st. The combination of the central or facing spindle F and the valve proper E, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the central or facing spindle F, and the check nut L, and cross bar M, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the central or facing spindle F, with the main or regulating spindle H, substantially as and for the purpose set forth.

No. 41,188. Frame for Tiles. (*Cadre pour tuiles.*)

Riverius Marsh, New Brunswick, New Jersey, U.S.A., 12th December, 1892; 6 years.

Claim. 1st. A tile frame composed of a sheet metal base or backing, having an upturned edge and an overhanging bead for holding the tile, and an outwardly curved frame edge, substantially as herein set forth. 2nd. A tile frame composed of a sheet metal base or backing, having an upturned edge and an overhanging bead, said backing having perforations and slots for receiving screws, substantially as herein set forth. 3rd. A sheet metal base or backing having an upturned edging for the tile, and an overhanging bead for retaining the tile, and a curved frame edge, in combination with a sheath or covering for said frame edge, substantially as herein set forth. 4th. A sheet metal base or backing, perforated and slotted, having an upturned edging for the tile, and an overhanging bead for retaining the tile, in combination with a wooden structure or frame, and the set screws for holding the tile frame, substantially as herein set forth. 5th. A tile frame having an overhanging bead for retaining the tile, in combination with a decorated sheath strip for covering the tile frame, substantially as herein set forth. 6th. A tile holder composed of a single piece of sheet metal having upturned edges and intervening crimped ribs and tongues for holding and retaining the tiling, substantially as herein set forth. 7th. A tile holder having the back, edges and strips between the different rows of tiling formed of one piece, substantially as herein set forth. 8th. An adjustable tile holder having the back or base of the frame, the side walls and ledges for retaining the tile, and the tongues for holding the tile in position made integral with each other, substantially as herein set forth. 9th. In a tile holder, the base plate having suitable upturned edges, and overhanging ledges, and intervening walls, and ledges, and tongues, in combination with tiling, substantially as herein set forth. 10th. A tile holder composed of a single piece of sheet metal having upturned edges and intervening crimped ribs and tongues for holding and retaining the tiling, in combination with the tiling, substantially as herein set forth. 11th. A tile holder having the back, edges and strips between the different rows of tiling formed of one piece, in combination with the tiling, substantially as herein set forth. 12th. An adjustable tile holder

having the back or base of the frame, the side walls, and ledges for retaining the tile, and the tongues for holding the tile in position, made integral with each other, in combination with the tiling, substantially as herein set forth. 13th. A holder for sectional tiles composed of a sheath strip of metal, curved in cross section, as shown, in combination with a screw headed bolt, the base plate and the tiling, substantially as herein set forth. 14th. A holder for sectional tiles composed of a sheath strip of metal, for holding the two adjoining edges of tiling as shown, in combination with a screw headed bolt, the tiling, the base plate having the walls, and ledges for holding the opposite edges of the tiling integral with the base, substantially as herein set forth. 15th. As a new article of manufacture, an adjustable tile frame holder having the base, side walls, overhanging ledges and adjusting tongues, all formed of one piece of metal, substantially as herein set forth.

No. 41,189. Hammock. (*Hamac.*)

Charles Johnston, Harriston, Ontario, Canada, 12th December, 1892; 6 years.

Claim.—1st. The combination of the galvanized steel spiral coil wire interwoven with the double or treble longitudinal coil wires A, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of steel coil woven wire O and A, with wooden cross end pieces B and C, with chain hangers D, and screw eyes E, substantially as and for the purpose hereinbefore set forth. 3rd. The insertion of the coil woven wire into the centre of the side of the wooden end pieces, as shown in figs. 2, 3 and 4, to prevent the tilting up from the level of the end pieces B, when the hammock is in use, substantially as and for the purpose set forth.

No. 41,190. Method of Making Ale.

(*Méthode de faire de la bière.*)

Andrew Worthington Billings, Brooklyn, New York, U.S.A., 12th December, 1892; 6 years.

Claim.—1st. The improvement in the manufacture of beer or ale, consisting in making a mash by mixing together raw grain and water and a portion of malt gradually heating the entire mass to about 146° Fah. and then rapidly raising the temperature and maintaining the higher temperature until the starch globules are liberated then at once cooling to a temperature below 165° Fah. then adding the remaining portion of malt required for the brew maintaining the temperature over 155° and subsequently filtering the wort, substantially as set forth. 2nd. The improvement in the manufacture of beer and ale from malt and raw corn consisting in making the mash, of the malt and grain, mixing the parts intimately together by mechanical action and discharging the entire mass at once into a filtering tub and there filtering the same, substantially as set forth. 3rd. The within described apparatus provided with a revolving shaft carrying blades arranged at angles to thoroughly mix the mash and with steam and water pipes whereby to inject steam into the mash and into a surrounding jacket, substantially as described and shown. 4th. The method and means of manufacturing ale and beer, substantially as hereinbefore described and shown.

No. 41,191. Pumping Apparatus.

(*Appareil pour pomper.*)

Donald Noble and John Arthur Brown, both of Leeds, York, England, 12th December, 1892; 6 years.

Claim. 1st. The arrangement and combination of valves and tubes, pump barrels and pistons, pedals and levers substantially as hereinbefore described by means of which the pumping apparatus may be worked by the heals of the operator's feet, that is to say the combination of the pump barrels B, B^1, arranged within a water receptacle or platform as described having one or two pistons reciprocating therein with the pedals I, I^1, hinged at their toe ends, lever I^{11} alone, or levers I^{11}, I^{12}, I^{13}, and shafts L^4, L^5, combined and c^8, c^9, c^{10}, c^{11}, and tubes connected therewith whereby water may be drawn out of a bucket or other receptacle into one pump barrel simultaneously with the ejection of water in a continuous stream from the other barrel. 2nd. In pumping apparatus, such as herein described, worked by the heels of the operator's feet, the oscillating shafts, such as L^4, L^5, arranged to pass within the water receptacle to which the pedals are jointed thereto at their toe or rear ends, for imparting the requisite motion to the pistons through levers such as L^{12}, L^{13}, mounted on said shafts, substantially as herein described. 3rd. In pumping apparatus, worked by the heels of the operator's feet. the arrangement and combination of parts, substantially as hereinbefore described, by means of which water admitted to the pump barrels, arranged within a platform or water receptacle, as described, may be admitted into the barrel at one end, and on the return stroke of the piston, passed to the other end of the barrel prior to being ejected therefrom, that is to say, the combination of a pump barrel, such as B, or B^1, arranged within a water receptacle A, having the two pistons, such as H, H^1, or H^2, H^3, reciprocating therein, with the hollow piston rod, such as H^4, or H^5, and valves such as c^8, c^9, and H^6, or c^{10}, c^{11}, and H^7, and the mechanism for reciprocating the pistons as herein described. 4th. In pumping apparatus, such as herein described, worked by the heels of the operator's feet. the air vessels F, formed of tubes arranged to be fixed to or within the water receptacle or platform for strengthening purposes. or to be attached to the same for carrying purposes, and to communicate with the valve box or boxes, substantially as herein described. 5th. In pumping apparatus, such as herein described, worked by the heel's of the operator's feet, the combination of two pump barrels B, B^1, and their pistons and valves, boxes and tubes arranged within a water receptacle with an air vessel F, and with the pedals I, I^1, hinged at their toes, shafts I^4, I^5, and levers I^{11}, I^{12}, I^{13}, substantially as and for the purposes described. 6th. In pumping apparatus, such as herein described, worked by the heels of the operator's feet, the adjustable lever I^{11}, jointed to cranks L, L', mounted within the platform on trunnions, and operated from the outside of the platform by a lever, such as L^5, substantially as hereindescribed and set forth. 7th. In pumping apparatus, such as hereindescribed, worked by the heels of the operator's feet, the combination of the pump barrels B, B^1, pistons H, H^1, valve box J, and parts connected therewith, and air vessel F, with pedals I, I^1, hinged at their toes, connecting links K, K^1, jointed respectively to the pedals and pistons and adjustable lever I^{11}, and mechanism for operating the same, whereby the pistons may make a stroke the full length of the pump barrel, substantially as described. 8th. The improved pumping apparatus, worked by the heels of the operator's feet, substantially as herein described and illustrated in the accompanying drawings.

No. 41,192. Convertible Camera and Graphoscope.

(*Camera et graphoscope convertible.*)

William Vivian Esmond and Alfred C. Kemper, both of Chicago, Illinois, U. S. A., 12th December, 1892; 6 years.

Claim.—1st. A convertible camera and graphoscope, comprising in combination, a light tight inclosing case, having an opening *t*, in the front side, an opening *m*, for the admission of light, a magnifying lens t^1, and a shutter at the opening *t*, a removable light tight cover for the opening *m*, and a holder in the case, adapted to hold a strip of sensitized material for the taking of negatives, or a strip of finished pictures, to supplant the sensitized strip, substantially as described. 2nd. A convertible camera and graphoscope, comprising in combination, a light tight inclosing case having an opening *t*, in the front side, an opening *m*, in the line of vision through the opening *t*, a magnifying lens t^1, and a shutter at the opening *t*, a removable light tight cover for the opening *m*, and rollers in the case, at opposite sides of the plane of the opening *t*, adapted to hold a strip of sensitized material for the taking of negatives, or a strip provided with transparencies to supplant the sensitized strip, and operative to move the strip across the field of view, substantially as described. 3rd. In a camera, the combination, with the inclosing case, of a removable and replacable roll holder, forming the back and one side portion of the case, and rollers case, of a removable and replacable roll holder, forming the back and one side portion of the case, and rollers carried by the roll holder and extending beyond the side of the case, said rollers being adapted to receive and hold a strip of sensitized material, and operative to move the same across the field of exposure, substantially as described. 4th. In a camera, the combination, with the inclosing case and film carrying rolls, of a resilient self adjusting mat in the case, having an opening through it, and pressing at opposite sides of its opening normally against the rolls, whereby as the film is unrolled from one roll upon the other, the mat by self adjustment will maintain contact with each roll, substantially as and for the purpose set forth. 5th. In a camera, the combination, with the inclosing case and film carrying rolls, of grooves *i*, i^1, in the case adjacent to the rolls, and a mat *c*, in the grooves, provided with springs b^1, operating to maintain the mat in contact with the rolls, substantially as and for the purpose set forth. 6th. In a roll holder for cameras, the combination, with the roll holder frame, and rolls supported therein, of stops in the frame, and a mat and springs confined in the frame between the said stops and rolls, the spring operating to press the mat normally against the rolls, substantially as described. 7th. In a camera, the combination, with the inclosing case provided with the opening *t*, of a swinging shutter, for the said opening, inside the case having the opening r^1, a spring operating normally to maintain the shutter at the limit of its movement in one direction, and means for actuating the shutter, comprising a rocking pin which carries the shutter and extends to the outside of the case, a latch r^2 on the outer end of the pin, and a spring catch *q*, on the outside of the case, provided with a top q^1, q^2, adapted to engage the latch, substantially as and for the purpose set forth. 8th. A convertible camera and graphoscope, comprising in combination, a light tight inclosing case, having an opening *t*, in the front side, an opening *m*, in the line of vision through the opening *t*, a magnifying lens t^1, and a shutter at the opening *t*, a removable light tight cover for the opening *m*, a holder in the case, adapted to hold a strip of sensitized material for the taking of negatives, or a transparency to supplant the sensitized strip, and a removable and replacable diaphragm *r*, at the opening *t*, having an opening through it smaller than the opening *t*, to register with the latter, substantially as described.

No. 41,193. Tapping Cock and Valve. (*Robinet et soupape pour barils.*)

Benjamin James Bacon, Sydney, New South Wales, Australia, 12th December, 1892; 6 years.

Claim.—1st. In cocks for tapping casks or other vessels containing liquid, a tapping cock alike applicable for attachment to a beer engine or pump, and serving the purpose of a draw off or bib cock, provided with a self acting air vent, and having an inner removable

valve chamber provided with a double acting valve and seatings held in position with locking rings or equivalent device, one such locking ring having a strainer or filter attached which will be withdrawn from its position when the valve chamber is taken out of the faucet as described and for the purposes set forth. 2nd. In a tapping cock as described in claim 1, the use of an outer casing or faucet (either with or without a self acting air vent) provided with a driving cap and the alternative or separate use of a cap and union, and cap or bib cock, as described and shown and for the purposes set forth. 3rd. In tapping cocks the use of a removable double acting valve and chamber in combination with a strainer or filter, alike applicable for been engines, pumps, and bib cocks as described and shown. 4th. In tapping cocks the use of a self acting air vent as described and shown.

No. 41,194. Wrench. (*Clé à écrou.*)

William Forgie, Washington, Pennsylvania, U. S. A., 12th December, 1892; 6 years.

Claim.—1st. The combination with a bar having a stationary wrench mounted thereon, of a carriage movable on the bar and a wrench mounted on said carriage. 2nd. The combination, with a bar having a fixed bearing for a wrench handle, of a carriage mounted on a bar and also having a bearing for a wrench handle and devices substantially as described, for moving the carriage on the bar, for the purpose set forth. 3rd. In an apparatus for operating the couplings of drill rods for well boring apparatus, the combination of a segmental rack bar, a carriage fitted thereon and having mechanism, substantially as described, arranged to engage the rack bar and feed or move the carriage by a step by step motion, a stationary wrench and a movable wrench fitted on or connected to the carriage to be moved by the latter, substantially as and for the purpose decribed. 4th. In an apparatus for operating the couplings of drill rods for well boring apparatus, the combination of a segmental rack bar, a carriage fitted thereon, a lever fulcrumed in the carriage, the feeding pawls pivoted to the lever on opposite sides of its fulcrum and arranged to engage the rack bar to feed the carriage with a step by step motion and the wrenches, substantially as and for the purpose described. 5th. In an apparatus for operating couplings of drill rods for well boring apparatus, the combination of a segmental rack bar, substantially T-shaped in cross section, a carriage fitted on said rack bar, and having the inwardly extending flanges, which fit in the recesses in the sides of said bar, a lever fulcrumed in the carriage, the feeding pawls pivoted to the lever on opposite sides of the fulcrum, and arranged to engage the rack bar to feed the carriage with step by step motion, and wrenches, substantially as and for the purpose described. 6th. In an apparatus, for operating the couplings of drill rods for well boring apparatus, the combination, with a segmental rack bar and the wrenches of a travelling carriage, a lever, the feeding pawls carried by the lever, and mechanism, substantially as described, for controlling the feeding pawls to permit them to be temporarily disengaged from the rack bar, when the lever is operated, and allow the carriage to be forced backward a limited distance, under the pressure of the wrenches, substantially as and for the purpose described. 7th. In an apparatus for operating the couplings of drill rods for well boring apparatus, the combination with a rack bar and the wrenches, of a carriage, a lever, the feeding pawls, a supplemental pawl carried by each feeding pawl, and a reversing plate arranged to be lifted vertically to control the supplemental pawls to such an extent that they lift both feeding pawls to temporarily out of engagement with the rack bar during a portion of each movement of the lever, substantially as and for the purpose described. 8th. In an apparatus for operating the coupling of drill rods for well boring apparatus, the combination with the rack bar and the wrenches, of a carriage, a lever carrying the feeding pawls, a reversing plate having cam surfaces, as described, and a spring controlled supplemental pawl carried by each feeding pawl, and riding against one of the cam surfaces on the reversing plate, substantially as and for the purpose described. 9th. In an apparatus for operating the coupling of drill rods for well boring apparatus, the combination, with a rack bar and the wrenches, of a carriage, a lever carrying the feeding pawls, a supplemental pawl pivoted to each feeding pawl, a spring intermediate of the feeding and supplemental pawls, a pivoted reversing plate, having the cam surfaces, against which ride the heels of the supplemental pawls, and an eccentric for lifting the reversing plate vertically, substantially as described. 10th. In an apparatus, for operating the coupling of drill rods for well boring apparatus, the combination of a segmental rack bar, the wrenches, a carriage fitted on the rack bar, a lever fulcrumed in the carriage, the upper and lower feeding pawls pivoted to the lever on opposite sides of its fulcrum, and a lift pin projecting laterally from the lower feeding pawl, substantially as described. 11th. The combination, with a bar, a movable carriage or its equivalent, and a lever having means, substantially as described, which engage said bar to move the carriage, of the supplemental pawls, and a plate against which said pawls ride or impinge, for the purpose set forth, substantially as described. 12th. The combination, with a bar, a movable carriage or its equivalent, and a lever having feeding devices, substantially as described, which engage said bar to move the carriage thereon, of an adjustable plate connected to said carriage, the supplemental pawls attached to the feeding devices on the lever, and riding or bearing against the adjustable plate, as and for the purpose set forth. 13th. The combination, with a rack bar, a sliding part or carriage, and a lever suitably supported on said sliding part or carriage, of the feeding pawls and mechanism, substantially as described, for controlling the movement of said feeding pawls, so as to allow the sliding part or carriage to be moved in either direction by swinging the lever on its fulcrum, as and for the purpose described.

No. 41,195. Machine for Making Paper Bags.
(*Machine à faire des sacs en papier.*)

Samuel Cupples, assignee of James West, both of St. Louis, Missouri, U.S.A., 12th December, 1892; 6 years.

Claim.—1st. The combination with the devices for forming tubular bag sections, of bottoming rolls provided with a creaser blade and gripper devices, substantially as and for the purpose set forth. 2nd. The combination of the tube forming devices of a paper bag machine, of bottoming rolls, one carrying a transverse creaser blade and the other provided with transverse gripper jaws, and means for opening and closing said jaws to receive grip and release a fold of the paper, substantially as set forth. 3rd. The combination with the tube forming devices of a bag machine, of two bottoming rolls, one carrying a creaser blade and the other provided with a recess, and with a blade movable across said recess, and devices for moving the blade to or from one end of the recess, substantially as and for the purpose set forth. 4th. The combination with the tube forming device of a bag making machine, of bottoming rolls, one provided with a transverse blade and the other with gripper jaws, a lever connected with the movable jaws, and adjustable contacts arranged to act upon said lever at different points of the revolution of the roll, substantially as described. 5th. The combination with the devices for forming the tube, of bottoming rolls, one of which is provided with a transverse type 22, and paste feeder roll arranged to make contact with said type, substantially as set forth. 6th. The combination with the bottoming rolls, their creasing blade and gripper jaws, of a paste type 22, arranged adjacent to the creasing blade, substantially as set forth. 7th. The combination with the devices for forming a paper tube, of bottoming rolls, one provided with a punch and the other with a die, substantially as described. 8th. The combination of the devices for forming and feeding a paper tube, of rolls 4, 5, one having a projection pin and the other a die, with a recess to receive said pin, and a chamber below said recess, substantially as set forth. 9th. The combination with the bottoming rolls 4, 5, of a type carried by the said rollers, substantially as set forth. 10th. The combination with the bottoming rolls, of a type carried by one of the rolls, the other provided with a socket, with a yielding block therein, for the purpose described. 11th. The bottoming rolls provided with peripheral annular recesses or gooves, each having a block adjustably secured therein, and supporting part of the operating devices carried by said roll, substantially as set forth. 12th. The combination with the roll 5, having a peripheral recess, of a block fitting said recess and supporting the die, substantially as described. 13th. The combination with the roll 5, its peripheral recess and block, of a type supported by said block, substantially as set forth. 14th. The combination with the rolls 4, 5, having peripheral recesses, of the blocks C, C^1, one supporting a die and the other a punch, substantially as described. 15th. The combination with the roll 4, having a transverse socket, of a detachable block C^2, supporting a part of the bottom forming devices, substantially as described.

No. 40,196. Refrigerator. (*Glacière.*)

Everard Hesketh and Alexander Marcet, of 23 St. Swithin's Lane, London, England, 13th December, 1892; 6 years.

Claim.—1st. In, or for, freezing or chilling meat, or other articles a freezing or chilling room through which travel carriers so that the carcases, or articles, are introduced into, and carried through the said room and delivered therefrom, substantially as hereinbefore described. 2nd. In, or for, freezing or chilling meat, or other articles, a freezing or chilling room through which travel carriers, so that the carcases or articles are introduced into, and carried through the said room and delivered therefrom at the end of the room at which cold air or cooling medium is introduced, substantially as herein before described. 3rd. In, or for, freezing or chilling meat, or other articles, a hanging room and a freezing or chilling room, and a bagging or discharging room arranged in line, or series, with each other with a carrier, or carriers, arranged to carry the meat, or articles, progressively through the said rooms, substantially as hereinbefore described. 4th. The combination with the freezing or chilling room of endless series of carriers passing therethrough so as to carry the carcases or articles, through the said chamber, substantially as hereinbefore described. 5th. The arrangement and combination of parts constituting the means for use in freezing or chilling meat, or other articles, substantially as hereinbefore described and illustrated in the accompanying drawings.

No. 41,197. Vest Shield. (*Renfort de veste.*)

John Francis Bullock, Saint John, New Brunswick, Canada, 13th December, 1892; 6 years.

Claim.—1st. The clasps B and C in combination with the frame work A having curves F and G, and the shield L, having lining M, provided with openings, substantially as and for the purposes

described. 2nd. The clasps B and C in combination with a frame on which is carried a shield, substantially as and for the purposes described. 3rd. The elastic band E and hook H, in combination with the frame work A having the clasps B and C, the curves F and G, and the eye D, and bearing the shield L having the lining M, provided with the openings N, substantially as and for the purposes described. 4th. A shield of cloth lined as described, attached to a wire frame work provided with clasps, and having curves and an eye, is described in combination with an elastic band and hook, substantially as and for the purposes described. 5th. A shield of cloth attached to a bearer having clasps, substantially as and for the purposes described. 6th. The combination of the frame work A, having clasps B and C, curves F and G, and eye D, and bearing the shield L, having lining M, provided with openings N with elastic band E and hook H, having loop I, substantially as and for the purposes described. 7th. The combination of the clasps B^1 and C^1 having the eye D^1, with the bearer A^1 having holes F^1 and G^1 and the elastic band E, having the hook H, substantially as and for the purposes described. 8th. The combination of the clasps B^2 and C^2 with the tubular bearer A^2 have slot R, opening D^2 and caps O and P, which caps are provided with eyes F^2 and the elastic band E, having hook H, substantially as and for the purposes described. 9th. In a bearer for a vest shield, clasps having looped ends, substantially as and for the purposes described.

No. 41,198. Steam Vehicle. (*Voiture à vapeur.*)

Anderson Campbell Marshall, Corunna, Michigan, U. S. A., 13th December, 1892; 6 years.

Claim.—1st. In a vehicle of the kind described, the combination, with the platform, of a liquid fuel reservoir connected within the dash board, an engine and water tank connected below a seat on the front end of the platform, the generator supported below a seat on the rear end of the platform, and the driving mechanism concealed within the hollow floor of the platform, substantially as described. 2nd. In a vehicle of the kind described, a driving mechanism consisting of two hind wheels secured to independent stub axles to which the power is alternately applied, substantially as described. 3rd. In a vehicle of the kind described, a driving mechanism consisting of the two hind wheels secured to independent stub axles, the friction drive wheels M, the connecting rods S, and the vibrating lever Q arranged, substantially as described. 4th. In a vehicle of the kind described, the combination of the following element, the hind wheels secured to independent stub axles, the driving mechanism applied thereto, the reversible friction clutches and their controlling lever, the speed regulating mechanism and its controlling lever, and the brake mechanism and its controlling lever, all said levers arranged in proximity to the driver, substantially as described. 5th. In a vehicle of the kind described, the combination of the following elements, the body of the vehicle carrying front and rear seats, and the hollow platform, the engine and water tank concealed under the front seats, the generator supported under the rear seat and the intermediate driving gear concealed within the hollow platform, substantially as described. 6th. In a vehicle of the kind described, the combination of the following elements, the body of the vehicle, the supporting wheels in front pivotally secured thereto and provided with steering devices, and rear supporting wheels secured upon independent stub axles, and alternating driving mechanism for said stub axles, substantially as described. 7th. In a vehicle of the kind described, the combination, with the body, the rear supporting wheels secured upon independent stub axles, the drive wheels M secured thereto, and the connecting yoke in which the axles are journalled and on which the body is supported, substantially as described. 8th. In a vehicle of the kind descried, a speed regulating mechanism, consisting of the vibrating arm Q, the connecting rods S adjustably secured thereto, and the adjusting lever with its connection for adjusting them from or towards the pivot, substantially as described. 9th. In a vehicle of the kind described, a reversing mechanism comprising the lever U^1, with its intermediate connections and the drive wheels M provided with vibrating levers T, and reversible friction blocks U, substantially as described. 10th. In a steam vehicle, the combination, with the hind wheels secured upon the independent stub axles, of a friction drive gear consisting of the drive wheels M, secured to said axles respectively, vibrating levers T sleeved upon said axles, one for each drive wheel, reversible friction blocks U is secured to the ends of said levers and adapted to make frictional contact with the inner face of the rim of the drive wheel, and a lever controlled mechanism for said friction blocks to throw them in or out of gear in either direction, substantially as described. 11th. In a steam vehicle, the combination with the hind wheels secured upon independent stub axles, of a friction drive gear consisting of the drive wheels M secured to said axles respectively, vibrating levers T sleeved upon said axles, one for each drive wheel, friction blocks pivotally secured to the ends of said levers, a vibrating Q actuated by the motive power, and connecting rods S attached at one end to the opposite arms of the lever Q, and at the other to the vibrating levers respectively, substantially as described. 12th. In a steam vehicle, the combination with the hind wheels secured upon independent stub axles, the drive wheels M secured to said axles respectively and forming a part of a friction drive gear, and brake mechanism applied to said drive wheels, substantially as described. 13th. In a steam vehicle, the combination with the hind wheels secured upon independent stub axles, the drive wheels M, secured to said axles respectively, the vibrating levers T carrying the reversible friction blocks, adapted to engage upon the inner face of the flanges of the drive wheels, and the brake straps Y, adapted to engage upon the outer face of the drive wheels, substantially as described. 14th. In a steam vehicle, the combination with the hind wheels secured upon independent stub axles, of a friction drive gear consisting of the drive wheels M secured to said axles respectively, vibrating levers T sleeved upon said axles and carrying reversible friction blocks U, the reversing mechanism applied to said friction blocks for joint operation by a single lever, the vibrating lever Q to which the power is applied, the connecting rods S slidingly connected to the vibrating lever Q, and the speed regulating mechanism consisting of a suitable lever with connections for slidingly adjusting the connection of the vibrating lever Q, with the connection rods S, substantially as described. 15th. In a steam vehicle, the combination of the hollow platform, the steam generator supported near the rear end of said platform, the rear seat inclosing said generator on top and sides, the liquid fuel burners, the liquid fuel supply pipe concealed in the hollow platform, the liquid fuel reservoir forming the dash board, and the regulating supply valve in proximity to the driver, substantially as described. 16th. The combination of the drive wheel M secured upon the stub axle, the vibrating lever T fulcrumed upon the said stub axle, the reversible friction blocks U secured to the arms of said lever, and adapted to be thrown in and out of contact with the inner face of the flanges of said wheel, the sliding sleeve V, and spring bars V^2, pivotally connecting the sliding sleeve with the friction block, the spiral guide connection between the sliding sleeve and the vibrating lever T, and the lever U^1, with its actuated connection with said sliding sleeve, substantially as described.

No. 41,199. Wool Carding Machine.

(*Machine à carder la laine.*)

James Harley, Beaver Dam, Wisconsin, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. An attachment for wood carding machines, comprising sets of drawing rollers arranged one in front of the other, and a revoluble tube arranged between the sets of drawing rollers and at a right angle there, substantially as shown and described, 2nd. An attachment for wool carding machines, comprising a funnel adapted to gather the wool from the cards, sets of drawing rollers arranged in line with the funnel, and a revoluble tube mounted between the sets of drawing rollers and at a right angle thereto, substantially as shown and described. 3rd. The combination, with a wool carding machine, of a gathering funnel arranged in rear of the doffer and below the centre of the same and its comb, sets of drawing rollers arranged in line with the funnel, and rotated in conjunction with the carding machine, and a revoluble tube mounted between the sets of drawing rollers and at a right angle thereto, and rotated in conjunction with the drawing rollers and the carding machines, substantially as shown and described.

No. 41,200. Pulp Screening Machine.

(*Crible pour la pulpe.*)

Charles Joseph Foster, Westbrook, Maine, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. In a pulp screening machine the combination of the diaphragm D, having metallic packing H, K, as described, the troughs L, with screen plates and tanks all adapted to form a bellows or suction screen without the use of leather flexible packing, substantially as and for the purpose set forth. 2nd. In a pulp screening machine the combination of the diaphragm D, having metallic packing as described, with the air pipes P, having check valve P^1, and regulating valve P^2, operating substantially as and for the purpose set forth. 3rd. In a pulp screening machine the combination of the diaphragm D, having a metallic packing as described, with outlet pipe N, having valves as described, and adapted to operate substantially as and for the purpose set forth.

No. 41,201. Fastener for Thill Loops.

(*Attache pour bracelets de harnais.*)

Henry Rudolph Schnarr, Moline, Illinois, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. A clip for holding thill loops, consisting of the top plate having side flanges curved to conform to the curve of the thill, the said side flanges being extended forward of the top plate and having between them a base plate, the said clip being perforated tot receive the holding screw, substantially as described. 2nd. A clip for a thill loop comprising a socketed main part having a seat for one end of the strap, a shallower extension for the other end of the strap, the spurs and the openings for the screws in the main and extension portions, respectively, substantially as described.

No. 41,202. Time Record Book.

(*Livre de régistre horaire.*)

Henry Wilson Scattergood, Philadelphia, Pennsylvania, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. A sheet for the reception of a fixed or permanent record, and a sheet of less width than the first named sheet by substantially the space to contain the permanent record and marked to

receive a duplicate of sufficient of the permanent record to identify it with the permanent record sheet and adapted to receive a record to be completed by reading in connection with the permanent record, and designed when filled to be disconnected from the permanent record sheet, substantially as described. 2nd. A sheet of a given colour for the reception of a record, which in its nature is fixed or permanent, and a sheet of another colour narrower than the permanent record sheet by substantially the space on the permanent record sheet to be occupied by the permanent record, and to be marked with a duplicate of sufficient of the permanent record to identify it with the permanent record sheet, and adapted to receive a record to be completed by reading in connection with the permanent record, and designed when filled to be disconnected from the permanent record sheet at pleasure, substantially as described. 3rd. A sheet for the reception of a record, which in its nature is fixed or permanent, and having adjoining parallel columns to receive its several items, and a slip sheet narrower than the permanent sheet by substantially the space on the permanent sheet which is to be covered by the fixed record, and supplied with a suitable number of columns on its edge next the record columns of the permanent sheet, which columns are to receive characters or items to identify the slip sheet and its record with the permanent sheet and the record thereon, the two sheets being disunited or separate, substantially as described. 4th. A sheet of unequal thickness, the thicker portion being arranged to receive a record which in its nature is fixed or permanent, and a slip sheet narrower than the first named sheet by substantially the thicker portion thereof, and arranged to receive a duplicate of sufficient of the permanent record to identify the two sheets one with the other, substantially as described.

No. 41,203. Lubricating Packing for the Journals of Railway Cars. (*Graisseur de garniture de tourillon.*)

Butler Edgar, Sunbury, Pennsylvania, and Robert J. Thomas, Alexandria, Virginia, U. S. A., 13th December, 1892; 6 years.

Claim.—1st. As a new article of manufacture, lubricating packing consisting of sections of loose strands or ropes of fibre, knotted or tied to form compressed portions and intermediate expansive portions, substantially as described. 2nd. In car axle lubrication, the combination, with the axles and axle boxes, of fibrous lubricating packing arranged to bear upon the journals, said packing being knotted or tied to form compressed portions, and expansive portions which enlarge to compensate for wear when the fibres are worn through by the journals, substantially as described.

No. 41,204. Type Setting Machine.
(*Machine à composer.*)

John Byron Odell, Horatio N. May and Nathaniel S. Jones, all of Chicago, Illinois, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. In a type setting machine, the combination, with a type box or compartment from which the type are removed one at a time, an operating key having a spring to return it to its normal position, a type carrying lever pivoted at its lower end, and provided with type grasping jaws at its opposite end, an arm seated on the key lever, and normally supporting the carrying lever in a position to grasp the type, and a spring for actuating the type carrying lever to deliver the type at the line way, substantially as described. 2nd. In a type setting machine, the combination, with a type holding compartment from which the type are removed singly, a key lever, a type carrying lever adapted to engage the type, a pendent arm pivoted to the type carrying lever, and loosely bearing on the key lever, a spring to sustain the key lever and through said arm, the type carrying lever in a position to normally engage the type, and a spring to depress the type carrying lever when the key lever is depressed, said loose connection permitting the type to be delivered opposite a line way, and there remain during the continuation of the key lever, substantially as described. 3rd. In a type setting machine, the combination, with a type holding compartment and means for carrying the type therefrom to a common point opposite a line way, a composing table having the line way thereon, and a pivoted and horizontally movable transfer lever, and means for turning said transfer lever on its pivot to engage the type, and for moving the lever with the engaged type, said means being actuated by the key lever whereby to draw the type into the line way, substantially as described. 4th. In a type setting machine, the combination, with a composing table, having a line way formed thereon opposite which the type are delivered singly, a pivoted transfer lever adapted when turned on its pivot to be brought to engage the type, said transfer lever being mounted in a sliding frame, and connections between said lever and frame, and the key lever whereby the movement of the key lever is made to, first, turn the transfer lever to engage the type, and then move the same to draw the type into the line way, substantially as described. 5th. In a type setting machine, the combination, with a type compartment from which the type are moved one at a time, an operating key, a carrying lever for the type actuated by said key, a composing table having a line way thereon opposite which the type are delivered, a pivoted and horizontally movable transfer lever operated by the key lever to draw the type into said line way, and a follower in said line way against which the line is formed, substantially as described. 6th. In a type setting machine, the combination, with a composing table having a line way thereon into the end of which the type are introduced, of a follower against which the line of type is formed, and a lazy tongs loosely connected at one end to the follower, and secured against endwise movement at the end opposite the follower, substantially as described. 7th. In a type setting machine, the combination, with means for delivering the type at a common point opposite a line way, of a transfer device comprising a lever pivoted in a sliding frame, a sliding rod adapted to turn said lever on its pivot to cause it to engage the type, and a lever connected with said rod and actuated by the key lever to withdraw the type into the line way, substantially as described.

No. 41,205. Tidal Motive Power.
(*Roue actionnée par la marée.*)

William Porter and John Drummer, both of Toronto, Ontario, Canada, 13th December, 1892; 6 years.

Claim.—1st. In combination with the canal A, having guideways therein, a float having ears or projections travelling in the guideways, and a water wheel carried by said float substantially as described. 2nd. In combination with the canal A, and the vertical guideways, H, the water wheel C, provided with buckets *c*, and journalled in the standards D, secured to the float E, the friction rollers I and K, situated at the top and bottom of the standards and designed to run in the said guideways H, as and for the purpose specified. 3rd. In combination with a canal A, and the vertical guideways H, the water wheel C, provided with buckets *c*, and journalled in the standards D, secured to the float E, the friction rollers I and K, situated at the top and bottom of the standards and designed to run in the said guideways H, and movable buttons F and G, as and for the purpose specified. 4th. In combination with the canal A, having vertical guideways H, the water wheel C, provided with buckets *c*, and journalled in the standards D, secured to the float E, the movable bottoms F and G, hinged to the float E, and weighted at the outer end, as specified. 5th. In combination with the canal A, the water wheel journalled as specified, the float E, and the movable bottoms F and G, provided with rollers *g*, and the ledge g^1, extending above the roller, as and for the purpose specified. 6th. In combination with the canal A, the water wheel journalled as specified, the float E, and the movable bottoms F and G, provided with rollers *g*, the ledge g^1, and the stops *h* and *i*, arranged as and for the purpose specified. 7th. In combination with the canal A, the water wheel C, float E, and sluice G, extending throughout the width of the canal A, and arranged as and for the purpose specified. 8th. In combination with the canal or sluiceway A, the water wheel C, provided with a sprocket wheel P, the main driving shaft N, the toggle jointed arms L, connecting the shaft of the water wheel with said driving shaft and the gear pinions Q S and T, and sprocket chains *q* and *s*, arranged as and for the purpose specified. 9th. The combination with the canal A, and water wheel C, arranged as specified therein, of the gates U, located at the inner side of the canal, as and for the purpose specified.

No. 41,206. Pump. (*Pompe.*)

Millage M. Smith, Stockdale, Texas, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. In a pump, the combination with the opposite cylinders having open upper ends, the opposite discharge pipes, and the plunger rods extending through the open ends of the cylinders, of the combined guide head and brace encircling and supported by the discharge pipes, and provided with bearings lying directly over the centre of the open ends of the cylinders to receive said plunger rods, and a metallic shield or cap resting upon said combined guide head, and brace over said open upper ends of the cylinders to serve as a covering therefor and protect the same from foreign matter, substantially as set forth. 2nd. In a double cylinder pump, the combination with the cylinders, of the opposite parallel discharge pipes connected with their respective cylinders, and extending centrally above the same, and connected with a main conduit pipe forming a crotch, the plunger rods extending above the top of the cylinders, a horizontal lever or walking beam located in said crotch and vertically adjustable therein upon said discharge pipes, and provided with a series of perforations in each end, swinging connecting links adjustably engaging the ends of said walking beam and pivoted directly to the plunger rods, a pump rod pivoted to one end of said walking beam, a swinging standard, and a pump handle pivoted in said standard and connected with said pump rod, substantially as set forth. 3rd. In a pump of the class described, the combination with the opposite cylinders, and the opposite parallel discharge pipes connected with their respective cylinders and extending parallel to each other above said cylinders, of the metallic clamping band continuously encircling the parallel cylinders and discharge pipes, and U-shaped clasp bolts embracing each cylinder and each discharge pipe, and having their ends clamped to said band, substantially as set forth. 4th. In a double cylinder pump, the combination with the cylinders, the opposite parallel discharge pipes connected at the upper ends by an inverted Y or crotch connection and the plungers, of the vertically adjustable collars mounted upon and adapted to be adjusted on said connection, a fixed pivot rod carried by said collars between said discharge pipes and in the crotch of said inverted Y connection, a horizontal lever or walking beam pivotally mounted upon said rod between said pipes, and connected with each plunger, and means for oscillating said walking beam, substantially as set forth.

No. 41,207. Cut-off. (*Détente.*)

Andrew Wright Knox, New York, State of New York, U.S.A., 13th December, 1892; 6 years.

Claim. The combination, with a liquid receptacle e, having an overflow spout y^1, a service pipe x, leading to said receptacle and adapted to supply it, a cock or faucet x^1 in said pipe, and controlling the flow of liquid through the same, a body a, forming a part or continuation of said service pipe, said body having a passage through it for the flow of the liquid, a normally open valve in said body, and adapted to close the liquid passage through the same, a weight and lever which hold said valve off its seat normally, and an open cup suspended from the lever and arranged under the overflow spout y^1, said cup being adapted to close said valve and stop the flow when it fills and descends, substantially as set forth.

No. 41,208. Water Indicator for Boilers.

(*Indicateur d'eau pour chaudières.*)

William Henry Rogers, Bay Side, New York, U. S. A., 13th December, 1892; 6 years.

Claim.—1st. A device of the character described, consisting of a shell, a receptacle provided with a diaphragm supported by the shell and having an extension projected beyond the shell, the receptacle and its extension being adapted to contain an expansible liquid or gas, a lever fulcrumed upon the diaphragm, and a second lever fulcrumed upon the support of the vessel and actuated by the lever carried by the diaphragh, as and for the purpose specified. 2nd. A water level indicator for boilers, or a thermostat, the same consisting of a vessel adapted to contain an expansible and contractible substance and provided with a diaphragm, and a contact lever connected with the diaphragm, as and for the purpose specified. 3rd. A water level indicator for boilers, or a device adapted for use as a thermostat, the same consisting of a shell, a vessel contained within the shell and provided with an extension projecting beyond the shell, the vessel and its extension being adapted to contain a contractible and expansible substance, a diaphragm constituting a portion of the receptacle, a lever fulcrumed upon the diaphragm, a contact lever actuated by the diaphragm lever and pivoted to the casing near one end, and an alarm mechanism in battery connection with the casing, the circuit being opened and closed by the contact lever, as and for the purpose specified. 4th. In a high and low water indicator for boilers, the combination, with a shell and a tube connected with said shell, and adapted for attachment to the water column of a boiler, of a vessel supported by the shell, provided with an extension projected downward within the tube attached to the water column, the vessel and its extension containing an expansible and contractible material, a diaphragm constituting a portion of the vessel, a lever fulcrumed upon the diaphragm, a second lever pivoted to an adjacent support, independent of the diaphragm and actuated by the diaphragm lever, an alarm mechanism, and a connection, substantially as shown and described, between the levers and the alarm mechanism, whereby upon the expansion and contraction of the diaphragm, as predetermined, an alarm will be sounded, as and for the purpose set forth.

No. 41,209. Pulley. (*Poulie.*)

Henry J. Gilbert, Saginaw, Michigan, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The herein described method of constructing wood pulleys, consisting in having the butts of adjacent spokes and securing them together, and securing together several sets of such spokes with interposed hub blocks and spacing blocks, and fitting them in a previously formed rim section. 2nd. A separable wood pulley having the butts of two adjacent spokes halved and secured together, in the manner described. 3rd. A four spoke separable wood pulley having spokes provided with rectangular butt halved and secured together, in the manner described. 4th. The herein described pulley provided with spokes whose butt ends are halved and secured together, the several sets of spokes being themselves secured together with the interposed hub blocks and spacing blocks, and fitted in the rim section, substantially as described. 5th. The herein described four-spoke pulley provided with spokes having rectangular butt ends halved and secured together, the several sets of spokes being themselves secured together with the interposed hub blocks and spacing blocks, and fitted in the rim section, substantially as described.

No. 41,210. Hot Water Reservoir for Stoves.

(*Réservoir à eau chaude pour poêles.*)

Gilbert T. Brewer, Hoboken, New Jersey, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The combination, with a heating stove, of the hot water reservoir suspended in the upper part of the stove, the outflow and return pipes of a hot water circulating system communicating with said reservoir, a feed pipe to supply the reservoir, and the stand vent pipe connected to the overflow pipe extending above the radiators and open to the atmosphere at the top, substantially as described. 2nd. The combination, with a stove, of the hot water attachment consisting of the water back located in the recess in the inside of the fire box at the level of the fire bed or thereabout, the reservoir suspended in the upper part of the stove from the top, and the circulating pipe connected with the water back and reservoir through the shell of the stove, substantially as described. 3rd. The combination, with a stove, of the hot water attachment consisting of the water back located in the recess in the inside of the fire box at the level of the fire bed or thereabout, the reservoir suspended in the upper part of the stove from the top, a pipe connecting the water back and reservoir, the overflow pipe of a circulating system connected with the reservoir, and the return pipe of said system connected with the water back, substantially as described. 4th. The combination, with a stove, of the hot water attachment consisting of the water back located in the recess in the inner side of the stove at the level of the fire bed or thereabout, the reservoir suspended in the upper part of the stove and connected with the water back by one or more pipes, and the deflector cutting off the direct flow of the heat into the smoke pipe, substantially as described. 5th. The combination, with a stove, of the hot water attachment consisting of the water back located in the recess in the inner side of the stove at the level of the fire bed or thereabout, the reservoir suspended in the upper part of the stove and connected with the water back by one or more pipes, and the self-feeding fuel magazine extending through the reservoir, substantially as described. 6th. In a stove having a hot water reservoir suspended in the upper part, and a self-feeding fuel magazine extending through the reservoir, the said reservoir and magazine made together in one structural device, substantially as described. 7th. The recess b in the lower section of the fire box for reception of the water back extending upward to and being open at the top of said section of the fire box, in combination with the extended flange of the lower end of the upper section of the fire box to cover said opening of the recess, and the circulating pipes connected with the water back through said extension of the flange, substantially as described.

No. 41,211. Foot for Dredge Anchors.

(*Coussinet pour ancres de dragueur.*)

William Pike and Norman McDiarmid, both of Sault de Ste. Marie, Michigan, U.S.A.; 13th December, 1892; 6 years.

Claim.—The combination, with the anchor foot, of an apron hinged to the middle section of the foot, and extending over the adjacent leaves, substantially as described. 2nd. The combination, with the anchor post, of a foot secured thereto, and provided with swinging leaves, substantially as described. 3rd. The combination, with the anchor post, of a foot comprising a rigid middle section secured to the post and swinging leaves hinged to the middle section, substantially as described. 4th. The combination of the anchor post, the foot anchor having hinged leaves thereon, and a cross bar secured to the post and extending into the path of the leaves, substantially as described. 5th. The combination of the anchor post, the foot having swinging leaves, open topped boxes secured to the leaves, and a cross bar secured to the rigid portion of the foot and extending into the path of the boxes, substantially as described. 6th. The combination of the anchor post, the foot having swinging leaves, cables secured to the leaves and extending upward to the top of the post, and the counterbalance secured to the cables, substantially as described.

No. 41,212. Apparatus for Forging Screws by Rolling

(*Machine à fileter les vis.*)

Charles Fairbairn and Matthew Wells, both of Manchester, England, 13th December, 1892; 6 years.

Claim.—1st. In screwing machines, in which the screws are forged between rotary grooved rollers, two opposed rollers having spiral screw forming grooves, formed on an annular band on the face of each roller, and having their axes eccentric to each other, constructed and arranged, substantially as hereinbefore described, and as illustrated by the accompanying drawings. 2nd. In screw forging machines, in which the screws are forged between opposed rotary grooved rollers, the combination with spiral grooves formed on an annular band on the face of each roller, of an annular feeding rim, substantially as hereinbefore described, and as illustrated by the accompanying drawings. 3rd. In screwing machines, in which the screws are forged between rotary grooved rollers, and in which the grooves are formed upon the peripheries of the rollers, dividing each roller transversely into two or more parts, of which the front part only is fixed upon the roller spindle, substantially as and for the purpose hereinbefore described, and as illustrated by the accompanying drawings. 4th. In screwing machines, in which the screws are forged between rotary grooved rollers, and in which the grooves are formed upon the peripheries of the rollers, the combination and arrangement with transversly divided rollers, the front one of which alone is fixed upon the spindle, of a spring tending to resist the longitudinal motion of the back portion or portions of the roller, substantially as hereinbefore described, and as illustrated by the accompanying drawings.

No. 41,213. Wood Trimming Machine.

(*Scierie de recépage.*)

Charles Neracher, Cleveland, Ohio, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. In a wood trimming machine, a reciprocating carriage, a knife sliding in ways thereon, means on the carriage and in

connection with the frame for giving movement to said knife, and means for moving the carriage, substantially as described. 2nd. In a wood trimming machine, a reciprocating carriage, a knife at each end thereof, sliding in ways thereon, means on the carriage and in connection with the frame for giving cutting movement to said knives alternately, and means for moving the carriage, substantially as described. 3rd. In a wood trimming machine, a reciprocating carriage, a knife at each end sliding in ways, and means on the carriage, operated by the movement thereof, in connection with the frame and each of the knives for moving the same, substantially as described. 4th. In combination with a wood trimmer, a horizontally reciprocating cutter, a gauge having a free inner end and having its bearing face in its normal position at right angles to the line of cut, and a curved slot for guiding the outer end of said gauge, said curved slot extending to either side of the normal position of the gauge, said gauge being bevelled from the shearing edge M^1, whereby the said gauge may be adjusted to one side or the other of its normal position without projecting any part of the gauge beyond the path of the knives, substantially as described. 5th. In combination in a trimming machine, a post or gauge having a plain front face, a bevelled edge and a recess on the rear face forming a bearing approximately at right angles to the line of the bevelled face, substantially as described. 6th. In combination with a trimming machine, a swinging gauge and a supplemental gauge carried by the main gauge, and having sliding connection with the outer end thereof, substantially as described. 7th. In a wood trimming machine, means for cutting the wood with a drawing cut, consisting of a reciprocating cross head, knives mounted in outwardly inclined slots in the cross head, angular levers connecting said knives and pivoted upon the cross head, with means for alternately raising and lowering the knives in the slots when the cross head reciprocates, consisting of an arm forming part of the angular levers at one extremity and adjustably pivoted to the cross head guides at the other extremity, substantially as described. 8th. In a wood trimming machine, the main frame or table, supports at either end of the table for a cross head guide, a similar guide at the foot of the table, a cross head adapted to reciprocate in these guides by means of a rack and gear, and provided with slots obliquely diverging, knives guided by these slots and connected by movable pivots with angular levers, a pivot connecting said levers with cross head, and an arm forming part of the said levers at one extremity, and movably pivoted to one of the cross head guides at the other, substantially as described. 9th. In a wood trimmer, means for propelling the knives with both vertical and horizontal movement to obtain a resultant angle of forty-five degrees, consisting in a reciprocating cross head provided with obliquely diverging slots, knives mounted in bearings in said slots, angular levers pivoted to said cross head and adjustably pivoted to the knives at their outer extremities, and an arm forming part of the angular levers at one extremity and adjustably pivoted to one of the cross head guides at the other, in combination with a horizontal table provided with vertical supports for the upper cross head guide, and with vertical shearing edges, substantially as described. 10th. In a wood trimming machine, the cross head supported in upper and lower guides, knives clamped movably in slots obliquely diverging from the base of the cross head, angular levers pivoted to the cross head and pivotally connecting the said clamps, and an arm forming part of the said levers at one extremity and at the other sliding in a bearing pivoted to the upper cross head guide, substantially as set forth. 11th. In a wood trimming machine, a main bed or table, supports at either end of the table for a cross head guide, a similar lower guide upon the bed plate, a vertical shearing edge upon each of the supports, a cross head, moving in said guides, obliquely diverging slots in the cross head, knives sliding in said slots and retained therein by clamps, a rack upon the cross head and pinion mounted upon the bed plate, angular levers connecting the knives, and pivoted to the cross head and an arm forming part of the levers at one extremity, and movably pivoted to the cross head guide at the other extremity, in combination with gauges adjacent to the shearing edges aforesaid, substantially as described. 12th. In a wood trimming machine, a cross head reciprocating in upper and lower guides, a table adjacent to the cross head, knives having an oblique reciprocation derived from the movements of the cross head, vertical edges upon the cross head guide supports inclosing an opening, any guages adjacent to the said opening and provided with vertical shearing edges, substantially as described. 13th. In a guage for a trimming machine, a slotted bed plate, a clamping screw in the outward foot of the gauge and slot, a vertical bevelled inner edge and means for preserving the alignment of the edge of the gauge and shearing edge for the knives, in combination with the auxiliary gauge provided with enlarged head, substantially as described. 14th. In a gauge for a trimming machine, a bevelled inner edge M^1, a bearing between the gauge and the machine frame and the angular depressions Q^1, adapted to register with the bosses Q, upon the supports B, when the gauge is turned back, all substantially as described. 15th. In a trimming machine, a gauge provided with a bevelled edge an extended foot provided with a clamping screw adapted to move in a slot in the machine bed plate, and an auxiliary guage sliding in a recess in the main gauge, an enlarged head to the sliding gauge, and a recess for the head in the main gauge, substantially as described. 16th. In a wood trimmer, a swinging gauge provided with a vertical shearing edge an auxiliary gauge in the base of the main gauge, a head upon the auxiliary gauge, and depressions in the main gauge adapted to receive said head, and a clamping screw passing through the extended base of the main gauge and the clamp for the auxiliary gauge, substantially as described. 17th. In a wood trimmer, a gauge having a shearing edge M^1, a spring R, and projections Q, upon the support B, engaging corresponding openings Q^1 in the gauge, substantially as described.

No. 41,214. School Desk. (*Pupitre d'école.*)

Cyrenius S. Barnes, Elba, Nebraska, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The combination with a desk, of a cylindrical casing depending therefrom and having at one side an extension with a notch and at the other side an ear, a plate pivoted to the ear and having a lip adapted to enter the notch, and a paper ink well adapted to pass upwardly through said casing and through a hole in the top of the desk, and to be supported in place by said plate, substantially as described. 2nd. The combination with a desk, a cylindrical casing depending therefrom, a plate removably closing the lower end of the casing, and a paper ink well adapted to pass upwardly through the casing and through a hole in the top of the desk, of a spring secured to the latter and having a bifurcated free end, a stopper having an ear with a square corner, the ear being pivoted in said bifurcation and the body of the stopped being bored out, and a rubber ball secured in said body and closing the mouth of the well, substantially as described. 3rd. In a desk, the combination of desk standards provided with guides, a desk top, brackets supporting the desk top and provided with pins arranged in said guides, arms pivotally connected to the brackets and having a limited movement on the standards, and means for raising and lowering the arms, substantially as described. 4th. In a desk, the combination of desk standards provided with guides, a desk top, brackets supporting the desk top and provided with pins arranged in said guides and adapted to move therein, arms pivotally connected to the brackets and provided with longitudinal slots, pins projecting from the standards, and arranged in the slots of the arms, and means for raising and lowering the arms, substantially as described. 5th. In a desk, the combination of a standard provided with a guide, a desk top, a bracket supporting the desk top and provided with a pin arranged in said guide, an arm pivotally connected to the bracket and having a limited movement on the standard, an L shaped lever fulcrumed at its angle and having one end connected to said arm, and an operating lever connected to the other end of the L shaped lever, substantially as described. 6th. In a desk, the combination of standards provided with guides, a desk top, brackets supporting the desk top and provided with pins arranged in said guides, arms 34, pivotally connected to the brackets and having a limited movement on the standards, a rod journalled in the standards and provided at one end with an arm 30*a*, rigidly connected to it, an L shaped lever rigidly secured at its angle to the other end of the rod, links connecting the inner ends of the L shaped lever and the arms 30*a* with the arms 34, and an operating lever connected with the outer end of the L shaped lever, substantially as described. 7th. In a desk, the combination of a standard provided with a guide, a desk top, a bracket supporting the desk top and provided with a pin arranged in said guide, an arm pivotally connected to the bracket and having a limited movement on the standard, an L shaped lever fulcrumed at its angle and having its inner end connected with said arm and provided at its other end with a pin, and an operating lever fulcrumed on the standard and provided with a longitudinal slot receiving the pin of the L shaped lever, substantially as described.

No. 41,215. Canule for Tracheotomy.
(*Canule pour trachéotomie.*)

Ernest Hartstein, Göppingen, Wurtemburg, German Empire, 13th December, 1892; 6 years.

Claim.—1st. The improved apparatus for use in tracheotomy constructed substantially as described with reference to the accompanying drawings. 2nd. The herein described apparatus for use in tracheotomy, and comprising two tubes arranged one within the other and each independently removable, extremities of the tubes being respectively attached to plates extending radially in opposite directions, said plates being provided with means whereby they may be fastened to one another or to a cover plate common to both.

No. 41,216. Carriage. (*Voiture.*)

Harlan P. Wells and Osgood Morrill, both of Amesbury, Massachusetts, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. In a two-seated carriage, a front seat divided in the longitudinal line of the body and having a movable section of the body side permanently secured to said halves, respectively, and a set of jumping irons for each said sections of the seat, the same being pivotally attached to the body and seat at their respective ends, whereby the sections of the seat and the sections of the body thereto attached may be jumped forward without turning forward, substantially as specified. 2nd. In a two-seat carriage, a front seat divided in halves *d*, *d*, and having sections *a*, *a*, of the body side secured to their outer ends, and the jumping irons *e*, *f*, pivotally attached to the body and seat sections at their respective ends, substantially as specified.

No. 41,217. Wheeled Scraper. (*Grattoir pour roues.*)

Peter M. Broadfoot, Decatur, Alabama, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The combination, with a wheeled scraper, of the inclined longitudinal and transverse braces having their upper ends connected together and their lower ends secured, respectively, to the tongue and to opposite sides of the scraper frame, and the supporting rod extending vertically from the tongue and passing through the longitudinal brace, substantially as described. 2nd. The combination, with a wheeled scraper, of the inclined transverse braces constructed of a single piece of metal, having its ends secured to the sides of the scraper frame and provided intermediate its ends with a vertically disposed bend, the longitudinal brace having its ends bent horizontally, the front one being secured to the tongue and the rear one to the bend of the transverse braces, plates secured to the upper and lower faces of the tongue, and a vertical rod passing through the longitudinal brace, substantially as described. 3rd. The combination, with a two-wheeled scraper, of inclined transverse braces constructed of a single piece of metal, having its ends secured to the sides of the scraper frame, and provided intermediate its ends with a vertical bend, a longitudinal brace extending upward from the tongue and having its rear end secured to the transverse braces at the bend, a vertical rod, and a bar pivoted at its front end in the bend of the transverse braces and provided at its rear end with a hook adapted to engage the scoop of the scraper to hold the same in an elevated position, substantially as and for the purpose described. 4th. The combination, with a two-wheeled scraper, of inclined transverse braces constructed of a single piece of metal, having its ends secured to the sides of the scraper frame, and provided intermediate its ends with a vertical bend, the inclined longitudinal brace having its rear end secured to the bend and its front end secured to the tongue, the vertical rod, and the bar having its front end pivoted in the bend and provided with a hook arranged at its rear end to engage the scoop, and having a handle, said bar having its rear end engaging the rod, whereby the bar is held in an inclined position, substantially as described

No. 41,218. Armature for Dynamo Electric Machines (*Armure pour machine dynamo-électrique.*)

Sidney Howe Short, Cleveland, Ohio, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. A ring armature, comprising a laminated core, slotted at its opposite edges, forming teeth, bobbins wound between the teeth, and flat magnetic rings secured to the sides of the armature outside of the bobbins, substantially as set forth. 2nd. A toothed armature for a dynamo electrical machine, provided with a flat ring of magnetic material at the ends of the magnetic teeth or bobbin separators, and insulated electrically from said teeth or separator, substantially as described. 3rd. A laminated armature for a dynamo electrical machine, provided with a magnetic bridge between the magnetic teeth or bobbin separators, electrically insulated from said teeth or separators, substantially as described. 4th. An armature for a dynamo electrical machine, comprising a laminated toothed core of ribbon wound upon itself and slotted at the edges, bobbins between the teeth so formed, and flat magnetic rings on opposite sides of the armature outside the bobbins, and insulated from the said teeth, substantially as described. 5th. An armature for a dynamo electrical machine, comprising a laminated core and a flat metal ring or rings outside the bobbins, secured in place by a single row of bare rivets, arranged in a line of equipotential, substantially as set forth.

No. 41,219. Extension Ladder. (*Echelle à rallonge.*)

John Duncan Strumbert, Essex, Ontario, Canada, 13th December, 1892; 6 years.

Claim.—1st. In an extension ladder section, the combination of stiles b, adjustable upon the rungs, rungs b^1, projecting from the stiles slots 2, in the ends of the stiles, the hooks C, secured to the inner face of the stiles near the slots, and the collars D, secured to the stiles to pass around the outer faces thereof near the ends, substantially as set forth. 2nd. In an extension ladder, the combination of stiles b, adjustable upon the rungs, projecting rungs b^1, slots 2, in the ends of the stiles and hooks C, pivoted near each slot, substantially as set forth. 3rd The combination of common ladders A, and an extension section B, having its stiles adjustable upon the rungs, and the latter projecting therefrom, and having the ends of the stiles slotted and provided with hooks C, and collars D, and the rungs with the pivoted stay E, substantially as set forth.

No. 41,220. Motor. (*Moteur.*)

William Crook, sen., Winnipeg, Manitoba, Canada, 13th December, 1892; 6 years.

Claim.—1st. An improved motor for wheel vehicles, consisting of the herein described auxiliary wheels, the divided axle upon which the auxiliary wheels are adjustably superposed in combination with mechanism as described adapted to reinforce the power employed to propel the vehicle, substantially as herein set forth. 2nd. In an improved motor, the herein described auxiliary wheels superposed upon a divided axle, in combination with the threaded sliding block F, the rotatable shaft d, the sprocket wheels h and g^1, chain belts H, the threaded spindle g^{11}, and connecting bars I, all adapted to shift the bearing point of the axle upon the auxiliary wheels, and simultaneously to hold the sections of the divided axle in alignment, substantially as herein set forth.

No. 41,221. Method of and Apparatus for Producing Lead Carbonate. (*Méthode et appareil pour la production du carbonate de plomb.*)

Norman Kelsey Morris and John Winfield Bailey, both of Denver, Colorado, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The herein described method of producing lead carbonate, which consists in confining finely divided metallic lead in a closed chamber, and subjecting the said finely divided lead to the action of cooled hydrous carbonic acid gas and an oxidizing agent, the said gas being generated by the combustion of refined petroleum or its described equivalent, and cooled before entering the said chamber, substantially as described. 2nd. The herein described method of producing lead carbonate, which consists in confining finely divided metallic lead in a closed chamber, and subjecting the said finely divided lead to the corroding action of carbonic acid gas, and acetic acid vapour generated in the said chamber, and to the corroding action of hydrous carbonic acid gas, and acetic acid vapour generated outside the chamber and cooled before entering the said chamber, substantially as described. 3rd. The herein described method of producing lead carbonate, which consists, first, in producing a purified hydrous carbonic acid gas, consisting of carbonic acid gas and chemically produced water obtained by the combustion of refined petroleum or its herein described equivalent, second, cooling the hydrous carbonic acid gas to substantially the temperature herein specified, and, third, acting upon finely divided metallic lead with the cooled hydrous carbonic acid in the presence of an oxidizing agent, substantially as described. 4th. The herein described method of producing lead carbonate, which consists in confining finely divided metallic lead in a closed chamber, and subjecting the said finely divided lead to the corroding action of carbonic acid gas and acetic acid vapour generated in the said chamber, and to the corroding action of hydrous carbonic acid gas generated outside the chamber and cooled before entering the said chamber, substantially as described. 5th. In an apparatus for the production of lead carbonate, the combination with a chamber or stack provided with a perforated partition to form compartments, of a gas inlet and outlet for one of said compartments, a series of removable trays in the upper compartment to support the lead to be converted, a fermenting substance in the lower compartment, and means to heat the lower part of said compartments, substantially as described. 6th. In an apparatus for the production of lead carbonate, the combination with a stack or chamber to contain the lead, of an inlet pipe for the said stack or chamber, a vessel to contain fluid, provided with a tube or pipe extended up through the vessel, of a burner to co-operate with and heat said vessel, and a cooling apparatus located in the inlet pipe, substantially as described. 7th. In an apparatus for the production of lead carbonate, the combination with a stack or chamber to contain the lead, of an inlet pipe for the said stack or chamber, a vessel to contain fluid, provided with a tube or pipe extended up through the vessel, of a burner to co-operate with and heat said vessel, and a cooling apparatus located in the inlet pipe, an outlet pipe for said chamber or stack, and a chimney with which the outlet pipe communicates, substantially as described. 8th. In an apparatus for the production of lead carbonate, the combination with a stack or chamber to contain the lead, of an inlet pipe for the said stack or chamber, a vessel to contain fluid, provided with a tube or pipe extended up through the vessel, of a burner to co-operate with and heat said vessel, and a cooling apparatus located in the inlet pipe, an outlet pipe for said chamber or stack, and a chimney with which the outlet pipe communicates, and a burner located in said chimney, to operate, substantially as described.

No. 41,222. Composition for the Treatment of Fibre, Yarns and Textiles. (*Composition pour le traitement des étoffes.*)

George E. Armstrong, New York, State of New York, U.S.A., 13th December, 1892; 6 years.

Claim.—1st. The new composition of matter, which consists of a mechanical mixture of resin, oil and a carbonate of an alkali, substantially as described. 2nd. The process of disintegrating vegetable fibrous substances, which consists in subjecting them from one to eight minutes, or thereabout, to a highly resinous saponaceous solution, herein described; second, the application of an acidulated bath, and third, washing the material, substantially as and for the purpose set forth. 3rd. The process of disintegrating vegetable fibrous substances, which consists in subjecting them from one to eight minutes, or thereabout, to a highly resinous saponaceous solution, herein described, and the application of an acidulated bath, substantially as and for the purposes set forth. 4th. The process of disintegrating vegetable fibrous substances, which consists in bruising or slightly crushing the plant, and then subjecting it to a highly resinous saponaceous solution, substantially as described. 5th. The process of disintegrating vegetable fibrous substances, which consists in moistening the plant and bruising or slightly crushing the same and then subjecting it to a highly resinous saponaceous solution,

substantially as described. 6th. The process of disintegrating vegetable fibrous substances, which consists in moistening the plant in a slightly acidulated bath, and bruising or slightly crushing the same, and then applying a resolving solution, substantially as described. 7th. The process of disintegrating vegetable fibrous substances, which consists in subjecting them to a highly resinous saponaceous solution, and at the same time rubbing or rolling the material, substantially as described. 8th. The process of disintegrating vegetable fibrous substances, which consists in subjecting them to a resolving solution, then applying an acidulated bath, and then neutralizing the acid of said bath, substantially as described. 9th. The process of disintegrating vegetable fibrous substances, which consists in subjecting them to a highly resinous saponaceous solution, substantially as described. 10th. The process of disintegrating vegetable fibrous substances, which consists in moistening the material in a slightly acidulated bath, and bruising or slightly crushing the same, then subjecting it to a highly resinous saponaceous solution. and rubbing or rolling the material, then the application of an acidulated bath, and then washing the material, substantially as described. 11th. The process of disintegrating vegetable fibrous substances, which consists in moistening the material in a slightly acidulated bath, and bruising or slightly crushing the same, then subjecting it to a highly resinous sapanaceous solution, and rubbing or rolling the material, then the application of an acidulated bath, and then neutralizing the acid of said last named bath, substantially as described.

No. 41,223. Bit Stock. (*Vilebrequin.*)

Oliver R. Alden, Nicholson, Pennsylvania, U.S.A., 13th December, 1892 ; 6 years.

Claim.—1st. In combination with a tool holder and a bow, the reversible and reversely acting pawls and intermediate connections, substantially such as shown, between the pawls and the tool holder, whereby a continuous motion in either direction may be imparted to the holder by the oscillation of the bow. 2nd. In combination with the handle and with the bow of a bit stock, a tool holder adapted to turn therein and provided with fast and loose ratchets and gear wheels, the idler, and the reversible pawls. 3rd. In combination with the handle, bow, tool holder, and fast and loose ratchets, the fast and loose gears upon the tool holder, the idler, the pawls or dogs for engagement with the ratchets, and the stop gears thereon. 5th. In combination with the handle, bow, tool holder, and fast and loose ratchets, the fast and loose gears and idler, the pawls or dogs provided with meshing gears, and the coiled springs. 6th. In combination with the handle, bow, tool holder, and fast and loose ratchets, the fast and loose gears and idler, the pawl L provided with gear *e*, and the pawl M provided with a similar gear *e* and with a tail or handle *f*.

No. 41,224. Wrench for Pipes. (*Clé à tuyau.*)

J. W. Allen, Richford, and Duncan McLachlan, Groton, assignees of George Stephen Hilts, of Groton aforesaid, all of the State of New York, U.S.A., 14th December, 1891 ; 6 years.

Claim.—1st. In a pipe wrench, the combination with the internally threaded sleeve, the dog pivoted upon an arm extending from the outer end thereof, and the chain connected thereto, of a screw threaded handle inserted through the sleeve and engaging with the dog. 2nd. In a pipe wrench, the combination with the internally threaded sleeve, the screw threaded handle inserted therein, and the chain connected to the sleeve, of the toothed dog pivoted upon an arm projecting from the outer end of the sleeve and having its free end adapted to engage with a link of the chain. 3rd. In a pipe wrench, the dog, consisting of a body, and an insertable toothed segment. 4th. The combination with the internally threaded sleeve, and the chain connected thereto, of the dog pivoted upon an arm extending from the outer end thereof, its free end adapted to engage with a link of the chain, and the screw threaded handle inserted through the sleeve and engaging with the said dog.

No. 41,225. Chopping Knife. (*Couperet.*)

J. W. Allen, Richford, and Duncan McLachlan, Groton, both in the State of New York, U.S.A., 14th December, 1892 ; 6 years.

Claim.—1st. A blade for a multiple bladed chopping knife having a vertical inner edge, a main cutting edge and an auxiliary cutting edge upon the lower inner corner cut away, substantially as shown. 2nd. A multiple bladed chopping knife, comprising a shank, a head thereon, and multiple blades having their vertical inner edges secured therein, and having their lower inner corners cut away and sharpened, and having cutting edges along their lower edges exterior to the cut away portion, in combination as set forth. 3rd. The combination, with the head of the blades, having their vertical inner edges secured therein, and having their lower inner corners cut away to create a recess below the head, and having their lower edges sharpened, as set forth. 4th. A blade for a multiple blade chopping knife, provided with substantially vertical slot ways, and a central recess in its lower cutting edges, as set forth. 5th. A blade for a multiple blade chopping knife, having an inner, substantially vertical edge, a lower cutting edge, and having its lower inner corners cut away, as set forth.

No. 41,226. Method and Means of Making Lasts.

(*Méthode et moyen de faire les formes.*)

George Wickford Willey, Athol, and Albert Barrows, Brockton, both in Massachusetts, U.S.A.. 14th December, 1892 ; 6 years.

Claim.—1st. The improved method hereinbefore described, of making individual lasts for boots and shoes, the same consisting in first making a divided matrix conforming to the shape of the foot, and composed of separable sections, enlarging the matrix at the toe, and at the margin of the sole to form an angle defining the contour of the sole, and filling the matrix with a composition which, when hardened, constitutes a cast or pattern which is a fac simile of the foot with the additions caused by the enlargement of the matrix, as set forth. 2nd. The improved method hereinbefore described, of making individual lasts for boots and shoes, the same consisting in first making a divided matrix conforming to the shape of the foot, and composed of separable sections, enlarging the matrix at the toe, and at the margin of the sole to form an angle defining the contour of the sole, filling the matrix with a composition which, when hardened, constitutes a cast or pattern which is a fac simile of the foot, with the additions caused by the enlargement of the matrix, and finally softening the toe portion of the cast, and reforming the same by inserting it in a supplemental mould or matrix, as set forth. 3rd. The improved method hereinbefore described, of making individual lasts for boots and shoes, the same consisting in making a pat-pattern which is longer than the foot, but otherwise is substantially a fac simile thereof, then building up or enlarging the instep portion of the pattern, and then turning from said pattern a last which in cross section is a reduced fac simile of the pattern, as set forth. 4th. The improved foot matrix flask, consisting of a bottom section, and a top section separable from the bottom section, said flask having sides and being thereby formed to contain a mass of material surrounding the foot, and provided with an unyielding curved bottom or pattern, former adapted to impart the desired curvature to the bottom of human foot, and to the material interposed between said curved bottom and the bottom of the foot, whereby said flask is adapted to retain the pattern so formed in proper position for casting, substantially as and for the purpose set forth. 5th. In a foot matrix flask, the combination of the bottom section, the top section hinged to the bottom section, the presser or follower in the top section, and means for operating said presser, as set forth.

No. 41227. Drum. (*Tambour.*)

James W. Pepper, assignee of A. G. Soistmann, both of Philadelphia, Pennsylvania, U.S.A., 14th December, 1892 ; 6 years.

Claim.—1st. A drum provided with heads B, which are grooved to receive the wires or cords E, formed with openings for the fastening screws C, and caps M, which cover the portion of the cords within said heads, and are connected with the head by means of said screws, substantially as described. 2nd. A drum provided with sockets J, having feet K, screws J', passed through said sockets, nuts G fitted to said screws, hooks F on said nuts, heads B connected with the side of the drum, and wires or cords E passing from the said hooks to said heads and connected therewith, substantially as described. 3rd. A drum having tightening wires or cords E, connected alternately with hooks F and heads B on the side of the body, said heads receiving portions of said wires or cords, and are provided with caps M to retain the wires in place, said hooks being attached to nuts F, which are engaged by screws H, the latter being swivelled in sockets J, attached by feet K to the upper and lower bands of the drum, substantially as descriced.

No. 41,228. Brick. (*Brique.*)

James Bougham West, and the firm of Taylor Bros., all of Toronto, Ontario, Canada, 14th December, 1892 ; 6 years.

Claim.—As a new article of manufacture, a brick coated with a solution composed of litharage lead, cryolite, borax, or similar ingredients mixed with flint, sand, clay or light material in the proportion of about ten parts of the former to four parts of the latter, substantially as and for the purpose specified.

No. 41,229 Steam Trap. (*Trappe de vapeur.*)

Alvin P. Clark and Leonard H. Buttrey, both of the town of Dundas, Ontario, Canada, 14th December, 1892 ; 6 years.

Claim—In a steam trap, a pipe A, of any desirable diameter and length, having a steam inlet through the base H, and the upper end provided with screwed plug B, having suspended therefrom a vertical brass tube *c*, with upper adjustable extension *c*, the lower end of said tube forming a valve F, to the aperture D, in the plug or pipe E, screwed into the lower end of said vertical pipe A, substantially as and for the purpose hereinbefore set forth.

No 41,230. Machine for Punching and Shearing Nuts. (*Machine à percer et cisailler les écrous.*)

Julius Altmann, Milwaukee, and William Maxwell, Waupun, both in Wisconsin, U.S.A., 14th December, 1892; 6 years.

Claim.—1st. The combination, with a frame and a shearing plate thereon, of a shearing punch reciprocable endwise in the frame and cams on revolving shafts, which cams actuate the shearing punch, substantially as described. 2nd. The combination, with a

frame and a shearing plate fixed thereon, of a reciprocable shearing punch, a reciprocable core punch, and cams on revolving shafts, actuating the shearing and core punches, substantially as described. 3rd. The combination, with a frame and a shearing plate fixed thereon, of a reciprocating shearing punch, a reciprocating core punch, a reciprocating clearing punch, and cams on revolving shafts actuating the several punches, substantially as described. 4th. In a shearing and punching machine, a shearing plate fixed on the frame, which shearing plate has an aperture of the form and size of the nut blank to be produced, and a recess or channel radiating therefrom in the face of the plate for receiving the metal bar of material therein, substantially as described. 5th. In a shearing and punching machine, the combination, with a frame and revolving shafts fixed therein, of wheels secured in pairs opposite each other on the shafts, which wheels are provided with corresponding cam grooves in their peripheries, a punch stock reciprocable endwise in the frame between cam wheels, and arms fixed on the punch stock, and riding in the cam grooves in the wheels, substantially as described. 6th. In a shearing and punching machine, a reciprocating punch stock, arms secured thereto, anti-friction wheels axled thereon and rotating at right angles to the axis of the arms, and wheels on revolving shafts having cam grooves in their peripheries, in which the friction wheels on the arms travel, all combined, substantially as described. 7th. In a shearing and punching machine, a fixed shearing plate, a reciprocable clearing punch arranged to enter the shearing plate from the rear, and a core punch reciprocable on the frame and through the clearing punch, in an aperture therefor, combined, substantially as described. 8th. In a shearing and punching machine, a punch, a stock therefor formed in two parts, longitudinally and transverse arms formed in two parts, bolted together about the punch stock, and clamping the parts of the punch stock to each other, substantially as described.

No. 41,231. Method of and Apparatus for Feeding to Magnetic Separators. (*Méthode et appareil pour alimenter les séparateurs magnétiques.*)

Jonas Wenstrom, Orebo, Sweden, and Olof Wenstrom and William W. Manning, both of Marquette, Michigan, U.S.A., 14th December, 1892; 6 years.

Claim.—1st. The method of feeding to a magnetic separator, which consists in successively exposing the body of material to the separator during its passage through the machine, substantially as described. 2nd. The method of feeding to a magnetic separator, which consists in successively exposing the body of material to the separator at different distances therefrom during its passage through the machine, substantially as described. 3rd. The method of feeding to a magnetic separator, which consists in successively presenting the body of material to the separator and at the same time removing the magnetic portions thereof in a direction opposite to the general direction of travel, substantially as described. 4th. A feed mechanism for magnetic separators provided with devices for successively presenting material to the separator during its passage through the machine, substantially as described. 5th. A feed mechanism for magnetic separators provided with devices for successively presenting the material to the separator, the presenting devices being arranged at different distances from the separator, substantially as described. 6th. A feed mechanism for magnetic separators provided with rolls for presenting the material to the separator, and suitable means for moving said rolls in such manner as to present the material against the direction of the travel of the armatures of said separators, substaintially as described. 7th. A feed mechanism for magnetic separators provided with a series of presenting rolls for successively presenting the material to the separator during its passage through the machine, substantially as described. 8th. A feed mechanism for magnetic separators provided with presenting rolls arranged at different distances from the armatures of the separators, substantially as described. 9th. A feed mechanism for magnetic separators provided with presenting rolls, and a carrier belt passing over said rolls, substantially as described. 10th. A feed mechanism for magnetic separators provided with presenting rolls, a pulley intermediate said presenting rolls, and a drum and a carrier belt passing around said presenting rolls, said intermediate pulley and said drum, substantially as described. 11th. A feed mechanism for magnetic separators, provided with a series of presenting rolls adjustable with respect to the separator, substantially as described. 12th. A feed mechanism for magnetic separators, provided with a series of adjustable presenting rolls, a carrier bolt, and an adjustable drum, over which said carrier belt passes, substantially as described. 13th. A feed mechanism for magnetic separators, provided with presenting rolls, adjustable journal bearings for said presenting rolls, a drum and adjustable bearings for said drum, screw shafts for adjusting said bearings, and a carrier belt passing over said rolls and said drum, substantially as described. 14th. A feed mechanism for magnetic separators comprising a carrier bolt, suitable rolls over which said carrier belt passes, a delivery hopper at one end of said carrier belt, and a supplemental delivery hopper at the opposite end of said carrier belt, substantially as described.

No. 41,232. Jack for Vehicles. (*Chèvre de carrosserie.*)

John Bell, Toronto, Ontario, Canada, 14th December, 1892; 6 years.

Claim. 1st. The combination of the lever C, and the washer D. 2nd. The combination, with the lever C, and the washer D of the flat sliding shaft, and head E, E, substantinlly as and for the purpose hereinbefore set forth.

No. 41,233. Tool for Working Wire.

(*Outil pour travailler le fil de fer.*)

James Heard, Delta, Colorado, and Henry W. Le Roy, New York, State of New York, U.S.A., 14th December, 1892; 6 years.

Claim. 1st. The combination, in a pair of nippers, of the two curved jaws, one of which has its exterior surface roughened to form a fulcrum, while the other has a claw formed on its exterior, substantially as described. 2nd. The combination, in a pair of nippers, of the two curved jaws, one of which has its exterior surface roughened to form a fulcrum, and the cam gripping device mounted on the exterior of the other jaw, substantially as described. 3rd. The combination, in a pair of nippers, of the two curved jaws, one of which has its exterior surface roughened to form a fulcrum, while the other has a claw formed on its exterior, and the ring attached to the handle of that nipper jaw which has the roughened exterior, substantially as described. 4th. The combination, in a pair of nippers, of the two curved jaws, one of which has its exterior surface roughened to form a fulcrum, and the cam gripping device mounted on the exterior of the other jaw, together with the ring attached to the handle of that nipper jaw which has a roughened exterior, substantially as described. 5th. In a pair of nippers, the combination of the two curved jaws which have considerable portions of their abutting faces left with broad opposing surfaces, while the remaining portions are cut away so as to form a recess and a pair of sharp pointed projections, substantially as described. 6th. In a pair of nippers, the combination of the two curved jaws which have considerable portions of their abutting faces left with broad opposing surfaces, while the remaining portions are cut away so as to form a recess and a pair of sharp pointed projections, one of the said jaws having its exterior surface roughened to form a fulcrum, a claw formed on the exterior of the other jaw, and a cam grip mounted behind said claw, the shearing recesses formed in the jaws of the nippers near the pivot by which they are connected, and the ring mounted in the handle, substantially as described.

No. 41,234. Extractor for Honey.

(*Appareil pour extraire le miel.*)

E. L. Gould & Co., assignees of William Bayless, all of Brantford, Ontario, Canada, 14th December, 1892; 6 years.

Claim.—1st. In a honey extractor, the combination with the revoluble shaft, of cross piece loosely mounted on said shaft, rods connecting said cross pieces, comb baskets L, journalled on the rods, and means fixedly connected to the shaft for changing the position of the baskets L, when the motion of the shaft is reversed, all substantially as set forth. 2nd. In a honey extractor, the combination with the tank B, of a rotary shaft D, suitably mounted therein, a frame loosely journalled on the shaft D, comb baskets L, centrally pivotally connected to the frame, and provided with bottom having horizontal slits R, or passages, and a spider fixedly connected to the shaft D, and provided with ends engaging with the slits in the bottom of the comb baskets, substantially as described.

No. 41,235. Carriage. (*Voiture.*)

Harlan P. Wells and Osgood Morrill, both of Amesbury, Massachusetts, U.S.A., 14th December, 1892; 6 years.

Claim. 1st. In a two seat vehicle, the combination of a rising and falling seat, a hinged tail board, and a seat back formed to also serve as a deck panel and hinged both to the seat and tail board in manner to be closed down as a deck panel by the closing of the tail board and to be raised into position as a seat back by the opening of the tail board, substantially as specified. 2nd. In a two seat vehicle, the combination of tail board *c*, pivoted to the body, back *t*, pivoted to said tail board, and the rising and falling seat *h*, pivoted to back *t* by the rigid angle iron *p*, whereby the opening and closing of the tail board will automatically raise and lower said seat back and will raise and lower said seat, substantially as specified. 3rd. The combination of seat *h*, supported by irons *i*, *j*, pivoted to said seat and to the body, tail board *c*, pivoted at its lower edge to the body *t*, connected with said seat by pivot *q*, in seat iron *p*, and also pivoted at 2 to said tail board, all substantially as specified.

No. 41,236. Furnace. (*Fournaise.*)

Elbert S. Rogers, assignee of George R. Scates, both of Knoxville, Tennesee, U.S.A., 14th December, 1892; 6 years.

Claim.—1st. In combination, with a heating furnace, the communicating flues, drums, radiators, &c., provided with terminal outlets having caps or closures, substantially as specified. 2nd. In combination, with a heating furnace, the side heating flues or radiators, communicating at their front ends with common boxes, having doors opposite the front ends of said flues or radiators, whereby the accumulations in the latter may be collected in said boxes, substantially as specified. 3rd. In a furnace, the combination, with the fire box, heating drums, and connecting flues between the fire box and one of the drums, of the side flues or radiators, forming the connection between said drums, and the soot boxes interposed at intermediate points of said flues, and provided with doors arranged opposite and in alignment with the members or parts of said flues, substantially

as specified. 4th. In a furnace, the combination, with a fire box and heating drums, one of which communicates with the fire box, and the other of which communicates with the smoke flue, of side flues, or radiators, connecting the said drums, and soot boxes arranged at intermediate points of said flues or radiators and provided with doors opposite and in alignment with the parts or members of the flues, substantially as specified. 5th. In a furnace, the combination, with the fire box, the parallel, transversely disposed drums, one of which communicates with the fire box, and the other with the smoke flue, and approximately parallel side flues or radiators, arranged in pairs, one member of each pair communicating with one of said drums and arranged at their front ends in proximity, of the soot boxes forming the connection between the front ends of the adjacent members of each pair, and provided with doors arranged opposite and in alignment with the members of each pair of flues, substantially as specified. 6th. In a furnace, the combination, with the fire box, of the heating drums, disposed horizontally in the enclosing wall of the furnace, and provided with terminal outlets provided with caps or closures, and the side flues or radiators connecting said drums, substantially as specified.

No. 41,237. Index. (*Index.*)

Frank Lewis Parker, assignee of Henry Stephens Bacon, both of Worcester, Massachusetts, U.S.A., 14th December, 1892; 6 years.

Claim.—1st. In a device of the character described, the combination of the base having two ledges, of the leaves pivoted between said ledges, the axis of said leaves being inclined relatively to the base, whereby the leaves will remain open at any desired point, substantially as described. 2nd. In a device of the character described, the combination of the base having two ledges, of the binders E, each consisting of a piece of metal bent to V shape form, of the leaves the edges of which are inserted within and held by said binders, and a pin passing through each ledge into each binder, said pins thereby forming pivots for the binders, and thereby by the removal of the pins, the binders and leaves may be removed, substantially as described. 3rd. In a device of the character described, the combination of the base having two ledges, the binders E consisting of a piece of metal bent to V shape form, of the leaves, the edges of which are inserted within, and held by said binders, of the pins passing through the said ledges into the binders, and forming pivots for the leaves, the leaves being cut away, as at *c* to clear the pins, substantially as described. 4th. In a device of the character described, the combination of the leaves, means for pivoting the same, so that the leaves will stand in substantially vertical planes, said leaves being made out of stiff material, said leaves having body portions for the subject matter, indexes on the edges of the same, and advertising spaces above and below the subject matter spaces, substantially as described.

No. 41,238. Brake. (*Frein.*)

Henry Shaw and Edward Shaw, both of Sydney, New South Wales, Australia, 14th December, 1892; 6 years.

Claim.—1st. In fluid pressure automatic brake mechanism, the use of an automatic self releasing exhaust air valve comprising a primary piston operating a slide valve for opening and closing passages communicating with a double and single valve, for the purpose of utilizing the air which has been used for putting pressure on the brake to take the pressure off the brake, such primary piston passages, and valves, being severally connected with the continuous connection pipe, auxiliary reservoir, brake cylinder, and release cylinder, substantially as described and shown. 2nd. In fluid pressure automatic brake mechanism, the use of a hand brake shunting valve comprising a double seated valve for actuating a single seated valve, and an eccentric operated by a lever, such valve being interposed between the auxiliary reservoir and the automatic self releasing exhaust air valve (referred to in claim 1) as described and shown, and for the purposes set forth. 3rd. In fluid pressure automatic brake mechanism, the use of a double cylinder, consisting of a brake pressure cylinder and a brake release cylinder, the air for operating the piston in the latter being obtained from the former, as described and shown in figures 4, 5, 6 and 7. 4th. In fluid pressure automatic brake mechanism, the use of an automatic self releasing exhaust air valve, in combination with a hand brake shunting valve, and a double cylinder comprising a brake pressure cylinder and a brake release cylinder, for the purpose of utilizing the air which has been used for putting pressure on the brake to take the pressure off the brake, such mechanism being severally connected with the continuous connection pipe and auxiliary reservoir, substantially as described and for the purposes set forth.

No. 41,239. Doll Support. (*Support pour poupées.*)

Alfred B. Wilcox, Chicago, Illinois, U. S. A., 14th December, 1892; 6 years.

Claim. 1st. The combination with a suitable base and a standard thereon provided with a guide, of a pair of vertically movable spring arms extending upward through said guide and adapted to be sprung away from each other above the same, whereby the upward movement of said arms to extend them vertically makes them capable of a wider separation laterally, substantially as described. 2nd. The combination with a base and standard supported thereby provided with a suitable guide, of a spring clasp composed of a piece of metal bent upon itself to form a double portion adapted to slide up and down in said guide, and two oppositely arranged arms, extending from the tops of the respective members of said double portion, substantially as described.

No. 41,240. Stock Car. (*Char à bestiaux.*)

Ferdinand E. Canda, New York, State of New York, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. The combination in a cattle car, of a ceiling supported at the car lines, inclined struts extending from the side posts to the ceiling, the same forming fodder compartments and racks a tank at the roof of the car, lateral pipes extending from said tank, distributing pipes outside of the roof, and ranging longitudinally thereof, said distributing pipes being connected with the lateral pipes, delivery pipes extending from said said distributing pipes to the troughs, a series of troughs hinged to a rod, said troughs being movable independently of each other, or movable simultaneously by the rod, and guards secured to the side posts of the car, adjacent to the troughs, substantially as described. 2nd. In a cattle car, the combination with the car roof the carlines, and the ceiling, of inclined struts extending from the carlines to the side posts, whereby the car is strengthened, space provided for hay, and the struts rendered available as parts of the hay rack, substantially as described. 3rd. In a cattle car, the combination with the carlines, side posts, of inclined struts, rack bars, and ceiling boards, as herein shown and described, whereby fodder chambers and fodder racks are provided between the several carlines, without the loss of head room as set forth. 4th. In a cattle car, the combination with the carlines formed with cut away sections, of strips at the sides thereof, and traps hinged to the roof and supported on said strips, substantially described. 5th. The combination with a cattle car, of a water system, consisting of a tank or receiver at the roof, lateral pipes connected therewith, distributing pipes ranging outside of the car roof, and connected with said lateral pipes, and delivery pipes extending from said distributing pipes, to the troughs, substantially as described. 6th, In a cattle car, the combination with a series of water troughs, each hinged to turn independently of the others, of a rod or bar and arms carried thereby and arranged to engage the several troughs, substantially as described. 7th. In a cattle car, the combination with a rod mounted to turn upon its connections with the car, of a series of troughs hinged to the rod, projections which extend from the rod and engage the troughs, and means for turning the rod, substantially as described. 8th. In a cattle car, the combination with the posts of guards, secured adjacent to the troughs and forming protectors for said troughs, substantially as described.

No. 41,241. Arc Lamp. (*Lampe à arc.*)

Luther Hamilton Buchanan, Pasadena, California, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. In an arc lamp, the combination with two sector shaped carbons, of supporting and carrying arms therefor, one of said arms being pivoted to a support, the centre of the pivot and the inner ends of the radi of both sectors being in alignment. 2nd. In an arc lamp, the combination with two sector shaped carbons of pivoted supporting and carrying arms therefor, the centre of the circle of which the carbons are sectors being in line with the centre of motion of the arms, and gearing between the said arms, substantially as described. 3rd. In an arc lamp, the combination with two sector shaped carbons, of pivoted carrying arms therefor, the centre of the circle described by the carbons being in line with the centre of motion of the arms, gearing between the said arms, a wheel carried by the shaft of one arm, a magnet and armature for moving said wheel in one direction, and spring for moving the shaft and wheel in the other direction, substantially as described. 4th. In an arc lamp, the combination with a pair of carbons, one of which is connected to an arm carried by a rotary shaft, of a wheel on said shaft, a magnet having a portion of its armature engaging the periphery of said wheel, and a spring for rotating said shaft, substantially as described. 5th. In an arc lamp, the combination with a pair of carbons, one of which is connected to an arm carried by a rotary shaft, of a wheel secured to said shaft, and having an elastic periphery, and a magnet having its armature engaging said periphery, substantially as described. 6th. In an arc lamp, the combination with a pair of carbons, one of which is connected to an arm carried by a rotary shaft, of a wheel secured to said shaft and having an elastic periphery, a magnet having its armature engaging said periphery, a sleeve adjustably secured to the said shaft, and a spring having one end secured to the sleeve and the other end to the frame, substantially as described. 7th. In an arc lamp, the combination with a pair of carbons, one of which is connected to an arm carried by a rotary shaft, of a wheel secured to said shaft, main and shunt magnets in the circuit of the lamp, a pivoted armature having a wing for each magnet, and an extension engaging the periphery of the wheel, and an adjusting screw each side of the pivot of the armature, substantially as described. 8th. In an arc lamp, the combination with the frame of the bracket J, having insulated arms 1, 2, 3 and 4, a shaft journalled in the lower arms 3 and 4, and having an arm carrying a carbon, a shaft journalled in the upper arm 1 and the frame, and having an arm carrying the other carbon, a bevel pinion on each shaft, and an

intermediate pinion of insulating material meshing with said shaft pinions and journalled in the arm 2 of the bracket, as set forth. 9th. A cut out for arc lamps, consisting of main and shunt coils in the circuit, a metallic bar extending from one coil to another, but insulated therefrom, an armature of the main coil connected to the main circuit, and having an extension adapted to make contact with one end of the said bar, and an armature of the shunt coil connected also to the main circuit, and adapted to make contact with the other end of said bar when released by the core of said shunt coil, substantially as described. 10th The combination with the coils A and B of the bar or strip A^1, the pivoted strips a^2 and b^2, the former having an extension a^4, and connections from the two pivoted strips to the main circuit, substantially as described.

No. 41,242. Tree and Wood Sawing Machine.

(*Machine à Scier les arbres et le bois.*)

Ole Olsen, Wimbledon, New Zealand, 15th December, 1892; 6 years.

Claim.—1st. The combination of the double throw crank, connecting rods, rocking shaft lever with sliding bearings and swivel attachment, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of spring feed gears and semi-circular bow, with a saw frame, substantially as and for the purpose hereinbefore set forth.

No. 41,243. Locomotive Boiler.

(*Chaudière de locomotive.*)

Lewis Woodard Lester, Glencoe, Minnesota, U.S.A., 15th December, 1892; 6 years.

Claim. 1st. In a steam boiler, the combustion chambers D and F, located at the respective end portions of the boiler, the former being partially inclosed thereby, the external flue C, leading to the chamber D, and the internal flues *a* and *b*, and a smoke box G, extending along the entire rear of the boiler, and into which lead the upper flues, the parts being so arranged that the gases of combustion are caused to pass first from the fire box, externally of the boiler, to the chamber D, thence through the flues *a*, to the chamber F, and thence through the flues *b*, to the smoke box G, substantially as specified. 2. A steam boiler, having a combustion chamber F, at its front portion, and communicating with the upper and lower flues, and a mud and heating drum for the feed water within said chamber, and secured to the front wall thereof, whereby it is subjected on three sides to the gases in said chamber, substantially as specified. 3rd. A boiler having a combustion chamber D, at its lower rear portion, into which open the lower flues, a smoke box G, extending across the entire rear of the boiler, and separated from the chamber D, at its lower portion, by a water chamber forming a part of the water jacket, an external flue leading from the fire box to the chamber D, a second smoke or combustion chamber at the front, into which open both the upper and lower flues, and a mud and heating drum for the feed water in said chamber, and secured tothe front wall thereof, substantially as specified.

No. 41,244. Means for Cleaning Filtering Surfaces.

(*Moyen de nettoyer les surfaces à filtrer.*)

Marshall McDonald, Washington, Columbia, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. The within described improvement in cleansing the surface of filtering mediums, the same consisting in maintaining a body of sand in contact with the entire filtering surface, and moving it at intervals as a solid body over said surface, substantially as set forth. 2nd. The within described improvement in cleansing the surface of filtering mediums, consisting in maintaining a body of sand with the water to be filtered against the filtering surface, withdrawing particles of sand at intervals from the said body at one end and carrying them away from the filtering surface to the opposite end, thereby moving the entire body as a solid mass against the filtering surface, substantially as set forth. 3rd. The within described improvement in cleansing filtering mediums, the same consisting in subjecting the outside of said medium to the action of an abrading material, and simultaneously increasing the internal pressure, substantially as set forth. 4th. The within described improvement in cleansing filtering mediums, the same consisting in acting upon the outer surface of the filtering medium to cleanse the same while maintaining a superior pressure upon the opposite side, substantially as set forth. 5th. The combination, in a filter of a filtering medium, separating the receptacles for the unfiltered and the filtered water, a body of sand lying in contact with the filtering surface, and means for moving said body as a mass over the entire filtering surface, substantially as described. 6th. The combination, in a filter, of receptacle for filtered and unfiltered water separated by a filtering medium, a body of sand in the unfiltered water receptacle lying in contact with the filtering surface, a water channel extending from below to the top of said body, and means for creating an upward circulating current through said channel to convey the particles of sand from the bottom to the top of the body, away from contact with the filtering surface, substantially as set forth. 7th. The combination in a filter, of chambers separated by a filtering medium, a body of sand lying against the filtering surface in one of the chambers, and an independent channel communicating with the top and bottom of the sand chamber, and a nozzle far directing a current of water upward through said channel, substantially as set forth. 8th. A filter provided with chambers for the filtered and unfiltered water separated by a filtering medium, means for acting upon the filtering surface to cleanse the same, and means for creating a preponderating pressure at desired intervals upon the opposite side of the filtering medium, substantially as set forth. 9th. The combination with the casing, filtering medium and body of sand, in contact with the filtering surface, of an independent channel for the passage of the upward current of the water, and a nozzle below said channel, substantially as set forth. 10th. The combination of a casing, cylindrical filtering medium, surrounding body of sand and a vertical channel within the filtering medium and the nozzle below said channel, substantially as set forth. 11th. The combination of the filtering medium, surrounding body of sand, channel, and means for elevating successive portions of the sand with water through the channel, of a deflector above the channel, substantially as set forth. 12th. The combination of the filtering cylinder 3, tube 4, and intermediate receptacle for the filtered water, of a surrounding casing with a body of sand between the casing and the cylinder, a passage leading from the sand chamber to a receptacle below the tube 4, and a nozzle below the tube, substantially as set forth. 13th. The combination of the casing, filtering medium, sand chamber and independent channel for elevating the sand communicating with the sand chamber above and below the filtering medium, substantially as set forth. 4th. The combination with the casing, filtering cylinder and tube 4, of a ring supporting the said cylinder and tube, and an inlet nozzle below said tube, substantially as set forth. 15th. The combination with the casing, filtering medium, sand chamber and vertical water channel, of a nozzle, below said channel, and a surrounding receptacle for the admission of sand, substantially as set forth. 16th. The combination with the casing, filtering medium sand chamber, water channel and nozzle, of a deflector above said nozzle, for the purpose set forth. 17th. The combination with the casing, filtering cylinder and independent water channel within the cylinder, of a nozzle below the water channel, substantially as set forth. 18th. The casing containing the filtering medium, water channel, body of sand, and means for causing an upward current in the water channel, of an outlet pipe below the casing communicating with the house service pipe, substantially as described. 19th. The combination of the casing filtering medium, chamber for the filtered water, sand chamber, and means for moving a body of sand over the filtering surface, of an outlet for unfiltered water, and a second chamber containing filtered water under pressure, communicating with the filtered water chamber of the filter, substantially as set forth. 20th. The combination with the filtering medium, means for cleansing the filtering surface of the latter and filtered water chamber of a filter, or a second water chamber communicating with the first and containing filtered water under pressure, for the purpose set forth. 21st. The combination of two or more filters, each having a casing, filtering medium, filtered water chamber and outlet for unfiltered water, a channel connecting the two filtered water chambers, and means whereby the outlet of each filter may be opened and closed, substantially set forth. 22nd. The combination of two filters, having their filtered water chamber in communication and provided with means for clearing the filtered surfaces, of means for closing the outlets of the two filters, whereby the filtering pressure in the filtered water chamber of one is the means of exerting a back pressure in the other, substantially as set forth. 23rd. The combination of two filters, each having a filtering medium with a filtered water chamber upon one side, a body of sand upon the other, and means for moving the sand to cleanse the filtering surface, and a communication between the two chambers, and means for drawing the unfiltered water independently from the two filters, substantially as set forth. 24th. The combination of two filters, each having a filtering medium, a filtered water chamber in communication with that of the other chamber, and means for cleansing the filtering surface automatically, a single supply pipe and a single discharge pipe to both filters with three way cocks in said pipes, substantially as set forth. 25th. The combination of two filters, a single base supporting the same, a single supply pipe and a single discharge pipe communicating with both filters, a communication between the filtered water chambers of the two filters, and means for closing the channels to and from each filter independently, substantially as set forth.

No. 41,245. Extension Ladder. (*Echelle à rallonge.*)

Isaac T. Cross, Watertown, New York, U.S.A., 15th December. 1892; 6 years.

Claim.—1st. In an extension ladder, the combination with the lower section having rungs on both sides of the stiles of the upper section sliding inside the said lower section, the cord F secured to the lower end of the top section passing through the stile A^1, over the pulley G to the foot of the ladder, the catch H, crank *h*, and rod I, substantially as set forth. 2nd. In an extension ladder, the combination with the lower section of said ladder, of the rung B^1, placed a longer distance from the rung above it than the rung below it, the catch having a crank *h*, operated by the rod I, substantially as set forth

No. 41,246. Method and Apparatus for the Manufacture of Lead Fibre. (*Méthode et appareil pour la fabrication des filaments de plomb.*)

Norman Kelsey Morris, Denver, Colorada, U.S.A., 15th December, 1892; 6 years.

Claim. 1st. The herein described method for the manufacture of lead fibre, which consists in forcing molten lead through a substantially small orifice by the pressure of the column of the molten lead of a height or depth sufficient to obtain the pressure necessary to force the molton lead through the said orifice, substantially as described. 2nd. The herein described method for the manufacture of lead fibre, which consists in heating the lead to a temperature substantially near its melting point and below 8000 F., forcing the lead thus heated through a substantially small orifice by the pressure of a column of the lead maintained at a height not substantially below two and one half feet, and lastly, cooling the lead discharged through the orifice, substantially as described. 3rd. The herein described method for the manufacture of lead fibre, which consists first, in heating the lead to a temperature substantially near its melting point, 2nd., forcing the lead thus heated through a substantially small orifice by the pressure of a column of lead of a head sufficient to cause the molten lead to flow; 3rd, permitting the lead forced through the orifice to become "set," and lastly, cooling the lead fibre after being "set," whereby the lead fibre may be broken up into pieces of considerable length, substantially as described. 4th. The combination with a chamber or receptacle A, to contain molten lead, a discharge pipe therefor provided with a substantially small orifice, and a furnace or combustion chamber A^1, substantially as described. 5th. The combination with a chamber or receptacle A, to contain molten lead, a discharge pipe therefor provided with a substantially small orifice, and a furnace or combustion chamber A^1, and a vat or tank to contain a cooling fluid, and a travelling belt or web in said tank below the level of the cooling fluid, substantialiy as described.

No. 41,247. Propeller. (*Appareil de propulsion.*)

Charles Stuart Merritt, Hope Cottage, Tassin, Rhone, France, 15th December, 1892; 6 years.

Claim.—The herein described system of propulsion, consisting in dividing the motive power between an even number of independent, helicoidal propellers disposed symetrically on either side and along the longitudinal axis of the vessel.

No. 41,248. Agitator for Mixed Paints.

(*Agitateur pour peinture mélangée.*)

Charles John McLennan, Toronto, Ontario, Canada, 15th December, 1892; 6 years.

Claim.—1st. In combination with the paint receptacle, an agitating frame supported parallel with the bottom of the receptacle in proximity thereto, and deriving a reciprocating vibratory motion as specified. 2nd. In combination with a paint receptacle, an agitating frame supported parallel with the bottom of the receptacle, and having a series of beaters extending downwardly in proximity to the bottom of the receptacle, and deriving a reciprocating vibratory motion as specified. 3rd. An agitating frame supported parallel with the bottom of the receptacle and in proximity thereto, and having longitudinal double angle irons which are supported on brackets attached to the sides of the receptacle, the said frame being driven from the verticle spindle H, the crank *h*, the pin h^1, of which extends into the slotted end of the T-shaped bracket at the bottom of the frame, as and for the purpose specified. 4th. The agitating frame B, having a series of downwardly projecting beaters *h*, and the double angle irons C connecting the cross bars of the frame together, in combination with the brackets D, and brackets E, arranged as and for the purpose specified.

No. 41,249. Fruit Canning Devices.

(*Appareil pour la mise en boîtes des fruits.*)

John Jacob Isler, Elk Rapids, Michigan, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. The combination of the can having an annular recess in its upper edge, a packing ring in said recess, the cover having a depending flange that enters the recess in the upper edge of the can, and bears upon said packing ring, said cover also having an opening therein, and a valve to close said opening, the stem of which extends downward therethrough, the spring attached to the under face of said cover, and engaging said valve stem, substantially as set forth. 2nd. The combination of a jar or can with an elastic packing ring thereon, and a cover fitted to the jar or can and ring thereon, adapted for preserving fruit and other purposes, the said cover having an opening therein for the extraction of air by pumping, and a valve fitted to close the same, and a spring within the cover under the opening arranged to hold the valve on its seat and to permit the valve to open for the escape of air during its extraction, and so as to allow the pressure of the external air to hold the valve and cover closed after the operation of canning or sealing is completed. 3rd. A jar or can having a cover with a hole therein and a valve to close the same, and a spring under the hole arranged to hold the valve on its seat and to permit it to open for the extraction of air and to close it to prevent the re-entry of air when the operation of canning or sealing is completed.

No. 41,250. Cattle Car. (*Char à bestiaux.*)

Ferdinand E. Canda, New York, State of New York, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. A gate or partition for stock cars consisting of slats or bars, permanently sustained in spaced relation by flexible connections, substantially as described. 2nd. In a stock car, partitions consisting of slats or bars connected by flexible strips of sufficient stiffness to maintain the slats in position, said partitions being fitted to guides and connected at one end only to the propelling mechanism, substantially as described. 3rd. In a stock car, partitions consisting of bars or slats connected by flexible strips of sufficient stiffness to maintain the slats in position, said partitions being fitted to guides and connected, at one end only, to endless chains adapted to move the partitions in both directions, substantially as described. 4th. The combination with a cattle car, of gates or partitions formed of slats or bars, united by springs, and main and auxiliary ways for said gates, substantially as described. 5th. A gate or partition for cattle cars, formed of slats or bars united by springs, substantially as described. 6th. The combination with a cattle car, of flexible partitions, and main and auxiliary ways for such partitions, substantially as described.

No. 41,251. Car for Railways. (*Char de chemin de fer.*)

Leslie P. Farmer, South Orange, New Jersey, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. In a railway car having its outer longitudinal sills, as C^2 and C^3, interrupted for the admission of a door and steps, as described, an iron frame, as E E E E^4, secured between and to the ends of the outer sill, sections C^3, in combination with brace plates, as G, G, secured to the upright members of said frame and extending back along the sills C^3, to which they are also secured, substantially as and for the purpose specified. 2nd. In a railway car having its outer longitudinal sills, as C^2 and C^3, interrupted for the admission of a door and steps, as described, an iron frame, as E E E E^4, having its lower member E^4 extending out beyond the upright members secured between and to the ends of the outer sill sections C^3, in combination with brace plates, as G G, secured to the upright members of said frame and extending back along the sills C^3, to which and to the projecting ends of E^4 they are also secured substantially as and for the purpose specified. 3rd, In a railway car having its outer longitudinal sills, as C^3 and C^2, interrupted, as described, for the admission of a door and steps, an iron iron frame, as E, E, E^1, E^4, secured between the sections of the outer sill, brace plates, as G, secured to the frame and to the outer sill sections, substantially as described, sills, as C^4, extending transversely from sill sections C^3, to a continuous longitudinal sill, as C^1, to support the ends of the inner intersected sill sections, as C^2, C^2, and stiffening plates, as L, secured to sills C^4 and C^1, all substantially as and for the purpose specified. 4th. In a railway car having its outer longitudinal sills, as C^3, C^2, interrupted, as described, for the admission of a door and steps, iron frames, as E, E, E^1, E^4, secured opposite to each other between and to the outer intersected sills, in combination with plates, as H, secured to the lower members of the frames, and projecting horizontally inward, and cross braces I, I, &c., secured to the ends of plates H, all substantially as and for the purpose specified. 5th. In a railway car, having its outer longitudinal sills, as C^3, C^2, interrupted, as described, for the admission of a door and steps, iron frames, as E, E, E^1, E^4, secured opposite to each other between and to the outer intersected sills, in combination with plates, as H, secured to the lower members of the frames, and projecting horizontally inward, cross braces I, I, &c., secured to the ends of plates H, and a stay rod, as I^3, securing the intersecting centre of braces I, I, &c., to the car body, all substantially as and for the purpose specified. 6th. In a railway car, having its outer longitudinal sills, as C^3, C^2, interrupted, as described, for the admission of a door and steps, iron frames, as E, E, E^1, E^4, secured opposite to each other between and to the outer intersected sills, in combination with stays, as I^2, extending upward from the bottom of the frames to the car body, to which they are secured, all substantially as and for the purpose specified. 7th. In a railway car, having its outer longitudinal sills, C^3, C^2, interrupted, as described, for the admission of a door and steps, iron frames, as E, E, E^1, E^4, secured opposite to each other between and to the outer intersected sills, in combination with continuous sills, as C^1, C^1, reinforced by angle bars K^1, a connecting plate J, and transverse braces I^2, secured to the frames, and plate J, all substantially as and for the purpose specified. 8th. In a railway car, having its outer longitudinal sills, as C^3, C^2, interrupted, as described, for the admission of a door and steps, iron frames, as E, E, E^1, E^4, secured opposite to each other, between and to the outer intersected sills, in combination with continuous sills, as C^1, C^1, reinforced by angle bars K^1, a connecting plate, J, cross braces I, I, uniting the frames, a rod I^3, extending from the intersection of the cross braces to plate J, and transverse braces I^2, secured to the frames and plate J, all substantially as and for the purpose specified.

No. 41,252. Machine for Making Stove pipe Elbows.

(*Machine pour faire les coudes de tuyau.*)

Alfred Nelson Fairman, of Montreal, Quebec, Canada, 15th December, 1892; 6 years.

Claim.—1st. In a machine for making stove pipe elbows, the combination with means for holding the pipe to be operated upon, of movable crimpers adapted to be adjusted relatively to said pipe and means for operating said crimpers and for effecting the adjustment thereof. 2nd. In a machine for making stove pipe elbows, the combination with the stationary front support, means for holding the pipe to be operated upon and movable crimpers, of an adjustable face plate and connections between it and said crimpers for the purpose set forth. 3rd. In a machine for making stove pipe elbows, the combination with the stationary front support and means for holding the pipe to be operated upon, of movable crimpers exerting a rolling or travelling pressure upon such pipe in effecting the crease and means for operating said crimpers. 4th. In a machine for making stove pipe elbows, the combination with a stationary front support and means for holding the pipe to be operated upon, of movable crimpers having sliding pivotal connections with said support and mechanism for imparting motion to such crimpers. 5th. In a machine for making stove pipe elbows, the combination with a stationary slotted front support and means for holding the pipe to be operated upon, of movable crimpers having projections from their rear faces adapted to travel in the slots in said support and mechanism for imparting motion to such crimpers. 6th. In a machine for making stove pipe elbows, the combination with a stationary front support having upper and lower pairs of slots respectively inclined, for the greater part of their length outward and inward relatively to a central vertical axis, and means for holding the pipe to be operated upon, of movable crimpers having projections from their rear faces adapted to travel in said slots, and mechanism for imparting motion to such crimpers. 7th. In a machine for making stove pipe elbows, the combination with a stationary slotted front support and means for holding the pipe to be operated upon, of a face plate formed in two side sections slotted to allow of adjustment and also to furnish guides for projections from a pair of movable crimpers, and clamping bolts passing through said adjustment slots in both support and face plate sections as set forth. 8th. In a machine for making stove pipe elbows, the combination with the feed carriage having an annular bearing surface or support for the pipe to be operated upon, of a flexible clamping band or ring freely encircling said bearing surface and means for supporting and contracting such band for the purpose set forth. 9th. In a machine for making stove pipe elbows, the combination with the feed carriage having an annular bearing surface or support for the pipe to be operated upon, of a flexible clamping band or ring freely encircling same and a lever pivoted to said carriage and having an eccentric bearing upon or connection with the ends of said band for contracting same. 10th. In a power driven machine for making stove pipe elbows, the combination with crimping devices, a compressor head, means for holding and flattening the crease when formed, and stove pipe carrying and feeding mechanism, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts, one of which has connection with the crimping devices and the other with the compressor head, and the means for holding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 11th. In a power driven machine for making stove pipe elbows, the combination with crimping devices, a compressor head, means for folding and flattening the crease when formed, and stove pipe carrying and feeding mechanism, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and the said driving shaft carrying a fixed gear wheel, two other shafts and connections between one of same, and the crimping devices and the other of same, and the compressor head, and means for folding and flattening the crease, the first mentioned driving and counter shafts carrying fixed gear wheels, and the two last named shafts carrying loose gear wheels in mesh with said fixed gear wheels, lever and clutch devices for fixing said loose gears alternately upon their respective shafts, and means carried by said counter shaft for operating said lever and clutch devices, as set forth. 12th. In a power driven machine for making stove pipe elbows, the combination with the stove pipe carrying and feeding mechanism, and a main driving shaft carrying a loose pulley and clutch mechanism, of detent devices and movable connections for operating said clutch mechanism to stop the machine at the completion of each elbow, as set forth. 13th. In a power machine for making stove pipe elbows, the combination with the stove pipe carrier and the feed bars, and a main driving shaft carrying a loose pulley and clutch mechanism, of lever and rod connections extending from said clutch mechanism to a point adjacent to the top and notched side of one of said feed bars, and terminating in a pivotted pawl, of a movable support for said pawl adapted to be moved by saidc arrier to raise or lower same into or out of contact with the notch in said feed bar, as set forth. 14th. In a power driven machine for making stove pipe elbows, the combination with means for holding and feeding the pipe to be operated upon, movable crimpers adapted to be adjusted relatively to said pipe, and means for effecting the adjustment thereof, a compressor head, and means for folding and flattening the crease when formed, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts, one of which has pivotal connections with said crimpers and the other connected with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation with means for effecting such intermittent alternating rotation and operating said shafts. 15th. In a power driven machine for making stove pipe elbows, the combination with stationary front support, means for holding and feeding the pipe to be operated upon, movable crimpers and an adjustable face plate, and connections between it and said crimpers, a compressor head and means for folding and flattening the crease when formed, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts one of which has pivotal connections with said crimpers, and the other connected with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shaft. 16th. In a power driven machine for making stove pipe elbows, the combination, with the stationary front support, means for holding and feeding the pipe to be operated upon, and movable crimpers having pivotal connection with said support, and exerting a rolling or travelling pressure upon such pipe in effecting the crease, a compressor head and means for folding and flattening the crease when formed, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts one of which has pivotal connections with said crimpers, and the other connected with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 17th. In a power driven machine for making stove pipe elbows, the combination, with a stationary front support, means for holding and feeding the pipe to be operated upon, movable crimpers having sliding pivotal connection with said support, a compressor head and means for folding and flattening the crease when formed, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts one of which has pivotal connections with said crimpers, and the other with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 18th. In a power driven machine for making stove pipe elbows, the combination, with a stationary slotted front support, means for holding and feeding the pipe to be operated upon, and movable crimpers having projections from their rear faces adapted to travel in the slots in said support, a compressor head and means for folding and flattening the crease of a main driving shaft, and a counter shaft geared together for simultaneous continuous rotation, and two shafts one of which has pivotal connections with said crimpers, and the other with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 19th. In a power driven machine for making stove pipe elbows, the combination, with a stationary front support, having upper and lower pairs of slots respectively inclined for the greater part of their length outward and inward relatively to a central axis, means for holding and feeding the pipe to be operated upon, movable crimpers having projections from their rear faces adapted to travel in said slots, a compressor head and means for folding and flattening the crease, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts, one of which has pivotal connections with said crimpers and the other with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 20th. In a power driven machine for making stove pipe elbows, the combination with a stationary slotted front support, means for holding and feeding the pipe to be operated upon, a face plate formed in two side sections, slotted to allow of adjustment and also to furnish guides for projections from a pair of movable crimpers, clamping bolts passing through said adjustment slots in both support and face plate sections, a compressor head and means for folding and flattening the crease, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts, one of which has pivotal connections with said crimpers, and the other with the compressor head and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts. 21st. In a power driven machine for making stove pipe elbows, the combination with crimping devices, a compressor head, means for folding and flattening the crease and mechanism for holding and feeding the pipe to be operated upon, of a main driving shaft and a counter shaft geared together for simultaneous continuous rotation, and two shafts, one of which has pivotal connections with said crimpers, and the other with the compressor head, and the means for folding and flattening the crease, and both having an intermittent alternating rotation, with means for effecting such intermittent alternating rotation and operating said shafts, and an automatic cut-off, adapted to be operated by said feeding mechanism to stop the machine at the completion of each elbow, as set forth. 22nd. In a power driven machine for making stove pipe elbows, the combination with the stationary framework and main

front and rear standards or supports, the front one of which has an annular opening therein, of a fixed external cylinder, extending horizontally from the rear standard to, and having its forward end of slightly less diameter than said opening, an internal cylinder adapted to slide in said external cylinder, and have its forward end project into said annular opening, and such end being closed by a head piece, having an annular projection or flange of corresponding diameter to that of the forward end of said external cylinder, a movable ring or compressor head hinged to the outer face of said head piece, a shaft concentric with said cylinders and extending through and having its bearings respectively in said head piece and the rear support, cams mounted on said shafts within the cylinders, means for rotating said shaft, and connections between said cams and the internal cylinder and compressor head, whereby the latter will first be alone and then simultaneously with said internal cylinder, as set forth. 23rd. In a machine or making stove pipe elbows, the combination with the movable perforated compressor head and the longitudinally sliding rod for operating same, of an adjustable bearing on the outer end of said rod, for the purpose set forth.

No. 41,253. Money Changer. (*Appareil pour changer la monnaie.*)

John Adams, Chicago, Illinois, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. In a money changer, the combination with the coin holders, of the ejectors and levers for operating the ejectors, of a weighted bar for restoring the ejectors to their normal position, substantially as described. 2nd. In a money changer, the combination with the coin holders and ejectors, of pivoted levers connected to the ejectors and a weighted crank arm normally resting on said levers and tending to restore the ejectors, substantially as described. 3rd. In a money changer, the combination with the coin holder and the ejectors, of the pivotally supported levers loosely connected to the ejectors, and a weight resting on the levers, substantially as described. 4th. In a money changer, the combination with the coin holder, of the ejectors, each ejector consisting of two side bars having ends bevelled laterally and vertically, the side bars being connected by two rods near their rear ends, substantially as described. 5th. In a money changer, the combination with the ejector each comprising two side bars connected by two rods, the rods being notched on their inner sides and the levers provided with notched ends adapted to engage the rods of the ejectors, substantially as described. 6th. In a money changer, the combination with the coin holders of a notched platform supporting bar, platform thereon and ejectors each comprising two side bars passing through the notches, substantially as described. 7th. In a money changer, the combination with the coin holders, of the notched platform supporting bar, platforms thereon and the ejectors, the side bars of which pass through the notches and embrace the platform, the platforms being slotted at their rear to admit the crank levers and having extending ends forming guides for the ejectors, substantially as described. 8th. In a money changer, the combination with the coin holders, of the crank levers, each being provided with a substantially rectangular body portion having a curved under surface, an arm projecting therefrom at substantially right angles and provided with a bifurcated end and a laterally bent operating lever carrying a button secured to the body portion, substantially as described. 9th. In a money changer, in combination with a supporting rod, a crank lever having a central body of substantially rectangular form with a curved under portion and provided with an arm extending at substantial right angles to the body portion, the body portion forming three bearings for the rod upon which it is mounted, substantially as described. 10th. In a money changer, the combination with the frame having a curved slotted table, the coin holders rising from the table, and a series of crank levers, each lever provided with a laterally bent operating arm extending through the slotted table and carrying a button, a substantially rectangular body portion having a curved under surface, and an arm extending from the body portion at substantial right angles thereto, substantially as described. 11th. In a money changer, the combination of the coin holder having a series of recesses, the platforms arranged beneath the recesses, the ejectors sliding beneath the coin holders and guided by the platform, the pivoted back levers loosely connected to the ejectors, the weighted crank arm bearing on the levers, and the crank levers connected to operate the back levers, substantially as described. 12th. In a money changer, in combination with the coin holders, of a cover pivoted thereto, the cover being recessed to correspond with the coin chamber and provided with lips having perforations, and spring bolts on the frame of the money changer adapted to engage the perforations, substantially as described. 13th. In a money changer, the combination with the coin holder, the ejector therefor, the levers operating the ejectors, the weighted crank arm for the levers, of a cover for the coin holder, the cover being provided with projections passing through the coin holder and engaging the weighted crank arm, substantially as described. 14th. In a money changer, the combination with the coin holders, of the ejectors, levers for operating the ejectors, a weighted crank arm for restoring the ejectors to their normal position, and means for locking the weighted crank arm, substantially as described. 15th. In a money changer, the combination with the base and inclined coin holders, platforms for the coin holders, the ejectors, the levers operating the ejectors, the crank levers for operating the ejector levers, of the weighted crank arm, whereby the parts are normally restored to their respective positions by gravity, substantially as described. 16th. In a money changer, a coin tray provided with a series of semi-circular recesses arranged on opposite sides thereof, the recesses being separated by steps, substantially as described. 17th. In a money changer, a coin tray provided with a series of recesses arranged on opposite sides thereof, with a recess at the bottom of the tray, and steps between the recesses, substantially as described. 18th. In a money changer, a coin tray comprising the end walls, forming supports for the tray, the sides provided with a series of semi-circular recesses for the coin, steps between the recesses and a central depression between the series of recesses, substantially as described.

No. 41,254. Air Supplying Device for Gas Machines.

(*Appareil pour l'alimentation de l'air pour machines à gaz.*)

Edgar B. Badlam, San Francisco, California, U.S.A., 15th December, 1892; 6 years.

Claim. 1st. In a gas machine, the series of air forcing devices with separate and independent casings, passages leading therefrom, a valve having interior and exterior chambers, a valve casing consisting of exterior and interior cylindrical walls forming an annular chamber, diaphragms whereby this chamber is divided, openings through the inner cylindrical wall of the casing, and openings connecting the interior space in which the valve turns with the pipes N^1 and N, which lead, respectively, to an evaporating chamber and an air mixing chamber, means for turning the valve plug so as to unite the various chambers and connect them with the air forcing mechanism, and a dial plate whereby each connection is indicated, substantially as herein described. 2nd. In a gas machine, a series of air forcing devices with passages leading therefrom, a valve casing consisting of concentric walls, openings through the inner wall communicating with the interior space, radial diaphragms by which the space between the walls is subdivided, passages connecting each subdivision with one of the air forcing devices, a hollow valve plug fitting and turning in the central compartment having a central passage communicating with the other air forcing device, chambers around the exterior of the plug with which the openings in the inner wall of the valve casing connects, a passage Q from one of these chambers to the interior of the plug, and an opening P through the opposite wall of the plug to connect with the openings N, N^1, through the inner wall of the casing connecting with pipes leading to a mixing and drying compartment and to an evaporating compartment, substantially as herein described. 3rd. In a gas machine, a series of air forcing devices, independent evaporating and drying compartments, a valve interposed between these compartments and the air forcing devices, with communicating passages through which varying proportions of air are delivered to the two compartments, a handle by which the valve is turned, a disc having holes or stops corresponding with the different positions of the valve, and spring actuated pin passing through the handle so as to engage either of the stops, and hold the valve plug in either position, substantially as herein described. 4th. In a gas machine, a series of air forcing devices, independent evaporating and drying compartments, a valve interposed between the compartments and the air forcing mechanisms with passages by which the proportions of air delivered to either compartment are varied by changing the position of the valve plug, a handle by which the plug is turned, a disc with stops corresponding with the different positions of the plug, a spring actuated pin carried by the handle so as to engage either of the stops and hold the valve in place, and a projection upon the pin by which it is withdrawn when desired to move the plug, substantially as herein described.

No. 41,255. Composition for Artificial Stone.

(*Composition pour pierre artificielle.*)

Joseph Everhard Keseling and Charles Fuchs, New York, State of New York, U.S.A., 15th December, 1892; 6 years.

Claim.—A composition of matter for artificial stone, consisting of a basic cement of oxide of magnesium 25 lbs., and neutral chloride of magnesium 20 lbs., sand 75 lbs., asphaltum 2 oz., in solution and a solution of albumen, one to one and a half gallons.

No. 41,256. Numbering Machine. (*Machine à numéroter.*)

Carter & Company, Toronto, Ontario, Canada, assignee of Hoyte C. Hadstate and Stephen J. Martin, both of Detroit, Michigan, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. The combination of a wheel with printing figures engraved on the periphery thereof, the described locking guide ring and cam and a spur wheel intermeshing with said guide ring and with a pinion on the shaft of said engraved wheel, substantially as and for the purposes described 2nd. A consecutive number printing machine, consisting of a rotating wheel case in which are contained a number of printing wheels, each movable upon its own axis, and all connected as described to a spur gear mashing into a disc cam. 3rd. A rotary number printing machine, consisting of a rotary wheel case, and two or more independently journalled pinions mounted therein, an annular driving wheel and the described mechanism for giving to the printing wheels an intermitting forward motion in the direction of the motion of the rotary wheel case,

substantially as and for the purposes described. 4th. A consecutive numbering machine combining as described the rotary carrying case A with the numbered wheels W mounted therein, the annular wheel R, pinions P; mitre wheels C and E, spur wheel B, and disc cam K, all arranged and interacting as described to present consecutive numbers in a position to be printed from as the carrying case revolves, substantially as described.

No. 41,257. Apple Picker. (*Jaffet*)

Richard William Anderson, Village of Ayr, and Arthur Pratt Jamieson, Township of Dumfries, both of Ontario, Canada, 15th December, 1892; 6 years.

Claim.—1st. An apple picker comprising a receptacle, a bottom for said receptacle, said receptacle having an open top, a picker connected to the top of said receptacle and adapted to remove the fruit from the tree, substantially as and for the purpose specified. 2nd. An apple picker comprising a suitable receptacle, a bottom for said receptacle, an open top adapted to admit the fruit into said receptacle, a picker comprising a series of sockets and a crotch secured to the upper ends of said sockets, said crotch adapted to remove the fruit from the branch, substantially as and for the purpose specified.

No. 41,258. Armature for Electric Motors or Generators. (*Armature pour moteurs électriques ou générateurs.*)

James Francis McLaughlin, Philadelphia, Pennsylvania, U. S. A., 15th December, 1892; 6 years.

Claim.—1st. An armature for electric motors and generators, comprising an iron body having a circular series of channels near its outer edge, and an armature coil section housed in each channel, substantially as described. 2nd. An armature for electric motors and generators, comprising a laminated iron body having a circular series of channels near its outer edge, and an armature coil section housed in each channel, substantially as described. 3rd. An armature for electric motors and generators, comprising a cylindrical laminated iron body mounted upon a rotary shaft, and having a circular series of segmental channels near the periphery and parallel to the shaft, and an armature coil section housed in each channel, substantially as described. 4th. An armature for electric motors and generators, comprising a laminated iron body, with a series of perforations or channels near its edge, and a series of armature coil sections, each comprising a laminated core carrying a coil of wire, and housed in the perforations or channels of the body, substantially as described. 5th. An armature for electric motors and generators, comprising a series of alternating and insulating disc laminae having a series of perforations formed near their edge, and constituting channels for the reception and housing of armature coil sections, and heads at each end of the series of laminae clamping the latter together, substantially as described. 6th. An armature for electric motors or generators, comprising an iron body having a series of channels near its outer edge, armature coil sections housed in the said channels, and a sectional face plate covering one end of the armature body for retaining the coil sections within the channels, substantially as described. 7th. In an armature for electric motors and generators, the combination of a series of coil sections removably housed within a laminated iron body, with couplings for connecting and disconnecting the terminals of adjacent coils with each other and with the commutator, substantially as described. 8th. In an armature for electric motors and generators, the combination, with a series of removable coil sections, and couplings for connecting and disconnecting the terminals, of adjacent coils with each other, of commutator segments, each provided with an angular extension terminating in an eye for connection with the couplings of the coil sections, substantially as described.

No. 41,259. Bicycle, Tricycle, &c.

(*Bicycle, tricycle, &c.*)

Arthur John Battersby, of 50 Castle Gate, Nottingham, England, 15th December, 1892; 6 years.

Claim. 1st. The combination, with the framing B^1, B^1, of two brackets A, A, having backwards extending bearing arms, an internally toothed wheels A^2, carried by the pedal axle A^1, the axle C, having two cranks C^1, a spur wheel A^3, meshing with said wheel A^2, and the axle D, of the rear driving wheel having two cranks rotating in bearings at the back end of a connecting rod D^3, whereby the pedal axle carrying the wheel A^2, causes the wheel A^3, and the two cranked axles C and D, and driving wheel D^2 to revolve thrice at each rotation of the pedal axle, and a driving chain is dispensed with. 2nd. The externally toothed wheel A^2, having a cover plate A^4 to exclude dust.

No. 41,260. Overall. (*Pantalon pour ouvriers.*)

Samuel Latham, Toronto, Ontario, Canada, 15th December, 1892; 6 years.

Claim.—As an improved article of manufacture, an overall having a waistcoat shaped front attached to the overall and extending up to the neck of the wearer, the said front being supported by shoulder straps, having elastic sections inserted into them, and extending down to the back of the overall, substantially as and for the purpose specified.

41,261. Spade and Shovel. (*Bêche et pelle.*)

Peter Caldwell, Warrington, Lancaster, England, 15th December, 1892; 6 years.

Claim. The hereinbefore described method of manufacturing strapped and langet spades and shovels, which consists in cutting or forging the blank and tang out of the soled metal, slitting the tang, forging and cutting the blade, and finally forging the straps, all the operations being conducted without a weld or doubling the metal, substantially as set forth and as illustrated by the accompanying drawings.

No. 41,262. Corset. (*Corset.*)

Frank Rothschild, New York, State of New York, U.S.A., 15th December, 1892; 6 years.

Claim. 1st. The combination with an undivided corset, of a series of elastic bands surrounding the corset, substantially as herein specified. 2nd. The combination with the undivided corset, of the bands h h h^1 h^2, and the loops k k, substantially as and for the purpose herein set forth.

No. 41,263. Typographic Machine.

(*Machine typographique.*)

Thomas Tinsley Heath, Loveland, assignee of Alvin Nicholas Verdin, Glendale, both in Ohio, U.S.A., 15th December, 1892; 6 years.

Claim.—1st. In a typographic machine, the combination, substantially as set forth, of a frame, a fixed plunger guide and abutment supported by said frame in a line of collimation, a reciprocating plunger in said guide, a movable case of parallel types disposed in front of the plunger, a pad carriage disposed in front of the type case, an anvil disposed in said line of collimation in front of and adjustable to and from said pad carriage and abutment, forcing means acting between the plunger and abutment, and a finger key and connections for each type. 2nd. In a typographic machine, the combination, substantially as set forth, of a frame, a fixed plunger guide and abutment supported by said frame in a line collimation, a reciprocating plunger in said guide, forcing means acting between the plunger and abutment, a movable case of parallel types disposed in front of the plunger, a rail supported by the frame in front of the type case and below the line of collimation, a pad carriage mounted on the rail and projecting above the same, a fixed anvil disposed in the line of collimation and projecting over the rail and through the pad carriage, and a finger key and connections for each type. 3rd. In a typographic machine, the combination, substantially as set forth, of a frame, two parts projecting upwardly and rigidly therefrom and carrying in a line of collimation, one an endwise adjustable fixed anvil and the other an abutment, a pad carriage and a movable type case of endwise movable types, and a plunger disposed in the space between said anvil and abutment, forcing means, as a toggle, between the plunger and abutment, and a finger key and connections for each type. 4th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger key pertinent to each type, a part moving up and down by power a constant distance at each impulse of the machine to provide for lifting the type case, a case lifter, dogs for causing the motion of said power moved part to be imparted to the case lifter in degree according to the dog brought into action, connections from the dogs to the appropriate finger keys whereby a finger key brings appropiate dog into action, a driving shaft, a cam thereon, and connections between said cam and the dogs whereby at each rotation of the cam all dogs are restored to normal idle position. 5th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed notched rim, a driver on the shaft, a sliding pin to push the driver from the notch, a lever, a connection from the lever to the pin, a cam to withdraw the pin, and connections from the cam to said lever and pin. 6th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types, type impressing mechanism, a driving shaft, unit-feed devices to positively advance the pad holder a unit of distance at each rotation of said shaft regardless of the type requirement, and a finger key for each type, of a feed adding mechanism for advancing the pad holder more than a unit of distance, connections from some but not all of said finger-keys to said feed adding mechanism. 7th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types, type impressing mechanism, a driving shaft, and a finger key for each type, of a pulley, a stop clutch to turn the shaft and arrest it at the end of one rotation, a part to be moved to engage the clutch with the shaft, and connections from all the finger keys to said starting part. 8th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, a type pressing plunger, pad feeding devices, type case moving devices, and a driving shaft to actuate the type movement and feed pads, of dogs to admeasure the degree of pad feed to be produced by said driving shaft, dogs to admeasure the type case movement, a part to be moved to start the driving shaft, and finger keys connected with

said dogs and starting part. 9th. In a typographic machine, the combination, substantially as set forth, of a pad holder, a movable type case, endwise movable type in the type case to be brought singly to a line of collimation by the movement of the type case, a fixed anvil engaging the back of the pad, a plunger reciprocating in the line of collimation, and adapted to impress a type in said line to a pad on the pad holder, a driving shaft arranged to reciprocate the plunger a definite distance at each rotation, and a finger key for each type for starting said shaft. 10th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a type case, types, a plunger, and a finger key for each type, of a driving shaft, a cam thereon, a pressure finger near the impression point of the pad holder, and connections from said cam to said plunger and pressure finger. 11th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, types, type impressing mechanism, and a finger key for each type, of a power driven driving shaft, a stop clutch, a part to be moved to start the driving shaft, a unit space finger key, and connections from said unit space key to said starting part. 12th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, types, type impressing mechanism, and a finger key for each type, of a driving shaft, a stop clutch, a part to be moved to start the driving shaft, connections from said finger keys to said starting part, a cam on the driving shaft having a low place to permit the depression of any key, and an immediately following swell to lift all finger keys, and connections from said cam to all the finger keys. 13th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, a powder driven actuating shaft and a finger key for each type, of a constant stroke feed part moved by said actuating shaft at each impulse of the machine for feeding the pad holder, a variable stroke feed part moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, connections from the dogs to appropriate type keys, a space key for each dog, and a connection from each space key to a dog. 14th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a driver secured to the shaft by a transverse pivot and adapted to engage the pulley, and means for rocking the driver on its pivot into and out of engagement with the pulley. 15th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, fixed notched rim, a driver secured to the shaft by a transverse pivot and arranged to engage the pulley and be so held by the rim and released at the notch, and a movable piece at the notch to push the driver out of the notch. 16th. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation, endwise movable types mounted parallel in said type case and disposed in an arc struck from said axis, a finger key for each type, two parts, as sliding blocks, moved by power, simultaneously in respectively opposite directions, and connections between said blocks and type case for transmitting motion to said type case from said blocks alternatively. 17th. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation, endwise movable types mounted parallel in said type case and disposed in an arc struck from said axis with a radius equal to the distance from said axis to said line of collimation, a finger key for each type, two parts as sliding blocks, moved by power, simultaneously in respectively opposite directions, and connections between said blocks and type case for transmitting motion to said type case from said blocks alternatively. 18th. In a typographic machine, the combination, substantially as set forth, of a pad holder, a plunger arranged to reciprocate in a line of collimation and provided with a clutch hook, of a type case mounted on an axis of oscillation and arranged for radial adjustment with reference thereto, endwise movable type mounted in the several segmental rows in said type case and having notched heels projecting toward and beyond the plane of the end of said plunger, and mechanism for normally holding said type case in such angular position that no type will be engaged by the plunger, whereby the type case may be shifted radially without interference from the overlapping plunger and type heels. 19th. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation and arranged to swing either way from the normal endwise movable types mounted parallel in said type case and disposed in an arc located at each side of the normal radical plane of the line of collimation and struck from said axis, a finger key for each type, means of bringing the types selectively to the line of collimation, and a lock to secure the type case rigidly in central position, instantly upon its reaching the same. 20th. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation in fixed location, and arranged for radial movement to and from said axis, endwise movable types mounted parallel in said type case and disposed in several arcs, a finger key for each type, and means for bringing said types selectively to the line of collimation. 21st. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation in fixed location, and arranged for radial movement to and from said axis, endwise movable types mounted parallel in said type case and disposed in several arcs struck from said axis, with a radius equal to the distance from said axis to the line of collimation, a finger key for each type, and means for bringing said types selectively to the line of collimation. 22nd. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation, and arranged for radial movement to and from said axis, endwise movable types mounted parallel in said type case and disposed in several arcs and in straight non-radial rows transverse to said arcs, a finger key for each type, and means for bringing said types selectively to the line of collimation. 23rd. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case case mounted on an axis of oscillation in fixed location, and arranged for radial movement to and from said axis, endwise movable types mounted parallel in said type case and disposed at equal distances on several arcs, a finger key for each type, and means for bringing said types selectively to said line of collimation. 24th. In a typographic machine, the combination, substantially as set forth, with a pad holder, and a plunger arranged to reciprocate in a line of collimation, of a type case mounted on an axis of oscillation in fixed location, and arranged for radial movement to and from said axis, endwise movable types mounted parallel in said type case and disposed in several arcs, located at each side of the normal radial plane of the line of collimation, a finger key for each type, and means for bringing said types selectively to the line of collimation. 25th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type, movable endwise in the type case, and type impressing mechanism, of a rigid face plate disposed between the pad holder and type case and engaging the front of the type case. 26th. In a typographic machine, the combination, substantially as set forth, of a movable type case carrying a row of endwise movable type, a plate having an eye for the passage of a type, and a rigid guide on said plate engaged by the type case and serving to guide the row of type accurately past said eye. 27th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type movable endwise in the type case, and type impressing mechanism, of a rigid face plate disposed between the pad holder and type case and having guide ribs, and teeth on the type case to engage said ribs. 28th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type, and type impressing mechanism, of a face plate disposed between the pad holder and type case and having interrupted guide ribs, and teeth on the type case at the interruption of said ribs and adapted to engage said ribs. 29th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type and type impressing mechanism, of a shaft of oscillation, and a radial shank and socket uniting the type case adjustably to said shaft. 30th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type, and a type impressing mechanism, of a shaft of oscillation. and a radial shank and socket uniting the type case adjustably and removably to said shaft. 31st. In a typographic machine, the combination, substantially as set forth, of a type case mounted for oscillation on an axis and arranged for radial movement with reference to said axis, and a type case lifter reciprocating in guides in a line radial to said axis and connected with the type case by teeth having sliding engagement. 32nd. In a typographic machine, the combination, substantially as set forth, with a pad holder, a movable type case, type, and a type impressing mechanism, of a face plate disposed between the pad holder and type case and having guide ribs, a toothed type case lifter, and teeth on the type case normally engaged by said lifter and adapted to engage said guide ribs. 33rd. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger key pertinent to each type, an arm moving up and down by power a constant distance at each impulse of the machine to provide for lifting the type case, a case lifter, dogs for causing the motion of said power moved arm to be imparted to the case lifter in degree, according to the dog brought into action, and connections from the dogs to the appropriate finger keys, whereby a finger key brings an appropriate dog into action. 34th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger-key pertinent to each type, a driving shaft, a lift cam thereon, a moving arm operated through constant distance by said cam, a case lifter, dogs for causing the motion of said cam moved arm to be imparted to the case lifter in degree, according to the dog brought into action, and connections between the dogs and finger keys, whereby a finger key brings an appropriate dog into action. 35th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger key pertinent to each type, a driving shaft, a lift cam thereon, a moving arm operated through constant distance

by said cam, a case lifter, dogs for causing the motion of said cam moved arm to be imparted to the case lifter in degree according to the dog brought into action, a dog operating cam for each dog, and connections between said cams and finger keys, whereby a finger key brings an appropriate dog into action. 36th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger key pertinent to each type, an arm moving up and down by power a constant distance at each impulse of the machine to provide for lifting the type case, a case lifter, dogs for causing the motion of said power moved arm to be imparted to the case lifter in degree according to the dog brought into action, a lift blade along each rank of finger keys pertinent to a given lift of type case, and engaged by the keys of that rank, and connection from the blades to the dog, whereby a finger key brings into action a dog appropriate to the rank of the key. 37th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of a finger key pertinent to each type, an arm moving up and down by power a constant distance at each impulse of the machine to provide for lifting the type case, a case lifter, dogs for causing the motion of said power moved arm to be imparted to the case lifter in degree according to the dog brought into action, a tumbling shaft connected with each dog, and connections from the keys to the tumbling shafts, whereby a finger key rocks an appropriate tumbling shaft and brings an appropriate dog into action. 38th. In a typographic machine, the combination, substantially as set forth, with a type case containing types arranged to be dealt with singly as brought into a line of collimation by the movement of the type case, of an arm moving up and down by power a constant distance at each impulse of the machine to provide for lifting the type case, a case lifter, dogs for causing the motion of said power moved arm to be imparted to the case lifter in degree according to the dog brought into action, a rank of finger keys for each degree of type case lift, an additional rank of keys, and connections between said dogs and first mentioned rank of keys, whereby keys in those ranks brings appropriate dogs into action. 39th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to the variably moved part in degree according to the dog brought into action, and connections between said finger keys and dogs, whereby a finger key brings into action an appropriate dog. 40th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to the variably moved part in degree according to the dog brought into action, connections between said keys and dogs whereby a finger key may move an appropriate dog into action while the power moved part is at rest, and an obstruction to prevent the displacement of the dogs while said power moved part is in motion. 41st. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, and type impressing mechanism, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts, and cause the motion of the power moved part to be imparted to the variably moving part in degree according to the dog brought into action, a row of finger keys pertinent to each degree of type case swing, and connections from each row of keys to dog, whereby any key in a given row will bring into action a dog appropriate to that row. 42nd. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings two power moved parts, as sliding blocks, having constant stroke in opposite directions, dogs arranged to connect said power moved parts with the variably moved part and cause motion of the power moved part to be imparted to the variably moved part in direction and degree accordingly to the dog brought into action, and connections between the finger keys and dogs whereby a key brings into action an appropriate dog. 43rd. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts, and cause the motion of the power moved part to be imparted to the variably moving part in degree according to the dog brought into action, a swing blade engaged by each group of keys calling for the same degree and direction of type case swing, and a connection from each blade to a dog appropriate to its degree and direction of type case swing. 44th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, a finger key for each type, a bar reciprocating in correspondence with the swing of the type case, and a block moved by power a constant distance at each impulse of the machine, of movable pins in said block, a shoulder on said bar for each block pin, and of peculiar appropriate distance from each block pin, and connections between keys and pins whereby a key will bring an appropriate block pin in position to engage its bar shoulder. 45th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, a finger key for each type, a bar reciprocating in correspondence with the swing of the type case, and a block moved by power a constant distance at each impulse of the machine, of a plate having button holes under said block, movable pins in the block and presenting heads below said plate which can rise at one point only in the length of the button holes, and connections from said keys to the pins whereby a key may push the head of an appropriate pin through a button hole and cause such pin to engage said bar. 46th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, a finger key for each type, a bar reciprocating in correspondence with the swing of the type case, and a driving shaft, of a swing cam on said shaft, a block moved with a constant stroke by said cam, dogs arranged to impart the block motion to said bar in degree according to the dog in action, and connections between said keys and dogs. 47th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to variably moved part in degree according to the dog brought into action, a separate swing blade engaged by each lot of finger keys calling for the same swing motion of the type case, and levers connecting said blades with their appropriate dogs. 48th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case, as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to the variably moved part in degree according to the dog brought into action, springs tending to hold the type case in normal position, and connections between the finger keys and dogs. 49th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to the variably moved part in degree according to the dog brought into action, a driving shaft, a stop clutch, a starting bar to move and cause the machine to make an impulse, and connections between the finger keys and dogs, and a starting bar whereby a finger key brings an appropriate dog into action and moves the starting bar. 50th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type impressing mechanism, and a finger key for each type, of a part, as a sliding rack, moving variably in correspondence with the type case as it swings, a power moved part, as a sliding block, having a constant stroke sufficient for the maximum swing of the type case, dogs arranged to connect said two parts and cause the motion of the power moved part to be imparted to the variably moved part in degree according to the dog brought into action, a driving shaft, a stop clutch, a starting bar to move and cause the machine to make an impulse, a clutch cam on the driving shaft, and connections between the finger keys and dogs and starting bar and cam, whereby a finger key brings an appropriate dog into action, and moves the starting bar and whereby the impulse of the machine restores the starting bar and finger key. 51st. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type, type impressing mechanism, and a finger key for each type, of a bar reciprocating according to the swing of the type case and having a projection, a pair of power moved reciprocating swing blocks normally holding said projection between them, dogs in the blocks for connecting the blocks and bar, and connections between the keys and dogs. 52nd. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type, type impressing mechanism, and a finger key for each type, of a segmental series of obstructions or teeth corresponding with degrees of swing of the type case, a locking finger connected and oscillating with the type keys, and devices to move said obstructions into the path of said locking finger. 53rd. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type, type impressing mechanism, and a finger key for each type, of a lock finger oscillating with the type case, a notched segment fixed against circumferential movement and normally free of said finger,

and mechanism for bringing the segment to the finger as the case swings. 54th. In a typographic machine, the combination, substantially as set forth, with a pad holder, a swinging type case, type, type impressing mechanism, and a finger key for each type, of a pair of lock fingers oscillating with the type case, a pair of notched segments normally free of said fingers, and devices for bringing the segment toward the fingers as the type case swings. 55th. In a typographic machine, the combination, substantially as set forth, with type, type impressions, mechanism, and a pad crriage, of a rack and pinion to advance the carriage, a pawl and ratchet, a power moved pawl arm, a change gear on the shaft of said ratchet, a change gear on the shaft of said pinion, an adjustable sector bracket, and intermediate gearing carried by said sector bracket and gearing into said two change gears. 56th. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism, and a pad carriage, of a rack and pinion to advance the carriage, a feed pawl and ratchet to turn the pinion, a stop pawl to prevent the retreat of the ratchet, a stop to hold the feed pawl normally disengaged, a limit stop to be engaged by the advancing carriage, and connections from the limit stop to the stop pawl whereby the advancing carriage releases the ratchet from the stop pawl. 57th. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism, and a pad carriage, of a rack and pinion to advance the carriage, a feed pawl and ratchet to turn the pinion, a stop pawl to prevent retreat of the ratchet, a stop to hold the feed pawl normally disengaged, a limit stop to be engaged by the advancing carriage, a limit stop to be engaged by the retreating carriage, and connections from the limit stops to the stop pawl whereby the advancing carriage releases the ratchet from the stop pawl and the retreating carriage restores the stop pawl. 58th. In a typographic machine, the combination, substantially as forth, of a driving shaft, a pulley loose thereon, a clutch for engaging the pulley with the shaft, a pad carriage, carriage feeding mechanism operated by said shaft, and carriage backing mechanism operated by said pulley, whereby the carriage may feed forward only when the shaft is in motion but may move back when the shaft is at rest. 59th. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism, and a pad carriage, of a carriage feeding mechanism, a carriage backing shaft, a slip pulley thereon, a stop to prevent retreat of the carriage, and connections to said stop to be engaged by the advancing carriage to release the stop. 60th. In a typographic machine, the combination, substantially as setforth, with type, type impressing mechanism, and a pad carriage, of a carriage feeding mechanism, a carriage backing shaft, a friction disc thereon, a pulley rim driving said disk by friction, a stop to prevent retreat of the carriage, and connections to said stop to be engaged by the advancing carriage to release the stop. 61st. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism, and a pad carriage, of a carriage feeding mechanism, a carriage backing shaft, a slip pulley thereon, a driving shaft, a stop clutch, a belt from the stop clutch to the slip pulley, a stop to prevent retreat of the carriage, and connections to said stop to be engaged by the advancing carriage to release the stop. 62nd. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism, a pad carriage, and feed devices to advance the carriage, of an intermittently rotating driving shaft, a continuously rotating carriage backing slip pulley, a stop to prevent retreat of the carriage, and connections to said stop to be engaged by the advancing carriage to release the stop. 63rd. In a typographic machine, the combination, substantially as set forth, with type, type impressing mechanism and a pad carriage, of a pinion to advance the carriage, a pinion to back the carriage, a driving shaft arranged to operate the first pinion, and a slip pulley to operate the backing pinion. 64th. In a typographic machine, the combination, substantially as set forth with type, type impressing mechanism, and a pad carriage, of two limit stops to be engaged by the carriage, a driving shaft, a lock therefor, and connections from said limit stops to said lock whereby the driving shaft cannot operate while the carriage is retreating. 65th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, and connections from the dogs to the appropriate finger keys whereby a finger key brings an appropriate dog into action. 66th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, a connection between the constant stroke part and variable stroke part whereby a minimum of motion or unit of feed is imparted at each and every impulse of the machine, and connections from dogs to the type keys pertinent to type calling for more than a unit of pad feed. 67th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly type impressing mechanism, and a finger key for each type, of a driving shaft, a feed cam thereon, a constant stroke feed part, as a racking arm, operated by said cam, variable stroke feed part, as a lever, dogs for causing the motion of the constant stroke part to be imparted to the variable stroke part in degree according to the dog brought into action, and connections between the dogs and appropriate finger keys. 68th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, a tumbling shaft connected with each dog, and connections from the tumbling shafts to the appropriate finger keys. 69th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, feed levers engaged by the appropriate finger keys, and connections from the levers to the dogs. 70th. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, feed levers each disposed alongside of and engaged by several finger keys, and connections from the levers to the dogs. 71st. In a typographic machine, the combination, substantially as set forth, with a pad holder, types arranged to be dealt with singly, type impressing mechanism, and a finger key, for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder a variable stroke feed part a, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, a tumbling shaft for and connected with each dog, and feed levers adjustable along said shafts and engaged by appropriate finger keys. 72nd. In a typographic machine, the combination, substantially as set forth, with a pad holder, type arranged to be dealt with singly, type impressing mechanism, and a finger key for each type, of a constant stroke feed part, as a rocking arm, moved by power at each impulse of the machine to provide for feeding the pad holder, a variable stroke feed part, as a lever, moving in accordance with the degree of pad feed, dogs for causing the motion of said constant stroke part to be imparted to said variable stroke part in degree according to the dog brought into action, a driving shaft, a cam thereon, and connections between said cam and dogs whereby the rotation of the cam restores a displaced dog to normal idle position. 73rd. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a connection to transmit motion to said pawl, and a wiper on the rail to engage said connection and move the pawl forward as the carriage travels back on the rail. 74th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a connection to transmit motion to said pawl, and a wiper mounted on the rail and arranged to engage and move said connections and advance the pawl as the carriage travels back upon the rail and to be moved by said connection without pawl movement as the carriage travels forward on the rail. 75th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a rocking lever mounted on the carriage and connected to said pawl and having a projection, a wiper engaging and moving said projection as the carriage moves back upon the rail and serving to advance the pawl, a stop to limit the return motion of said projection, and devices for changing the position of said stop to regulate the vertical feed of the pad. 76th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a rocking lever mounted on the carriage and connected to said pawl, and having a projection, a wiper engaging and moving said projec-

tion as the carriage moves back upon the rail and serving to advance the pawl, an adjusting lever mounted on the axis of said rocking lever, a stop on said adjusting lever to limit the return motion of said projection, and a series of detents for adjusting the position of said adjusting lever. 77th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a rocking lever mounted on the carriage and connected to said pawl and having a projection, a wiper engaging and moving said projection as the carriage moves back upon the rail and serving to advance the pawl, and a stop to limit the return motion of said projection. 78th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a pawl and ratchet to turn said pinion, a connection to transmit said motion to said pawl, a wiper on the rail to engage said connection as the carriage moves back, a roof piece over said pawl and clear thereof as the pawl works its ratchet, and devices to abnormally extend the back stroke of the pawl and bring its heel into engagement with said roof to disengage the pawl from its ratchet. 79th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion to move the pad holder in the carriage, a ratchet connected with said pinion, a feed pawl therefor, a roof piece to engage the feed pawl wheel and disengage the pawl when drawn abnormally backward, a stop pawl engaging said ratchet, a connection to transmit motion to said feed pawl and having a projection to engage said stop pawl, a wiper on the rail to move said connection as the carriage goes back, and devices to move said connection normally backward to release both said pawls. 80th. In a typographic machine, the combination, substantially as set forth, of a carriage rail, a carriage sliding thereon, a pad holder sliding in the carriage at right angles to the rail, a rack and pinion and pawl at each side of the pad holder, a three armed lever pivoted on the carriage, connections from said lever to the pawls, and a wiper to engage and rock said lever as the carriage moves back on the rail. 81st. The combination, substantially as set forth, of a case having a wicket, a cylinder having a spiral groove and arranged to rotate and rise and fall in said case, a spindle for said cylinder, and a series of graduations on the cylinder parallel with said spiral groove. 82nd. The combination, substantially as set forth, of a frame having guide holes for finger keys, finger keys having stems engaging said guide holes, levers or blades disposed alongside the stems, and pins projecting from the stems over the levers or blades. 83rd. The combination, substantially as set forth, of a frame having guide holes for finger keys, finger keys having bored and slotted stems engaging said guide holes, springs within the stems, and abutment strips having teeth projecting into the key stems. 84th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type and mechanism for forcing the type singly toward the pad holder, of a pressure finger near the impression point of the pad and out of the path of type and standing normally free from the pad, and means for pressing the pressure finger to the pad at the time of impression. 85th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type, and mechanism for forcing the type singly toward the pad holder, of a pressure finger near the impression point of the pad, and out of the path of type and standing normally free from the pad, means for forcing the pressure finger to the pad at the time of impression, and a yielding connection between the forcing means and pressure finger, whereby the finger is forced to the pad with an elastic pressure. 86th. In a typographic machine, the combination substantially as set forth, with a pad holder, type, and mechanism for forcing a type toward the pad holder, of a pressure finger near the impression point of the pad and standing normally free from the pad, means for forcing the pressure finger to the pad at the time of impression, a spring connection between the forcing means and pressure finger whereby the finger is forced to the pad with an elastic pressure, and adjusting devices for regulating the tension of said spring connection. 87th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type, and mechanism for forcing a type toward the pad holder, of a pressure finger near the impression point of the pad and standing normally free from the pad, a wedge engaging the pressure finger, and means for moving the wedge to force the finger to the pad at the time of impression. 88th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type, and mechanism for forcing a type toward the pad holder, of a pressure finger near the impression point of the pad and standing normally free from the pad, a wedge engaging the finger, a rocking arm, and connections between the wedge and the rocking arm. 89th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type, and mechanism for forcing a type toward the pad holder, of a pressure finger near the impression point of the pad and standing normally free from the pad, a wedge engaging the finger, a driving shaft, a rocking arm, connections between the wedge and the rocking arm, and a cam on the driving shaft adapted to move the wedge and force the finger to the pad at each rotation of the driving shaft. 90th. In a typographic machine, the combination, substantially as set forth, with a pad holder, type, and mechanism for forcing the type singly toward the pad holder, of a rigid plate disposed between the type and the pad holder, an eye in said plate for the passage of a type, a pressure finger mounted on the plate near the eye, and means for forcing the finger to the pad at the time of impression. 91st. The combination, substantially as set forth, of a pad holder having a fixed pad gripping rib, a pad clamp, arranged to move on the holder to and from said rib, and a cam to lock the clamp in adjusted position. 92nd. In a typographic machine, the combination, substantially as set forth, with a pad holder and a movable case of endwise movable types, of a hook ended plunger adapted to engage any type brought to the plunger line, an anvil rigidly supported in the plunger line and adjustable to and from the plunger independent of the position of the pad holder, a driving shaft, and means for causing rotation of said shaft to force the plunger a definite distance toward said anvil. 93rd. In a typographic machine, the combination, substantially as set forth, with a pad holder and a movable case of endwise movable type, of a plunger adapted to engage any type brought to the plunger line, a fixed anvil engaging the back of the pad in that line, a toggle connected with the plunger and a driving shaft for operating the toggle to advance the plunger and engage type a definite distance toward the anvil. 94th. In a typographic machine, the combination, substantially as set forth, with a pad holder and a movable case of endwise movable type, of a fixed anvil engaging the rear of the pad, a plunger adapted to engage any type brought into the plunger line and force the type a definite distance toward the anvil, a driving shaft, a cam on the driving shaft, and connections from the cam to the plunger to produce one advance and retreat of the plunger at each rotation of the shaft. 95th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed rim having a notch, a driver secured to the shaft and arranged to engage the pulley, and be held in such engagement by said rim and to disengage at said notch, and a movable piece at said notch to push the driver out of the notch, and into engagement with said pulley. 96th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed rim having a notch with an arresting wall, a driver on the shaft arranged to engage said pulley, and be held in such engagement by said rim and to disengage at said notch and rest against said wall, and a movable piece at said notch to push the driver out of the notch, and into engagement with the pulley. 97th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed rim having a notch, a driver on the shaft arranged to engage said pulley, and be held in such engagement by said rim and to disengage at the notch, a fixed incline at the notch to move the driver from the pulley to the notch, and a movable piece to move the driver from the notch to the pulley. 98th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed rim having a notch with an arresting wall, a driver on the shaft arranged to engage the pulley, and be so held by the rim and to disengage and rest at the notch wall, a fixed incline to mave the driver from the pulley to the notch, and a movable piece to move the driver from the notch to the pulley. 99th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed rim having a notch with an arresting wall, a driver on the shaft arranged to engage said pulley, and be so held by the rim and to disengage and rest at the notch wall, a latch to prevent the rebound of the driver from the wall, and a movable piece to move the driver from the notch into engagement with the pulley. 100th. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed notched rim, a driver on the shaft arranged to engage the pulley, and be so held by the rim and released at the notch, and a sliding pin at the notch to push the driver from the notch. 101st. The combination, substantially as set forth, of a shaft, a toothed pulley loose thereon, a fixed notched rim, a driver on the shaft arranged to engage the pulley and be so held by the rim and released at the notch, a sliding pin at the notch to push the driver from the notch, and a cam on the shaft to withdraw the pin. 102nd. A typographic machine, in which a normally stationary shaft serves, when given a single rotation, to put a selected type in a line of collimation, then give a steady measured impression of that type on the receiving pad, then restore the type to normal position, and then advance the pad a distance appropriate to that type, the shaft motion being started by a selected finger key of which there is one for each type, the shaft thus furnishing all the power for moving and impressing the type and restoring the type to normal position and also for moving the receiving pad.

No. 41,264. Car Coupler. (*Attelage de chars.*)

Asbern Wells and Frederick Abney Schumpert, Newberry, South Carolina, U.S.A., 16th December, 1892; 6 years.

Claim. 1st. In a car coupler, the combination, with the draw head, of a lateral tubular extension, a spring provided pin within said extension, a pin supporting block within the draw head, and a coupling link, substantially as described. 2nd. In a car coupler, the combination, with a draw head having a lateral tubular extension, of a spring provided coupling pin within said extension, a latch on the outer end of said coupling link and an operating cord connected to the latch, a spring provided pin supporting block within the draw head, and a suitable coupling link, all combined, substantially as described. 3rd. The combination in a car coupler, with a draw head and an auxiliary buffer block, of the lateral tubular extension on the draw head, a spring provided pin within said extension, a spring provided pin supporting block within the draw head, a latch on the outer end, the spindle, the pin, the cord for

operating said latch, and a coupling link, substantially as described. 4th. In a car coupler, the combination, with the draw head having the lateral tubular extension D, of the pin E, having the spindle E^1 surrounded by the spring E^2, the adjoining pin hole e, in the draw head, and a cover a, for said hole, substantially as described. 5th. In a car coupler the combination, with the draw head B, having the lateral tubular extension D, of the coupling pin E, therein, having the stem E^1, and the spring E^2, the latch F, having the notches f^1, and f^2, said latch being pivoted to the end of the spindle E^1, the arm or pin G, adapted to be engaged by the notches of the latch, substantially as described. 6th. The combination with the draw head B, having a buffer chamber B^1, of a yielding buffer block I, in said buffer chamber, the lateral tubular extension D, on said buffer block, a spring provided coupling pin E, within said extension, a spring provided pin supporting block K, within the draw head, a latch F, having notches f^1, and f^2, said latch being pivoted to the spindle of the coupling pin, an operating cord g, passing around suitable pulleys and connected to the end of said latch, and a suitable coupling link, all substantially as described. 7th. The combination in a car coupler, of the draw head B, having a buffer block chamber B^1, a buffer block I, having a yielding face J, and a spindle I^1, provided with spring J^1, a spring provided pin supporting block K, within the draw head, a lateral tubular extension D, on the draw head, a coupling pin E, within said extension, having a spindle E^1, enveloped by a spring E^2, a pivoted cover a, for the pin hole e, which is adapted to be entered by the pin E, a latch F, pivoted to the end of the spindle of the coupling pin, and an operating cord for disengaging said latch, all arranged substantially as described.

No. 41,265. Velocipede. (*Velocipède.*)

The Gendron Manufacturing Company, Toronto, Canada, assignee of Peter Gendron, Toledo, Ohio, U.S.A., 16th December, 1892; 6 years.

Claim. 1st. In a velocipede, a front standard, consisting of the portions c^1, d, and c, welded together and shaped, substantially as described. 2nd. In a velocipede, the combination with the standard of two blocks secured to the standard one above the other and formed with apertures in the outer and radial grooves extending from the apertures toward the front, a back bone having a hooked end extending above and through the apertures in the blocks and a locking lug on the side of the lower end of said hook, substantially as described. 3rd. In a velocipede, the combination with a back bone of a seat, a pivotal connection between the forward end of the seat and the back bone, a U spring supporting the rear of the seat and formed with a central coil and a looped lower end and a block, secured to the back bone, formed with a tranverse groove in which the spring is seated and pins on the blocks extending above and across the spring, substantially as described. 4th. In a velocipede the combination of the back bone, the block K^1, hook K, eye J^1, seat J, block L, notch L^1, cross bar M, the spring having a loop engaging in said notch and beneath the cross bar, the coil g, and hook h, substantially as described.

No. 41,266. Current Director. (*Directeur des courants.*)

The Consolidated Car Heating Company, Wheeling, West Virginia, assignee of James Finney McElroy, Albany, New York, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. In a current director, the combination with the circuit, of an alternating current dynamo, of two branches formed in said circuit, a coil in each branch, and a magnetic circuit for each coil consisting of fixed portions for each coil, and moving portions adapted to alternately coincide with the fixed portions synchronously with the production of the current waves, substantially as described. 2nd. In a current director, the combination with the circuit, of an alternating current dynamo, of two magnetic curcuits consisting of fixed and revolving portions alternately coinciding synchronously with the current waves, and two coils in branches of said circuit, said coils being placed on the fixed portion of the magnetic circuit with their convolution doubled or bent to form an electro magnet with the extreme portions of the revolving armature at the moment of coincidence, substantially as described.

No. 41,267. Current Regulator. (*Régulateur des courants.*)

The Consolidated Car Heating Company, assignee of James Finney McElroy, all of Albany, New York, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. In a current regulator having fixed contacts and a movable contact, the combination of a ratchet wheel carrying said movable contact, two pawls adapted to actuate the same in opposite directions respectively, by the movement of the armature, a spring for each pawl arranged to normally hold each pawl out of gear with the ratchet wheel, an electro magnet for each pawl arranged to throw such pawl into gear upon becoming active, an electric circuit including said magnets in two normally open branches thereof, and means for closing said circuit through one or to the other of said branches, upon an increase from the normal strength in the circuit to the generator, substantially as described. 2nd. In a current regulator having fixed and movable contacts, of a ratchet wheel carrying said movable contact, two oscillating levers carrying pawls adapted to engage with and turn said wheel in opposite directions respectively, a cam on the shaft of the armature of the generator to actuate said levers, fixed stops arranged to throw the pawls out of gear in the extreme positions of their levers, springs to normally hold each lever in its extreme position out of engagement with the cam, electro magnets having movable cores attached to said levers to throw the same into position upon becoming energized, a circuit divided into two normally open branches, into which said magnets are included, and means for closing said circuit through one or the other of said branches respectively, upon an increase or decrease from the normal current strength in the circuit of the generator, substantially as described. 3rd. In a current regulator, the combination with a generator having its field magnet coils connected in multiple in the energizing circuit of a segmental circular series of fixed contacts, to which said field coils are terminally connected, and a movable segmental circular contact plate arranged to contact with said fixed contacts to vary the number of active field coils in the energizing circuit, substantially as described. 4th. In a current regulator, the combination of the segmental circular series of fixed contact springs, the contact plate pivotally secured in the centre of said series of field contacts, and provided with an outer segmental portion adapted to variably contact with said fixed contact springs, an inner circular portion on said contact plate, a single contact spring contacting therewith, substantially as described. 5th. In a current regulator, the combination with an electric generator provided with field coils in multiple shunt connection with the circuit of the dynamo, of fixed contacts, one for each field coil, grouped in segmental circular series around a common centre, a ratchet wheel journalled in said centre, an insulating disc secured to said ratchet wheel, a metallic contact plate let into said insulating disc, flush therewith, and provided with an outer segmental portion adapted to variably contact with the fixed contact springs, and the inner circular portion, a single contact spring contacting with said circular portion, and means for actuating the ratchet wheel step by step in one direction or the other by variations in the normal current strength of the dynamo, substantially as described. 6th. The combination with a generator provided with field coils in multiple shunt connection with the circuit of the dynamo, a current regulating device actuated by the revolving shaft of the armature for varying the number of active field coils, and comprising the segmental circular series of fixed contacts G, and a segmental circular contact plate H, in said shunt circuit, the double ratchet wheel J, carrying said movable contact plate, the oscillating levers L, L^1, carrying pawls M, adapted to engage with and turn said ratchet wheel in opposite directions respectively, the eccentric P, on the shaft of the armature actuating said levers, the fixed stops E, E^1, the springs Q, for throwing the levers out of gear, the electric magnets N, having movable cores secured to the levers, the circuit R, having branches R^1, in which said electric magnets are located, and means for closing the circuit through one or the other of said branches by fluctuations in the current strength of the circuit of the dynamo, substantially as described.

No. 41,268. Corset. (*Corset.*)

Frank Rothschild, New York, State of New York, U.S.A., 16th December, 1892; 6 years.

Claim.—The combination with an undivided corset having one opening, of a series of straps and fastenings therefor attached to the corset on opposite sides of said opening, substantially as herein set forth.

No. 41,269. Brake. (*Frein.*)

Rhodes Battye, 280 Victoria street, Darlinghurst, Sydney, New South Wales, Australia, 16th December, 1892; 6 years.

Claim.—1st. In fluid pressure automatic brake mechanism a cylinder, provided with annular grooves, whose piston is in combination with a rigid stem forming a quadruple valve, such valve having seatings for opening and closing passages in an outer casing, such passages being connected with the annular grooves in the main casing of such cylinder, the aforesaid rigid stem having therein a central valve seating itself on the reverse side of the piston so as to yield to external pressure only, for establishing communication either with or without the medium of a controlling valve, between the train pipe and the auxiliary reservoir, for the purpose of putting on or taking off the brake, substantially as described and shown. 2nd. In fluid pressure automatic brake mechanism used for operating either single or double brake cylinders for putting on or taking off the brake, a piston, such as 6 and 7, having a rigid stem forming a quadruple valve, in combination with a controlling valve for diverting the air from the under side of the piston to the reverse side and thence through perforations or passages in the rigid stem to an inner chamber of the quadruple valve and thence to the auxiliary reservoir, substantially as described and shown. 3rd. In fluid pressure automatic brake mechanism fitted with a combined piston and valve or valves, a controlling valve having connections to the train pipe, drip cup, reverse side of a piston having perforations or passages, and auxiliary reservoir causing sufficient movement in the controlling valve as to change the direction of the air current so as to immediately increase the pressure in the auxiliary reservoir, substantially as described and shown 4th. In fluid pressure automatic brake mechanism applicable to pressure cylinders having springs for releasing the brake, a combined piston and quadruple valve fitted with an inner valve above escapement ports, such escapement ports being used to give communication,

upon full stroke of the piston, between the train pipe and through a retention valve and chamber, direct to the brake cylinder, for the purpose of augmenting the supply of air to the brake cylinder, substantially as described and shown. 5th. In fluid pressure brake mechanism the use of a cylinder, such as 1 and 2, having a combined piston and valve such as 6 and 7, designated a quadruple valve, in combination with a controlling or safety valve, all substantially as described and shown and for the purposes set forth.

No. 41,270. Method of Preserving Wood.

(*Méthode de préserver le bois.*)

Paul Gassen, Cologne, Prussia, 16th December, 1892; 6 years.

Claim. 1st. The hereinbefore described method of emboss wood, consisting in embossing the same pattern upon the back and front, and thus producing the same conditions of compression on both surfaces, substantially as and for the purpose hereinbefore described. 2nd. The hereinbefore described method of treating embossed wood, consisting in impressing the back of the wood with conical or cubical teeth or pegs, and thus producing similar conditions or compression in both surfaces, substantially as hereinbefore described. 3rd. In the production of embossed wood articles, compressing the dry wood, treating the compressed wood with an anti-hygroscopic or water repellant or compound, and thereafter embossing it, substantially as and for the purpose hereinbefore described.

No. 41,271. Steam Engine. (*Machine à vapeur.*)

Charles Dell Mosher, Amesbury, Massachusetts, U. S. A., 16th December, 1892; 6 years.

Claim.—1st. In a quadruple expansion engine, the combination, with two pairs of steam cylinders, each pair consisting of two cylinders having valve chests or cylinders cast integral with them, and a connection pipe joining the two pairs of valve cylinders, valves in said valve chests or cylinders, a main or crank shaft, and eccentrics on said crank shaft operatively connected to said valves, the said valve chests having their ports arranged substantially as described, to afford a substantially straight exhaust through the engine, as set forth. 2nd. In a quadruple expansion engine, the combination, with two pairs of steam cylinders, each pair consisting of two cylinders having valve chests or cylinders, a crank shaft provided with two sets of cranks, one for each pair of cylinders, the cranks of one pair being set at an angle of substantially 180 degrees, and the cranks of the second pair being set at an angle of substantially 180 degrees to each other, but at an angle of substantially 90 degrees to the first set of cranks, a bed plate, and a supporting frame for the cylinders, consisting of a plurality of columns and braces, substantially as described. 3rd. In an engine, the combination, with the steam and valve cylinders, a bed or foundation, and a crank shaft supported by the bed, of a supporting frame composed of columns interposed between the cylinders and bed, braces or connections between said columns, and means for adjusting said connections to subject them to a tensile strain, and the columns to a compressive strain, as set forth. 4th. In an engine, the combination, with the steam and valve cylinders, a bed plate or foundation, and a crank shaft supported by the bed plate, of a supporting frame for the cylinders consisting of supporting columns secured to the said cylinders and bed plate, and braces connected to the said columns and adjusted under a tensile strain, whereby the said supporting columns are subjected to a compressing strain only, substantially as described. 5th. In a quadruple expansion engine, the combination, with two pairs of steam cylinders, each pair consisting of two cylinders having valve chests or cylinders, a crank shaft provided with two sets of cranks, one for each pair of cylinders, the cranks of one pair being set at an angle of substantially 180 degrees, and the cranks of the second pair being set at an angle of substantially 180 degrees to each other, but at an angle of substantially 90 degrees to the first set of cranks, a bed plate, and a supporting frame for the cylinders consisting of a plurality of columns and braces, two eccentrics on the crank shaft, a rock shaft supported by the columns and connected to the valves of one pair of cylinders and to one eccentric, and a second rock shaft supported by the columns and connected to the valves of the other pair of cylinders and to the second eccentric, substantially as described. 6th. In a quadruple expansion engine, the combination of two pairs of steam cylinders, each comprising two cylinders, the four cylinders being arranged in a line, two pairs of valve chests or cylinders accompanying said cylinders, pistons in the steam cylinders, a bed plate, a crank shaft supported thereby and provided with two sets of cranks relatively arranged as shown, two sets of piston valves in the valve chests or cylinders, a rock shaft to which one set of valves is connected, a second rock shaft to which the valves of the other set are connected, eccentrics located side by side on the crank shaft, and connected with said rock shafts, said eccentrics being located between the centre of the second intermediate cylinder and the centre of the low pressure cylinder, said location of the eccentrics permitting the employment of the maximum length of bearing surface and the minimum length of shaft and of the series of cylinders, as set forth. 7th. In a quadruple expansion engine, the combination of the following instrumentalities, viz.: two pairs of steam cylinders, each comprising two cylinders, two pairs of valve chests or cylinders cast integral with said cylinders and connected together, pistons in the steam cylinders, a bed plate, a crank shaft supported thereby and provided with two sets of cranks, each consisting of two cranks set at substantially an angle of 180 degrees to one another, the cranks of one set being at substantially an angle of 90 degrees to the cranks of the other set, two sets of piston valves in the valve chests or cylinders, a rock shaft to which one set of valves is connected, a second rock shaft to which the valves of the other set are connected, an eccentric on the crank shaft connected to one rock shaft, a second eccentric to which the other rock shaft is connected, and a supporting frame for the said cylinders and rock shafts consisting of columns d, d^1, and braces d^2, d^3, placed under a tensile strain and subjecting said columns to a compressive strain, substantially as described.

No. 41,272. Motor for Vehicles. (*Moteur pour voitures.*)

Friedrich Ruhs, Burg-a-Fehmarn, Prussia, 16th December, 1892; 6 years.

Claim. 1st. In spring motors for wheeled vehicles, a series of tightened springs, which come after each other into action and thereby act continuously upon the driving shaft, whilst during the running the loosened springs are again tightened, all constructed and acting substantially as set forth. 2nd. In spring motors for wheeled vehicles the arrangement for acting on the springs, distinguished by several toothed segments mounted and revolving on the same shaft, operated by a lever G, by the driver of the vehicle, and acting to tighten the springs F, the latter being locked by means of the shaft d, and the clutch or hook of lever D, while by drawing back the handle G, and loosing the lever D, by thumb piece of lever E, the power acquired by the springs F, F^1, F^2, is employed to drive the main axis of the road wheel through the ratchet S, all acting substantially as and for the purposes set forth. 3rd. With the spring motor claimed by claim 1 the arrangement for the tightening of the spring F, F^1, F^2, consisting of the rod P, which can be pressed by means of the spindle J against the springs F, and thereby tighten the latter, with the object of facilitating a storage of greater power for movement upon mountainous ground, substantially as set forth. 4th. With the spring motor as specified under claims 1 and 2, the arrangement of a brake, consisting of the lever K, revolving round the axis of the toothed wheel segment C, which acts upon the driver B, and can be pressed against the latter by the thumb piece M, of the hand lever L, for the purpose of braking the carriage, substantially as set forth. 5th. A spring motor for wheeled vehicles as specified under claim 1, distinguished by a number of spiral springs which are brought into mechanical connection with the driving shaft f, of the carriage whereby the free running motion obtained on descending an incline is used for the tightening of the springs, whilst the carriage upon an ascending or horizontal track is driven by their stored power, all constructed and acting as and for the purposes herein described with special reference accompanying drawings.

No. 41,273. Process of Purifying Liquid.

(*Procédé pour purifier les liquides.*)

Samuel Hunter Millikin, assignee of Courtland Williams Brunson, both of Hamilton, Ohio, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. The process of purifying spirituous liquor or other liquid, by means of the application thereto of electrolysis, while said liquor or liquid is kept in a state of frigidity approximating its freezing point. 2nd. The process of purifying spirituous liquor or other liquid consisting in first reducing the temperature thereof to near its freezing point, and then submitting it to the action of electricity.

No. 41,274. Hose Coupling. (*Joint de boyau.*)

Edward Ethel Gold, assignee of John Balmore, both of New York, State of New York, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. In a pipe coupling, the combination of a coupling head or section having a hemispherical socket, a seat consisting of a segment of a sphere fitting in said socket, and a fastening engaging the seat and head to hold the seat in place in said socket, and pivotally connected to the seat to permit of a rocking movement of the latter. 2nd. In a pipe coupling, the combination of a coupling head or section having a semi-spherical socket, a seat consisting of a segment of a sphere fitting in said socket, and a spring fastening engaging said seat, formed to make engagement with the interior of said head, whereby to hold the seat in place in said socket and adapted to yield sufficiently to enable it to be withdrawn to remove the seat. 3rd. In a pipe coupling, the combination of a coupling head B, having socket e, and grooves i, i, rocking seat E, and fastener H, consisting of pivotal ends engaging said seat, and outwardly springing portions h, h, engaging said grooves. 4th. In a pipe coupling, the combination of a coupling head B, having socket e, rocking seat E, and fastener H, consisting of pivotal ends engaging said seat, outward loops h, h, engaging the interior of the head, and intervening loop j, for facilitating the pulling out of the fastener. 5th. In a pipe coupling, the combination of a coupling head or section having a semi-spherical socket and stops g, g, with a seat consisting of a segment of a sphere fitting in said socket, and stop projections f, f, engaging said stops to limit the movement of the seat. 6th. In a pipe coupling, the combination of a coupling head or section having a hemispherical socket, and notches g, g, back of

said socket, with a seat consisting of a segment of a sphere fitting in said socket and having projections *f*, *f*, entering said notches, whereby the relative displacement of the seat is prevented. 7th. In a pipe coupling, the combination of a coupling head having a direct longitudinal passage through it terminating in a seat at its end, a locking arm on one side projecting beyond the plane of the seat, and a locking projection on the other side, said locking arm having a wedging face *d*, formed in an eccentric curve extending to the middle line of the coupler at d^1, and continued beyond said line in a curve of smaller radius to form an inclined stop for limiting the angular engagement of the respective coupling heads. 8th. In a pipe coupling, the coupling head having a hemispherical socket, in combination with a self adjusting seat, consisting of a ring of yielding material formed externally as a segment of a sphere, having a central opening, a longitudinal passage therethrough, and a flat outer seating face around said central opening, and a thimble or sleeve of rigid material within said ring, lining said longitudinal passage and preventing the inward expansion of said ring by pressure applied to said seating face, substantially as set forth. 9th. A seat for a pipe coupling, consisting of a ring of yielding material formed externally as a segment of a sphere having a central opening, a longitudinal passage therethrough, of a flat seating face around said central opening, and a thimble or sleeve of rigid material within said ring, lining said longitudinal passage and preventing the inward expansion of said ring, substantially as set forth.

No. 41,275. Method of and Apparatus for Distilling Liquid Hydrocarbons. (*Méthode et appareil pour la distillation des liquides hydrogènes.*)

Paul Dvorkovitz, London, Middlesex, England, 16th December, 1892; 6 years.

Claim.—1st. In apparatus for distilling liquid hydrocarbons, the combination of a double set of oil superheaters, a double set of retorts and a double set of condensers, together with a steam superheater and a device or devices for intimately mixing the steam and oil or oil vapours in the retorts, substantially as and for the purpose set forth. 2nd. The combination of a heated retort and perforated oil (or light tar) and steam pipes, the said pipes being arranged in the said heated retort, for the purpose of producing intimate admixture without condensation, substantially as set forth.

No. 41,276. Process of and Apparatus for Distilling Oil. (*Procédé et appareil pour la distillation de l'huile.*)

Allan Mason, Brooklyn, New York, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. The process of continuous fractional distillation of petroleum and other analogous oils in repeated steps of continuous succession and increased heat, in which the previously unvapourized oil is successively treated, which consists of introducing the oil and steam together, and causing the instantaneous junction of the same collectively in an atomized condition in the several heated chambers successively, instantaneously separating, in the several chambers the portions vaporable by the respective temperatures accellerating the movement of both the vapourized and unvapourized oil along the retort chambers to their respective exit passages by the impulse of the steam jets, exposing the vapourized portions all alike to the same conditions of time and heat in the respective chambers, similarly exposing all the unvapourized portions therein, and likewise and instantaneously removing both vapourized and unvapourized portions to the condensers and successive sections of the retort respectively, so that all portions of each have like exposure to the heat and steam in the respective chambers, substantially as described. 2nd. The combination, in a still, for continuous fractional distillation, of the continuous pipe retort comprising a series of successive chambers, each having the oil inlet and a steam injector at the receiving end impinging the steam jet on the entering stream of oil, so as to instantly atomize it in one body and project the same along the chamber to the opposite end, and each section having a vapour exit and oil exit thereat through which the vapour and oil respectively escape, the one to the condenser and the other to the succeeding section of the retort, the arrangement being such that all of both the vapour and unvapourized oil have like exposure as to heat and time in the respective sections of the retort, substantially as described. 3rd. The combination, in a still, for continuous fractional distillation, of the continuous pipe retort, comprising a series of successive chambers, each having the oil inlet and a steam injector at the receiving end, impinging the steam jet directly on the entering stream of oil, so as to instantly atomize it in one body and project the same along the chamber to the opposite end, and each section having a vapour exit and an oil exit thereat, through which the vapour and oil respectively escape, the one to the condenser and the other to the next section of the retort, the arrangement being such that all of both the vapour and the unvapourized oil have like exposure as to heat and time in the respective sections of the retort, the furnace underneath said pipe retort made in separate sections, each containing a section of the retort, the flues at the opposite extremities of the chamber and the passages and dampers causing the regular or irregular transverse of the heat products through the successive sections of the furnace, substantially as described.

No. 41,277. Spring Hinge. (*Charnière à ressort.*)

Andrew James McCauley, Circleville, Ohio, U.S.A., 16th December, 1892; 6 years.

Claim. 1st. In a spring hinge, the combination with the jointedly connected hinge plates *a*, *b*, of a screw *c*, rigidly connected with the plate *b*, and having offsets c^{ii}, forming as described shoulders *d*, d^1, in said screw thread grooves, guides d^2, on said screw, lugs on said guide entering the thread groove, a guide arm d^{iii}, sliding and supported against said plate and a coiled spring surrounding said screw as described, beneath the guide head d^3, substantially as specified. 2nd. In a spring hinge, the combination with the hinge plates *a*, *b*, a fixed and detachable ring projection on plate *b*, and notched openings as described in said ring projections, of a tubular screw *c*, having squared ends fitting within said ring notches and having offsets in the thread grooves thereof, forming as described shoulders *d*, d^1, guide d^2, surrounding said screw lugs *f*, on said guide entering the screw thread groove, a guide arm d^{iii}, sliding and supported against plate *a*, and a coiled spring inclosing said screw between guide head d^2, and the lower plate projection b^1, substantially as and for the purpose specified.

No. 41,278. Hand Rake for Hay. (*Rateau à foin.*)

Samuel Buschlen, Port Elgin, Ontario, Canada, 16th December, 1892; 6 years.

Claim.—In a hand hay rake a wire bow B, B, having curves or shoulders A, A, substantially as and for the purpose hereinbefore set forth.

No. 41,279. Combined Egg Beater and Masher. (*Vergette de cuisine.*)

Uriah D. Seltzer, Lebanon, Pennsylvania, U.S.A., 16th December, 1892; 6 years.

Claim. 1st. An implement of the class described comprising a ring B, cross head or yoke F, formed integral therewith, cylinder A open at both ends and detachably secured to said ring, plunger rod D, and spring actuated plunger C, substantially as described. 2nd. An implement of the class described, comprising the ring B, the cylinder A, the yoke P, the plunger rod D, and the spring actuated plunger C, sliding in bearing d^1, in the yoke F, substantially as described. 3rd. An implement of the class described, comprising the ring B, the perforated open ended cylinder A, the yoke F, the plunger rod D, the lugs *c*, formed upon the ring B, for engagement with the beaded edge *a*, of cylinder A, the spring actuated plunger C, and the lugs *g*, *e*, cast respectively upon the yoke F, and handle *g*, for retaining the spring G, in position, substantially as described. 4th. An implement of the class described, comprising the handle F, plunger C, plunger rod D, ring B, having lugs *c*, and spring G, and having the removable cylinder A, provided with the flange or head *a*, with notches a^1, substantially as described.

No. 41,280. Gas Meter. (*Gazomètre.*)

James B. Knickerbocker and Edward Kirkpatrick, both of Indianapolis, Indiana, U.S.A., 16th December, 1892; 6 years.

Claim. 1st. In a gas meter, a casing composed of two equivalent parts, inlet and outlet connections on opposite sides of such casing, a flexible diaphragm centrally secured therein, inlet and outlet valves seated in partitions formed in the halves of the casing adjacent to the inlet and outlet openings, a valve rod passing through the diaphragm and connecting such inlet and outlet valves, adjusting spring coiled upon such rod for settling the valve, a bolt passing through the diaphragm having a central opening through which the valve rod loosely passes, a shoe connected to one end of such bolt, a slotted arm pivoted to such shoe, a spring controlled lever pivoted at one end to the casing and to a yoke at the other end which straddles the valve rod, the pivot pin of such levers passing through the slot of the arm connected to the diaphragm, whereby the throw of the valve is automatically effected by the spring lever mechanism when the lever has reached a certain point, all combined, substantially as shown and described. 2nd. In a gas meter, a casing composed of two equivalent parts, inlet and outlet openings on opposite sides thereof, a flexible diaphragm centrally secured therein, outlet and inlet valves seated in partitions formed in the halves of the casing adjacent to the inlet and outlet opening, such valves connected by a rod passing through the diaphragm for securing their simultaneous action, a bolt passing through a central perforation in the diaphragm and loosely mounted on the valve rod, a lever engaging with one end of such bolt and connected to a suitable registering mechanism at the other, a spring controlled lever mechanism pivotally connected to the opposite end of such bolt for automatically effecting the throw of the valves when the levers have passed their centre, substantially as shown and described. 3rd. In a gas metre, a casing composed of two equivalent parts, inlet and outlet connections on opposite sides thereof, a single flexible diaphragm centrally secured therein, such casing providing a channel for the passage of gas through openings in and near the edge of the diaphragm, inlet and outlet valves seated in partitions formed in the halves of the casing adjacent to the inlet and outlet openings, and connected by an adjustable valve rod passing through a central opening in the diaphragm, a spring controlled lever mechanism connected to such rod and to the diaphragm for auto-

matically effecting the throw of the valves when the jointed levers have passed their centre, all combined, substantially as shown and described. 4th. In a gas meter, an automatic lever mechanism for effecting the throw of the valves, connected at one end to a rod uniting the inlet and outlet valves, and at the other to the diaphragm composed substantially of an arm (29) pivoted at one end to the casing, and at the other end to a yoke (34), such lever and yoke also connected on each side by a spring (37), a slotted arm (28), such levers actuated by contact with such arm when operated by the movement of the diaphragm, whereby, when the levers have reached a certain point, the automatic tension of the springs serves to effect the throw of the valves, all combined, substantially as shown and described. 5th. A gas meter comprising a hollow casing composed of two similar halves having inlet and outlet openings on opposite sides thereof, a flexible diaphragm centrally secured between such halves, outlet and inlet valves seated in partitions formed in the casing adjacent to the outlet and inlet openings, an adjustable rod passing through the diaphragm connected to such valves, and means such as a spring lever mechanism normally operating against the pressure of the gas upon the opposite side of the diaphragm, such levers controlled by springs that automatically effect the throw of the valves when the action of the diaphragm has carried the spring levers beyond a certain point in combination with a dial registering mechanism connected with the casing, and actuated by a lever connected on one side of the diaphragm, substantially as shown and described. 6th. In a gas meter, inlet and outlet valves mounted on opposite ends of a rod passing centrally through the diaphragm, in combination with a spring lever mechanism pivoted to the casing and bearing against a projection on the valve rod, whereby a uniform tension is exerted upon the valves at all times, substantially as shown and described. 7th. In a gas meter, inlet and outlet valves connected by a rod passing through the diaphragm, a jointed lever pivoted to the casing having a limited lateral movement, controlled by the springs and bearing against the valve rod, whereby a tension is constantly exerted thereon, substantially as shown and described.

No. 41,281. Folding Ladder. (*Echelle pliante.*)

Ansel Leo, 18 Maclise Road, West Kensingston Park, Middlesex, England, 16th December, 1892; 6 years.

Claim.—1st. The combination in a collapsable ladder, of pairs of ladder sections, tubular rungs and central tubes holding the sections and rungs together. 2nd. The combination in a collapsable ladder, of tubular rungs, central tubes passed through the respective rungs and sections and holding them together, and devices for preventing the rungs moving about their respective axis. 3rd. The combination with a collapsable ladder of a rigid stay formed by moving one rung and two pairs of ladder sections out of the plane of the ladder and inserting a stay section in each side of the ladder, as set forth. 4th. The combination with a collapsable ladder of a head consisting of two rigid triangles held together by transverse ties joining their respectively corresponding angles. 5th. The combination with a collapsable ladder of pairs of stay sections consisting of links connected together. 6th. The combination with a collapsable ladder of a head having one folding side.

No. 41,282. Sad Iron. (*Fer à repasser.*)

Jacob E. Singer, Assignee of Heinrich Koepp, both of Milwaukee, Wisconsin, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. The combination with a hollow sad iron having draft openings in the sides and a movable cover having a depending flange with openings therein, of a shell capable of a limited endwise movement in said iron and having apertures arranged in the sides of the iron and in the cover, said shell having side and end walls corresponding with the sides and ends of the iron and serving as a lining therefor and as dampers for controlling the draft, substantially as and for the purposes set forth. 2nd. The combination of a hollow sad iron having draft openings in the sides near the bottom and a draft opening and damper in the rear end, a cover hinged thereto having openings at or near the edge, and a shell capable of a limited endwise movement in said iron and having openings in the sides arranged to register with the draft openings in the sides of the iron and cover, and openings in the rear end adjacent to the draft openings in the back of the iron and cover, said shell having sides and ends otherwise closed and serving both as a damper for controlling, the draft and as a shield or lining for the iron, substantially as and for the purposes set forth. 3rd. The combination, with a hollow sad iron having draft openings in the sides, of a shell or lining having sides adapted to the inside of said iron and capable of a limited movement therein, said shell or lining being formed with apertures corresponding and arranged to register with the openings in said iron and provided with projections on the inside adjacent to said apertures, substantially as and for the purposes set forth.

No. 41,283. Rachet Brace. (*Perçoir à rochet.*)

William H. Heeson, Toronto, Ontario, Canada, 16th December, 1892; 6 years.

Claim.—1st. The combination with the self feeding rachet brace of a pointed end comprised of a sleeve secured to the body of the brace and a metallic bar adapted to slide within the said sleeve, said sleeve and bar adapted to be adjustably locked together, substantially as described. 2nd. The combination with a self feeding ratchet brace with a pointed end comprised of a sleeve secured to the body of the brace and a metallic bar adapted to slide within the said sleeve, a series of holes formed respectively, diametrically through said sleeve and the said metallic bar, a pin to lock together said sleeve and metallic bar in their adjusted position, said metallic bar having one or both its ends pointed, substantially as described. 3rd. A self feeding ratchet brace comprised of a body having formed in one end a recess to receive the shank of the tool, a lever pivoted to the body and adapted to rotate there around, pawls forming part of the said body, a spring to press the said pawls into engagement with the said ratchet teeth, said springs adapted when desired to be freed from pressing upon the said pawls and means for holding the said pawls out of engagement with the ratchet teeth forming part of the said body to prevent the said lever interfering with the movement of the said body during its rotation, substantially as described.

No. 41,284. Guard for Railway Tracks and Switches.
(*Garde de rails et aiguilles de chemin de fer.*)

Michael Riley, London, Ohio, U. S. A., 16th December, 1892; 6 years.

Claim. 1st. In a guard for railway switches and frogs, the angular sections a^1, a^2, jointly connected at their inner ends and provided with an adjustable tranverse connection at their outer ends, substantially as and for the purpose specified. 2nd. In a guard for railway tracks, the combination with an oblong angular over lapping plates a^1, a^2, jointedly connected at their inner ends as described, and a spring d, connecting the inner faces of the side pieces of said guard sections, substantially as and for the purpose specified.

No. 41,285. Air Valve. (*Soupape atmospherique.*)

Parmelie La Force, assignee of Hippolyte Joseph La Force, both of Toronto, Ontario, Canada, 16th December, 1892; 6 years.

Claim.—1st. An air valve comprised of the socket F, connected to the vessel or tube to be inflated, the plugs H, having a tapered upper portion and a cylindrical lower portion, and provided with a stocking I, designed to fit within the socket, the said plug having a hole K, made in it from the top to a point below the tapered portion, and the movable cap L, provided with a hole l, and adapted to be turned to close said opening, and for the purpose specified. 2nd. An air valve comprised of the socket F, connected to the vessel or tube to be inflated, the plug H, having a tapered upper portion and a cylindrical lower portion, and provided with a stocking I, designed to fit within the socket, the said plug having a hole K, made in it from the top to a point below the tapered portion, and the pin i, designed to fit in one of the notches j, of the socket F, and the cap L, provided with a hole l, and screwed upon the threaded upper portion of the socket F, as and for the purpose specified. 3rd. The combination with the tire tube and branch tube D, of the nozzle E, and nut G, socket F, plug H, provided with a stocking I, and hole K, and cap L, screwed into the threaded upper portion of the socket F, as and for the purpose specified.

No. 41,286. Reel for Wool, Thread or Twine.
(*Dévidoir pour la laine, le fil ou ficelle.*)

James Dennis and Joseph Hilton, both of Manchester, England, 16th December, 1892; 6 years.

Claim.—An appliance for holding wool, twine or the like, consisting of a light wire frame A, to receive the swivel joint B, to give it independent movement, and a hook C, by which it can be attached to any fixed point with or without the loose hinged bar D, substantially as described.

No. 41,287. Device for Distributing Liquid Poison.
(*Appareil pour la distribution des liquides.*)

Myron Joseph Caswell, Castalia, Ohio, U.S.A., 16th December, 1892; 6 years.

Claim.—1st. In a device of the kind described, the combination of the two ground wheels mounted on stub axles, vertical brackets on said axle, and a triangular frame on said brackets supporting the tank and operating mechanism, substantially as described. 2nd. In a device of the kind described, the combination of the two ground wheels mounted on stub axles, vertical brackets on said axle, a triangular frame mounted on said brackets, draft devices, the paddles D^1, tank D and sprinkler operating mechanism, substantially as described. 3rd. In a device of the kind described, the combination with the tank, and a pump, a flexible eduction pipe and a shifting sprinkler tube carrying a series of nozzles connected therewith, substantially as described. 4th. In a device of the kind described, a sprinkler tube slidingly secured to the frame, a series of nozzles on said tube and means for adjusting said tube horizontally, substantially as described. 5th. In a device of the kind described, a sprinkler tube slidingly secured to the frame, a series of depending nozzles on said tube and means for adjusting said tube horizontally and rotatorily, substantially as described. 6th. In a device of the kind described, a sprinkler tube slidingly secured to the frame, a series of nozzles on said tube, means for adjusting said tube and means for adjusting the nozzles vertically and laterally, substantially as described. 7th. In a device of the

kind described, the combination of the tank, the pump, the connection between said pump and the bottom of said tank and a connection between the eduction pipe and the top of the tank, and a spring valve in said pipe normally closed, substantially as described. 8th. In a device of the kind described, the combination with the sliding tube, a series of nozzles thereon, adjustable to or from each other, substantially as described. 9th. In a device of the kind described, the combination with the tank and pump of the supply pipe, a return pipe connecting said supply pipe with the tank, a spring actuated valve in said return pipe normally closed, and a hand lever for opening said valve, substantially as described. 10th. In a device of the kind described, the combination with the tank and pump of the stand pipe M, the return pipe N^1, the spring actuated valve O, the hand lever O^1, the supply pipe M^1 and the valve N in said pipe, substantially as described. 11th. In a device of the kind described, the combination with the shifting supply tube, of a flexible connection between the pump and said supply tube, substantially as described. 12th. In a device of the kind described, the combination with the supporting truck, of the tank, a shaft journalled through said tank carrying a depending blade, a driving connection between the drive wheel and said blade, whereby it is oscillated, substantially as and for the purpose described. 13th. In a device of the kind described, the combination with the tank, the supporting frame and driving mechanism of the shaft F extending through the tank, the stuffing box F^1, and the perforated depending blade secured to said shaft, substantially as described. 14th. In a device of the kind described, a nozzle consisting of a jet secured to the supply tube and a screen arranged below said jet, substantially as described. 15th. In a device of the kind described, the combination of a jet secured to the supply tube, of a reversible screen secured below said jet, substantially as described. 16th. In a device of the kind described, the combination with a jet secured to the supply tube, of the depending spring arms *c*, the ring *d* clamped between the lower end of said arms and the screen *f* within said ring, substantially as described. 17th. In a device of the kind described, the combination with the supply tube of the head *a*, the nozzle *b*, the spring arms *c*, the ring *d* having pins *e* pivoted in the lower end of said arms and the screen *f* within said ring, substantially as described. 18th. In a device of the kind described, the combination with the shifting tube, of the depending supply tube Q having the horizontal portions Q^2 adjustably engaging with the shifting tube, substantially as described. 19th. In a device of the kind described, the combination with the tank, pump and flexible connecting pipe, of the tube P^1 slidingly engaging in suitable bearings and carrying a series of depending nozzles, of the hand lever R adjustably secured to said tube, the finger R^{11} and a notched bar S, substantially as described

No. 41,288. Freezer for Ice Cream.

(Machine à congélation pour la crème à la glace.)

David C. Camp, Gainesville, Georgia, U. S. A., 16th December, 1892; 6 years.

Claim.—1st. The process of freezing, which consists in inclosing the liquid to be frozen, in an air tight mould, then inclosing said mould in a suitably constructed air tight receptacle containing a refrigerant, and agitating the same, substantially as and for the purpose specified. 2nd. The combination, with a suitable receptacle, provided with an air tight removable cap, of a mould of vessel of a size smaller than said receptacle and adapted to be inserted therein, and provided with an air tight removable cover, whereby the refrigerant contents of the receptacle are prevented from coming in contact with the contents of the mould, substantially as and for the purpose set forth.

No. 41,289. Cover for Ink Wells.

(Couvercle pour encriers.)

Almerin Ratio Sprague, Milwaukee, Wisconsin, U. S. A., 16th December, 1892; 6 years.

Claim.—1st. An improved cover for ink wells, comprising a covering plate and an elongated stem formed integrally or rigidly therewith, and extending downward therefrom, and constituting the sole metallic surface upon which it or they may rub lightly each time the said operating device is actuated, whereby a clean metallic contact is always maintained between the rubbing surfaces with a minimum pivot for the cover, substantially as described. 2nd. An improved covering for ink wells comprising a covering plate, an extension projecting laterally from said plate and having a convex underside, and a stem or pivot extending downward from the outer end of the extension, substantially as described. 3rd. An improved cover for ink wells, comprising a covering plate, an extension projecting laterally from said plate and having a convex underside, and a stem or pivot extending downward from the outer end of the extension, and provided at its lower end with a finger piece, substantially as described. 4th. The combination, with a desk top, having an aperture to receive an ink well, a vertical opening or socket, and a groove connecting the upper end of the socket with the aperture, of a well cover comprising a covering plate, an extension projecting laterally from the covering plate and having a convex underside, and a stem or pivot extending downward from the outer end of the extension, and having a finger piece at its lower end, substantially as described. 5th. The combination, with a desk top, having an aperture to receive an ink well, and a groove extending laterally from said aperture, of a cover comprising a plate to fit the aperture, and a lateral extension having a convex underside, whereby the cover and its extension shall lie flush with the top of the desk, when the cover is closed, and whereby also the cover shall be held up out of contact with the desk top by the convex portion when the cover is open, substantially as described.

No. 41,290. Rotary Engine. (*Machine rotative.*)

Philip Francis Oddie, Chelsea, Middlesex, England, 17th December, 1892; 6 years.

Claim.—1st. A case or chamber of cylindrical form, with approximately centrical inlet and peripheral outlet in combination with concentrically mounted segmental pieces and eccentrically mounted curved arms linked together by bridge pieces, so as to co-operate together to effect intake and discharge of fluid, substantially as and for the purposes hereinbefore set forth. 2nd. A case or chamber of cylindrical form, having an approximately central inlet opening and a peripheral outlet, in combination with an eccentrically rotating set of arms, and blades or bridge plates held connected and in substantially close relation to the inner circumference of the cylinder, substantially as set forth. 3rd. A cylindrical case or chamber having an approximately central inlet and a peripheral outlet, in combination with rotary parts for effecting the successive intakes and discharges of fluid, substantially as set forth. 4th. An arrangement of rotary parts, capable of effecting partial hold or cut off, of the fluid eccentrically supported within a case or chamber having an approximately centrally arranged inlet and peripheral outlet, so as to obviate obstruction of feed and facilitate delivery. 5th. The arrangement or combination and use of parts co-operating with a case, or containing cylinder with an inlet approximately central and an outlet approximately peripheral, substantially as set forth.

No. 41,291. Electric Lamp Holder.

(Porte lampe électrique.)

James J. Wood, of Fort Wayne, Indiana, U.S.A., 17th December, 1892; 6 years.

Claim.—In an electric lamp holder, the movable terminal push *m*, and contact *n*, connected thereto, with a contact *o*, of opposite polarity on which it normally seats, substantially shown and described. 2nd. In a lamp holder, the combination, with the fixed socket *a*, forming one polar terminal, and the movable push m^1, forming the other terminal, of a contact *n*, attached to said latter terminal, a seating contact *o*, of opposite polarity, a spring tending constantly to close said contacts *n*, *o*, substantially as and for the purpose set forth. 3rd. In a holder for electric lamps, the combination, with the movable conducting push m^1, adapted to contact with one terminal of the lamp when inserted in its socket, of the plate *n*, attached to said push m^1, and having one polarity, with a thin disruptible insulator *s*, on said plate, and a contact spring *u*, resting on said insulator and connected with the terminal of opposite polarity, substantially as and for the purpose set forth. 4th. In a holder for incandescent electric lamps, the combination, to form a disruptive cut-out, of a rotary conducting table connected to one terminal, a thin disruptible insulating layer or disc thereon, and a contact tongue bearing on the opposite side of said disc, and connected to the opposite terminal, substantially as set forth. 5th. In a disruptive cut-out, the combination with the rotary table *n*, axial spindle *m*, and bearing 1^1, of the disruptible insulator *s*, and contact spring *u*, arranged and operating, substantially as shown and described. 6th. In an electric lamp holder, adapted for serial circuits, the combination, with a hand switch arranged, when closed, to form a short circuit between the terminals, of a spring tending constantly to open said switch, whereby when said switch is released it opens instantaneously, substantially as and for the purpose set forth. 7th. In an electric lamp holder, adapted for serial circuits, a movable contact maker arranged in the receiving socket for the lamp and in the path of the lamp, so arranged that when the lamp is inserted the contact is opened, and *vice versa*, with a distinct hand switch arranged, when closed, to short circuit or cut out the lamp and said contact maker, with a spring tending constantly to open said switch, whereby when the switch is released the short circuit is broken instantly and the lamp switched in without danger of arcing at the movable contact maker, substantially as herein set forth. 8th. In an electric lamp holder, the combination, with a hand switch arranged, when closed, to short circuit or cut off the lamp, of a spring tending constantly to open said switch instantaneously and a catch to hold said switch closed until designedly released, substantially and for the purpose set forth. 9th. In an electric lamp holder, the combination, with the insulating base *c*, of the ring *h*, and legs K, K^1, with the bracket I, socket *a*, push m^1, spindle *m*, contact *n*, and contact *o*, substantially as shown and described. 10th. The combination, with the head *b*, and insulating plate *c*, secured thereto, of the ring *h*, secured to the plate, socket *a*, secured to the ring, external casing *d*, and insulating nut a^1, arranged substantially as shown and described. 11th. In a disruptive cut-out, the combination, with a rotary conducting table *n*, disruptible insulator thereon, and contact tongue bearing upon same, of an axial spindle extending from said table, a bearing sup-

porting the same, and an operating head on the end of said spindle, substantially as shown and described.

No. 41,292. Friction Clutch. (*Embrayage à friction.*)

Arthur Wells Robinson, Bucyrus, Ohio, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. In a steam operated friction clutch, the combination with the shaft upon which the clutch mechanism proper is mounted, the steam cylinder, piston and piston rod, of intermediate operating mechanism connected with said piston rod and clutch mechanism proper, and working within and at right angles through but independently of said shaft, which is hollowed and slotted to accommodate such operating mechanism, as set forth. 2nd. In a steam operated friction clutch, the combination with the shaft upon which the clutch mechanism proper is mounted, the steam cylinder, the piston and piston rod, of intermediate operating mechanism comprising two sliding bars at right angles to each other, connected with said piston rod and clutch mechanism proper, working within and at right angles through but independently of said shaft, and having an oblique sliding frictional connection, the one with the other, for the purpose set forth. 3rd. In a steam operated friction clutch, the combination with the shaft upon which the clutch mechanism proper is mounted, the steam cylinder, piston and piston rod, of intermediate operating mechanism comprising a horizontal sliding bar connected at one end with the piston rod and fitting within the said shaft, which is hollowed to receive it, a vertical bar with one end connected to the clutch mechanism proper, and the other end extending through said shaft and horizontal bar, both of which are slotted to receive it, and an oblique tongue and groove sliding connection between said bar, as set forth. 4th. The combination of the clutch mechanism proper, the shaft A, the steam cylinder P, the bar D, actuated thereby and having end motion within the hollow of said shaft and also having formed within it grooves and tongues T, T, at a suitable angle to the axis of the bar, and the bar J, also grooved to fit between the two halves of the bar D, at right angles with the same, substantially as and for the purposes set forth. 5th. The combination with the shaft A, steam cylinder P, and the clutch mechanism proper, of the internally grooved bar D, the externally grooved bar J, and the slots in said shaft for containing the same at right angles to each other, so that they can reciprocate without exterior end motion upon the shaft, substantially as and for the purposes described. 6th. The combination of the bar J, having end movement radially to the wheel E, and the toggles K and L, supported upon the rim of the wheel E, and the means by which the end thrust of the toggles is transmitted to the band O, substantially as and for the purposes described.

No. 41,293. Ink Stand. (*Encrier.*)

William James Sawyer, of Elmfield, Surry, England, 17th December, 1892; 6 years.

Claim.—1st. An inkstand consisting of a closed collapsible containing vessel connected by a tube with an open dipping well, substantially as specified, the vessel and dipping well being adjustable as to the height relatively to one another, by any suitable means. 2nd. The herein described ink stand consisting of a horizontal closed collapsible, containing vessel connected by a flexible tube with an open dipping well, in combination with a supporting cradle vertically adjustable with regard to the dipping well. 3rd. The herein described ink stand consisting of a horizontal closed, collapsible, containing vessel connected by a flexible tube with an open dipping well, in combination with a supporting cradle carried and rendered vertically adjustable by pairs of levers operated substantially as and for the purpose specified.

No. 41,294. Electric Motor. (*Moteur électrique.*)

Charles Joseph Van Depoele, Lynn, Massachusetts, U.S.A., 17th December, 1892; 6 years.

Claim. The electric motor substantially as described, consisting of a multiplicity of electro magnetic coils connected to a suitable source of pulsating currents and having reciprocating pistons working on the same shaft, together with the method of applying such motors to the propulsion of vehicles.

No. 41,295. Organ or like Musical Instrument. (*Orgue, etc.*)

Robert Hope Jones, of Birkenhead, Chester, England, 17th December, 1892; 6 years.

Claim.—1st. In an electric organ, the combination of a series of electrical transmitting devices operated by the performer, a corresponding series of electrically operated actions within the organ, a series of wires forming parts of electric circuits and connecting said transmitting devices with their respective actions and one more test boards on to which said wires are led at a point or points intermediate to said devices and actions, substantially as described. 2nd. The combination of the battery F, key contacts B, B^1, coupler board D, test boards C, C^1, electro pneumatic levers E, and wires connecting said parts successively in their several circuits, substantially as described. 3rd. In an electric organ, the combination with the organ proper, of a console carrying the keys, pedals and other transmitting devices and capable of being moved from place to place as desired, and a flexible electric cable connecting the console to the organ proper and adapted to be paid out or coiled up as the position of the console is varied, substantially as described. 4th. In an electric organ, a flexible electric cable connecting the organ proper and the console consisting of a central insulated supply lead of bare wires surrounded by a sufficient number of separated insulated wires, substantially as described. 5th. In combination with the console building frame G^1, having a series of electric contact devices for the pedal keys, a separate portable pedal board G, carrying said keys, and a guiding device adapted, when the pedal board is moved up against the console building frame, to guide the keys into position above their respective contact devices, substantially as described. 6th. The combination of the portable console frame G^1, the key frames G^2, adjustable as a whole thereon, and the separate portable pedal frame G, substantially as described. 7th. In an electric organ, the combination, with a series of finger keys, and a series of contact devices adapted to be closed and opened thereby, of a hinged frame upon which said keys contacts and their immediate connections are mounted, whereby a ready access may be obtained to the keys, contacts and connections without altering the relative positions of the same, and the keys may be actuated and their notes sounded or stops or couplers operated while the frame is thrown back, and said contacts and connections are fully exposed to view, substantially as and for the purposes described. 8th. In an electric organ, two or more superposed frames hinged one upon the other and carrying respectively, the manuals and stop keys with their various contact devices and immediate connections, the lowermost frame being hinged upon a supporting bed, and each being capable of being thrown back separately, substantially as and for the purposes described. 9th. In an electric organ, the combination, with an operating device actuated at will by the performer, of an electric contact device comprising one or more metallic points and an adjacent metallic surface upon which it or they may rub lightly each time the said operating device is actuated, whereby a clean metallic contact is always maintained between the rubbing surface with a minimum amount of friction, substantially as described. 10th. In an electrical organ, a contact device consisting of two or more cylindrical metallic bodies crossing each other at an angle, and rubbing lightly one upon the other as described at each operation of an external device actuated at will by the performer, substantially as and for the purpose described. 11th. In an electric organ, a contact device consisting of one or more flexible metallic wires and a more or less rigid metallic wire lying approximately at right angles thereto and adapted to be rubbed lightly thereagainst at each operation of an external device, substantially as described. 12th. In an organ, a series of oscillatory spring balanced stop keys arranged in one or more rows above or below and in proximity to one or more of the manuals, whereby the parts operated by said keys may be brought into or put out of action by the lightest touch or glissando movement of the performer's finger without his having to remove his hands from the manual keys, substantially as described. 13th. In an electric organ, an oscillatory stop key arranged conveniently to the performer, and furnished with one or more electric contacts for the purposes described, in combination with a light spring device adapted to hold the key in its extreme positions and prevent it from resting in any intermediate position, substantially as and for the purpose described. 14th. The combination with an oscillatory stop key, of a flat spring h^3, approximately perpendicular thereto, and a pointed pin h^4, inserted between the free end of the spring and the adjacent end of the key in such a position that it points to opposite sides of the key axis when the key is in its extreme positions, substantially as and for the purpose described. 15th. The combination with the oscillatory key H, and a device for holding it in its extreme positions as described, of the outwardly curved flexible metallic contacts H^1, H^2, located one behind each end of the key, and each adapted to effect a rubbing contact on the back thereof, when the key is pressed against it, substantially as described. 16th. In an organ, the combination, with a pair of oscillatory stop keys having their finger plates working one through the other, as described, of a connecting device whereby the depression of one finger plate effects the elevation of the other, and a light spring device adapted to hold the keys in their extreme positions and to prevent them resting in an intermediate position, substantially as described. 17th. The combination of the levers H^3, H^4, pivoted as described, the adjustable pin h^{14}, connecting the levers, and the spring device h^5, h^4, applied to the lever H^3, the whole arranged, substantially as described. 18th. In an organ, a stop rod or key capable of a limited oscillatory movement in a vertical direction about its rear end, and also of a limited longitudinal movement as a whole, in combination with a light spring device tending to move the forward end of the key in one direction vertically and to thrust the key forward as a whole, and a retaining device for holding the key in its rearward position, with its forward end in one of its extreme vertical positions, whereby a light downward or upward touch on the forward end of the key causes it to spring forward into the speaking position, whilst a light rearward touch is sufficient to replace it in the silent position, substantially as described. 19th. The combination of the stop key H^5, capable of a limited amount of oscillation in a vertical direction about its rear end, the spring h^{17}, pressing the key forward, the spring h^{16}, elevating its forward end, the detent h^{25}, h^{24}, and stops for limiting the longitudinal movement of the key, substantially as described. 20th. In an electric organ, the combination with all the stop key and coupler key circuits of the entire organ, of a stop switch connected

to said circuits and adapted when operated by the performer to instantaneously make or break all the said circuits, substantially as and for the purpose described. 21st. In combination with a series of counterbalanced oscillatory stop keys, a composition roller lying transversely to the keys, and having a series of projecting pieces adapted to operate the keys when the roller is partly turned in one direction, and a counterbalancing device for returning the roller to its original position when released by the operator, whereby the desired combination of stop keys is instantaneously brought into action, but each key of the combination is left free to be subsequently operated independently of the others, substantially as described. 22nd. In combination, with a series of counterbalanced stop keys, a composition roller lying transversely thereto, a pair of projections on each stop key one on each side of the roller, and a series of projecting pieces on the roller, each piece adapted to engage one or other of the projections on the adjacent key, (according to the predetermined arrangement of the pieces) when the roller is partly turned in one direction, whereby the stop keys may, by a partial revolution of the roller in one direction be placed in the "on" and "off" positions, necessary to secure the desired combination of stops, substantially as described. 23rd. The combination, with a series of pairs of coacting oscillatory stop keys as described, of a composition roller lying transversely thereto, and a series of projecting pieces on the roller each adapted (according to the predetermined arrangement of the pieces) to operate one or other member of the adjacent pair of keys, when the roller is partially turned in one direction, substantially as and for the purpose described. 24th. The combination, with a series of pairs of coacting oscillatory stop keys as described, of a composition roller lying transversely thereto, a series of adjustable pins mounted transversely upon the roller and each adapted to engage the adjacent key when the roller is turned as described, and means for adjusting said pins in such manner that when the roller is so turned one or other key of each pair may be operated if not already otherwise operated, substantially as described. 25th. The combination, with the oscillatory coacting keys H^3, H^4, of the composition roller J^1, lying transversely thereto, the split pins J^2, sliding in transverse holes in the roller, one in proximity to each key, and the retaining pins j^3, fitting into notches j^4, in the sides of the pins, in either of their two longitudinal positions, substantially as described. 26th. The combination, with a series of oscillatory stop keys arranged in coacting pairs as described, of a composition roller lying transversely to the keys, and a series of pins pivotally mounted on the roller in proximity to their respective pairs of keys, as described, and each adapted to be turned about its pivot in either direction to bring its striking end opposite to one or other of the keys of the adjacent pair, substantially as described. 27th. The combination, with a series of oscillatory stop keys, arranged in coacting pairs as described, of a rotatable and longitudinally reciprocating composition roller lying transversely thereto, a series of pins pivotally mounted on the roller in proximity to their respective pairs of keys as described, striking pieces located at the outer or remote sides of the keys of each pair as described, and projecting beyond the parts of the keys to be struck by the pins when the roller is turned, a retaining device for holding the roller normally with its pins located centrally to their respective pairs of keys, and means for reciprocating the roller to each side of such normal position to bring each of its pins into contact with one or other of the adjacent striking pieces whereby any desired composition may be set for subsequent use by temporarily arranging the stop keys as required and reciprocating the roller longitudinally, substantially as described. 28th. The combination of the coacting levers H^3, H^4, the rotable and longitudinally reciprocating roller J^1, the pivoted pins J^3, mounted on the roller, the striking pieces J^{3*}, on the levers at the notches j^{10}, therein, and means for reciprocating the rollers longitudinally to each side of its normal or central position, substantially as and for the purpose described. 29th. In an organ, the combination with mechanism for operating one or more of the stops, of an operating key therefor pivoted about its rear end and having its forward end inclined to the manuel keys as shown and located above the said keys at such a distance therefrom as to be readily accessible to the performer's fingers without his raising his hands from the keys, substantially as described. 30th. In an organ a series of stop keys and a composition roller adapted to operate said keys as described, in combination with an operating key, mechanism connecting the key and roller to secure the partial rotation of the latter on the depression of the key, and a spring for returning the roller to its normal position on the release of the key, substantially as described. 31st. In combination with a series of stop keys and a composition roller J^1, for operating the same, the downwardly inclined operating key J, pivoted at its rear end, the chain wheel j^2, on the roller, the adjustable chain j^1, connecting the wheel and key, and a device for returning the roller and key to their normal positions on the release of the key, substantially as described. 32nd. In combination with a series of stop keys H^5, provided with counterbalancing devices as described, a roller J^1, lying transversely thereto, a series of projections J^4, arranged one on each key at one side of the roller, a second series of projections J^5, arranged in a similar manner at the opposite side of the roller, one or more pieces j^7, on the roller adapted when the roller is turned in one direction to strike the adjacent projections J^4, and depress their keys, and one or more pins j^8, adapted on the said turning of the roller to engage the adjacent projections J^5, and thrust their keys rearward, substantially as described. 33rd. In an electric organ, the combination of a coupler board D, a series of insulated pins D^1, arranged in rows thereon as described and connected in circuit with the ordinary *i.e.*, "own note" contacts of their respective manuel or pedal keys, a second series of insulated pins D^2, arranged one in proximity to each pin D^1, and each connected in circuit with the additional coupler contact of that key to which the note belongng to the adjacent pin D^1, is to be coupled, a series of roller switches D^3, arranged one in proximity to each row of pins and each provided with insulated contacts adapted to connect each adjacent pair of pins D^1, D^2, when the roller is turned, and operating devices for turning one or more of said rollers as desired, substantially as described. 34th. In an electric organ, the combination with a series of manual or pedal keys, of a corresponding series of coupler contact devices each adapted to be closed by the depression of its respective key, a series of separate wires connecting the corresponding members of said contact devices directly with the electrically operated actions of the notes to be coupled to their respective keys said actions being also connected to one terminal of the electric supply, a single line of wire connecting all the other members of the said contact devices with the other terminal of said supply, and a coupler switch capable of being operated at will by the performer to break or join up said single line, substantially as described. 35th. In an electric organ, the combination with a series of pedal or manual keys, of a pair of contact pins B^2, B^{2*}, for each key, a contact piece B^6, for and movable with each key and rubbing against the adjacent pins B^2, B^2, when the key is depressed, wires d, connecting the pins B^2, with the electric actions of the notes to be coupled to their respective keys, wire F^3, d^{12}, connecting all the pins B^{2*}, to battery, and switch H, H^{1*}, controlling wire F^3, d^{12}, substantially as described. 36th. In an air controlling device for an organ, the combination, with an approximately flat faced valve capable of reciprocating to and from its seat, of a valve seat pierced with one or more fine openings formed and arranged in such manner as to present within a limited area a greatly extended edge past which the air may escape at each movement of the valve, substantially as and for the purposes described. 37th. In an air controlling device for an organ, the combination with an approximately flat faced valve capable of reciprocating to and from its seat, of a valve seat pierced with a numerous series of small openings, substantially as and for the purposes described. 38th. In an air controlling device for an organ, the combination with an approximately flat faced valve capable of reciprocating to and from its seat, of a valve seat pierced with a series of fine port holes each surrounded at its outer (or valve) end with a narrow projecting strip forming a bearing face for the valve, substantially as and for the purposes described. 39th. In an air controlling device for an organ, the combination of the reciprocating disc valve E^3, and the valve seat E^4, provided with a series of fine perforations e^{25}, substantially as described. 40th. In an air controlling device for an organ, the combination of the reciprocating disc valve E^3, and the adjustable tube e^{13}, having its closed end pierced with a series of fine perforations each surrounded at its outer end by a narrow strip e^{26}, forming a bearing face for the valve, substantially as described. 41st. In an electro-pneumatic action for an organ, the combination, with a horse-shoe electro magnet, of a wind passage opening out in close proximity to the poles thereof, an approximately flat valve seat opposite said poles, and a disc valve inserted between the seat and magnet poles and adapted, when the magnet is energized, to be drawn bodily from its seat against both the magnet poles and to thereby close the wind passage, substantially as described. 42nd. The combination of the horse-shoe magnet E^2, the supporting plate e^{12}, having a wind aperture E^{13}, located as described, the valve seat E^4, and the light disc valve E^3, of attractable material reciprocating between the seat and both magnet poles, substantially as described. 43rd. The combination, of the horse-shoe magnet E^2, the supporting plate e^{12}, having its surface flush with the poles of the magnet, and provided with a wind aperture E^{13}, between and partly surrounding the poles, the adjustable perforated valve seat E^4, opposite the magnet poles, the light armature valve E^3, reciprocating bodily between the seat and the poles, and the valve guide pins e^{14}, substantially as described. 44th. In an electro-pneumatic lever for an organ, a horse-shoe electro-magnet located in the inoperative position of the lever, with both its poles in close proximity to a light armature valve having a small travel, whereby, when the magnet is energized, the magnetic fluid is fully concentrated upon the armature valve, and the magnetic circuit being almost complete, the total power of the magnet is thereby brought to bear upon the valve in the most direct and efficient manner, and a great economy of electric power is effected, substantially as described. 45th. The combination, with the armature valve E^3, of the horse-shoe magnet E^2, placed at an inclination to the face of the valve, and having its bevelled poles located with their ends directly opposite and parallel to said face, substantially as and for the purpose described. 46th. In an electro-pneumatic lever for an organ, an electro-magnet having a coil or coils wound in two or more separate layers, the wires of which are of different lengths or gauges and are at their adjacent ends all connected one to the other and to the circuit wire, whereby sparking at the circuit contacts is prevented, substantially as described. 47th. In an electro-pneumatic lever for an organ, the combination of the electro-magnet E^2, valve seat E^4, opposite the magnet poles, light armature valve E^3, between the said seat and poles, small armature valve chamber e^{21},

opening through the valve seat to the atmosphere, wind box K, having passage E^{16}, open to the atmosphere, flexible diaphragm E^{17}, between the wind box and valve chamber, valve E^{14}, E^{15}, controlling opposite ends of passage E^{16}, and movable with, but of smaller area than, diaphragm E^{17}, and passage K^3, leading from passage E^{16}, to the secondary bellows or valve of the pneumatic train, substantially as described. 48th. In an electric organ, a stop slider and a pair of electro-pneumatic levers for operating the slider in opposite directions, in combination with a pair of contact devices connected respectively in circuit with the electro-pneumatic levers, and located in proximity to the slider, and a pair of insulated pieces on the slider adjacent to the said contact devices, and adapted to open the same at or about the termination of the operative strokes of their respective electro-pneumatic levers and to close them again on the return strokes of said levers, whereby undue consumption of electric energy while the slider is at rest is prevented, substantially as described. 49th. In an organ, the combination with a sound board and a concussion bellows communicating therewith, of an electrically vibrated body mounted on the movable side of the said bellows, and adapted to impart its vibrations to it and to the air contained in the bellows and the adjacent air spaces, substantially as and for the purpose described. 50th. In combination with the concussion bellows M, communicating with the sound board as described, an electro magnet M^1 and a vibratory armature M^2 therefor, both mounted upon the movable end of the bellows, and arranged and electrically connected after the manner of an ordinary contact making and breaking device, substantially as described. 51st. The combination with the concussion bellows M, of the small electric motor M^4 mounted on the movable end thereof, and having an unbalanced piece on one side of its rotary shaft, substantially as and for the purpose described. 52nd. In combination with the swell box of an organ, a rotatable shutter mounted in an opening in the side of the said box and driven by any suitable motor, substantially as and for the purpose described. 53rd. In combination with a series of organ pipes, a rotary fan mounted with its axis directly above the pipes, and having its blades rotating in proximity to the same, substantially as an for the purpose described. 54th. In an electric organ, the combination with the swell pedal, the swell shutters and electro-pneumatic levers for operating the shutters in either direction, of a single contact and a subdivided contact as described working one upon the other at or near the pedal, one of them being movable with the pedal, and the whole being so arranged and connected that, on the operation of the said pedal, each section of the subdivided contact is successively connected with and cut off from one pole of the electric supply; a second subdivided contact and a double contact as described, working one upon the other within the organ and one of them movable with the swell shutters, the various sections of the said second subdivided contact being electrically connected respectively with those of the first, and the two sections of the double contact being connected each to one terminal of its respective electro-pneumatic lever, and separated from each other by an insulating space of a width not less than that of the widest section of the adjacent subdivided contact; and wires connecting the other terminals of the said electro-pneumatic levers with the other pole of the electric supply, whereby the swell shutters may be operated electrically from the swell pedal in a series of successive steps, substantially as described. 55th. In combination with the swell pedal N^9, the swell shutters N^1 and the electro-pneumatic levers E, N^3 and N^4 for operating the shutters, a contact n^{10} movable with the swell pedal and connected to one pole of the electric supply; a series of separate insulated contacts n^9 over which said contact n^{10} successively works; a second series of separate insulated contacts n^7 near the swell shutters and connected electrically to the first series respectively; a pair of contacts n^5 movable with the swell shutter working over the contacts n^7, and separated by an insulating space n^4 of a sufficient width as described; wires connecting the contacts n^5, each to one terminal of its respective electro-pneumatic lever, and wires connecting the other terminals of said levers with the opposite pole of the electric supply, substantially as described. 56th. In an electrical apparatus for operating the swell shutters step by step as described, a series of separate insulated contacts varying in width from end to end of the series as described, and successively connected to one pole of the electric supply by equal increments of movement of the swell pedal, in combination with a pair of separate insulated contacts n^5, working over said series of contacts and connected in circuit as described with the electro-pneumatic levers for operating swell shutters, and a pair of rocking levers N^5, carrying said contacts n^5, and having their pivots located at different distances from their respective contacts and their ends remote from the contacts connected to and movable with the swell shutters, whereby the width of the gap between the contacts n^5, is automatically varied, in accordance with the varying width of the adjacent series of contacts, substantially as and for the purpose described. 57th. In an electric organ, the combination, with the swell pedal, the swell shutters and the electro-pneumatic levers for operating the shutters in opposite directions, of a variable resistance device movable with the swell pedal, a second variable resistance device movable with the swell shutters, a pair of electric circuits each including one of said resistance devices, a polarized relay connected to both said circuits in such manner that its vibrating armature is retained in a central position when the circuits are balanced, but is moved to one side or the other when the balance is disturbed, a pair of contacts one on each side of the armature as described, and connected each to one terminal of its respective electro-pneumatic lever, wires connecting the other terminals of said levers with one pole of the electric supply, and a wire connecting the opposite pole of the supply with the armature of the relay, whereby each minute movement of the swell pedal effects an equivalent or proportionate amount of movement in the swell shutters, substantially as described. 58th. In an electric organ, the swell pedal N^9, swell shutters N^1, and electro-pneumatic levers E, N^3 and E, N^4, for operating the shutters, in combination with the variable resistance piece P, movable with the swell pedal, the variable resistance piece P^1, movable with the swell shutters, the circuits p, p^1, p^2 and p^3, p^4, p^3, including the pieces p, p^1, respectively, the horse-shoe electro-magnet P^3, having its coils wound and connected as described with said circuits respectively, the polarized armature P^4, vibrating between the poles of the magnet, and connected to one pole of the electric supply, and the armature contacts P^5, P^6, connected through their respective electro-pneumatic levers with the opposite pole of the electric supply, substantially as described. 59th. In an electric apparatus for controlling the swell shutters by varying the resistance of two normally balanced circuits arranged and connected as described, a variable resistance device consisting of a coil of bare wire having a sufficient resistance and wound in separated laps upon a non-conducting support, and of an insulated contact finger bearing upon the coil, one end of the coil and the finger being connected in circuit as described and one of said parts being movable with the shutters or pedal in a direction more or less parallel to the axis of the coil, substantially as and for the purpose described. 60th. The method of operating the swell shutters of an organ in such manner that the movement of the swell pedal shall vary directly as the volume of sound issuing from the swell box. 61st. In an organ, the combination with the swell shutters and swell pedal, of devices connecting said parts and adapted, for successive equal increments of movement in the pedal, to effect successive increasing or decreasing increments of movement in the swell shutters, according to the direction in which the pedal is operated, substantially as and for the purpose described. 62nd. In an electric organ, the combination, with the swell shutters, swell pedal, and electrical devices whereby the latter operates the former, of an automatic switch connected with the swell pedal and adapted to the break the connection of the circuits of the swell shutter operating devices with the electric supply when the said pedal is stationary, substantially as described. 63rd. In an organ, the swell shutters, and an electro-pneumatic device for operating the same, in combination with a brake working against some part movable with the shutters, and a pneumatic or electro-pneumatic device connected with the first named electro-pneumatic device and adapted to apply said brake automatically immediately after each movement of the shutters, whereby all undue movement of the shutters is prevented, substantially as described. 64th. The combination, with the swell shutters and an electro-pneumatic lever for operating the same, of a pneumatic brake working against some part movable with the shutters, and an air controlling device adapted to admit a pressure of air into the brake and apply the same as soon as the circuit of the electro-pneumatic lever is broken, substantially as described. 65th. The swell shutters N^1, shutter rod N^2, and electro-pneumatic levers E N^3 and E N^4 for operating the same in opposite directions respectively, in combination with a pneumatic brake applied to said rod, and an air controlling device operated indifferently by either of said levers to apply wind pressure to the brake on the breaking of either of the lever operating circuits, substantially as described. 66th. The swell shutters N^1, shutter rod N^2, and electro-pneumatic levers E N^3 and E N^4 for operating the same in opposite directions respectively, in combination with the bellows Q Q having brake blocks Q^2 on their movable sides bearing on opposite sides of the rod, bellows Q^4 Q^5 communicating respectively with the main bellows N^3 N^4 of the electro-pneumatic levers, a valve operated by the opening or closing of either bellows Q^4 Q^5 to respectively open or close an exhaust for the bellows Q, and a valve operated by the closing or opening of either bellows Q^4 Q^5 to respectively open or close said bellows Q to a wind supply, substantially as described. 67th. In combination with the swell shutters, and a device for operating the same, a part movable with the shutters a pneumatic brake adapted to be applied automatically to said part immediately after each movement of the shutters, and inclined piece on said part, forming a continuation of the brake bearing surface at one extremity thereof, as described, and trending away from the adjacent brake block, and a bearing roller movable with the brake block and bearing upon the said inclined piece in lieu of the brake block, when the shutters are in or near their closed position, whereby the shutters are held firmly closed when required, and rebound of the same when closing is prevented or counteracted, substantially as described. 68th. In combination, with the swell shutters, and a device for operating the same, the shutter rod N^2, having brake bearing part Q^6, the bellows Q, Q, having brake blocks Q^2, bearing on said part Q^6, means for extending the bellows immediately after each movement of the shutters, the inclined part Q^8, forming an extension of the part Q^6, as described, and the rollers Q^2, mounted on the bellows Q, in proximity to the brake blocks Q^1, and adapted to bear on said inclined part, in lieu of the blocks when the shutter is closed or almost closed, substantially as and for the purposes described. 69th. In combination, with the swell shutters, swell pedal, and an electro-pneumatic device connecting the one with the other, a finger key in connection with and adapted to operate the said device independ-

ently of the swell pedal, and means for automatically putting said key out of action as soon as the weight of the foot comes upon the pedal, substantially as and for the purpose described. 70th. In an electric organ, the combination, with a series of electrically operated actions for bringing on the stops of one department of the organ, of devices whereby an electric current, varying as the power, volume or tone of the stops of any predetermined series at any time in action in a second department of the organ, is caused to operate such of said action as will bring on a stop or stops forming a suitable accompaniment to the stops of said series drawn on said second organ department, substantially as described. 71st. In an electric organ, a series of keys governing the pipes of one department of the organ, a series of stops appertaining to said keys, and a series of electrically operated devices for bringing said stops into action in combination with an electric circuit conveying a current varying as the power, volume or tone of the stops of said series at any time in action, a switch movable in accordance with the variations of current in said circuit, and adapted according to its position to close the circuit or circuits of one or more of the electrically operated devices belonging to a suitable stop or stops of another department of the organ, a switch adapted to break or make all the stop key circuits of said last named department, and an operating device located conveniently to the performer and adapted to operate said last named switch to break its connected circuits and to simultaneously close, said circuit having a varying current, whereby there may always be instantaneously or automatically obtained an accompaniment suitable for such stop or stops as may be drawn or coupled to said keys, substantially as described. 72nd. In an electric organ, a series of keys governing the pipes of one department of the organ a series of stops appertaining to said keys, a series of electrically operated devices for bringing said stops into action, and a series of stop keys controlling the circuits of said devices, in combination with an electric circuit, a series of resistances arranged in parallel in said circuit, and having the relative amounts of their resistances in inverse proportion to the volume, power or tone of their respective stops, switches operated by the said stop keys in their "on" positions to bring their respective resistances into circuit, a switch movable in accordance with the varying amount of current in said circuit, a series of stops belonging to another department of the organ, a series of electrically operated devices for bringing said stops into action, a series of contacts each connected with one or more of the last named devices as described and adapted to be successively connected with or cut off from the electric supply by the movement of said switch, a second switch arranged to break or make all the stop key circuits of said last named department, and an operating device for actuating said second switch to break its connected circuits and for simultaneously closing said first named circuit, substantially as and for the purpose described. 72nd. In an electric organ, a series of keys governing the pipes of one department of the organ, a series of stops appertaining to said keys, and a series of electrically operated devices for bringing said stops into action, in combination with a series of stops key H, controlling the circuits of said devices, wires s^9, s^{10}, connected to opposite poles of an electric supply, resistance coils S^9, of varying degrees of resistance as described, connected in parallel to the wires s^9, s^{10}, a switch introduced into the circuit of each resistance coil and controlled by its respective stop as described, a switch T^4, having one or more contact pieces connected to one pole of an electric supply, a series of contacts over which said switch T^4 works, wires connecting said contacts with the supply terminals of one or more electrically operated devices for bringing into action a suitable stop or stops belonging to another department of the organ as described, wires connecting the opposite terminals of said devices with the other pole of the said electric supply, means for operating the switch T^4, in accordance with the variations in the amount of current passing through the wire s^{10}, a switch T capable of breaking all the stop key circuits of the last named organ department, an electrically operated device for operating said switch T, to break its connected circuits, and a push button S, for simultaneously closing the circuits of said last named device, and of the wire S^{10}, substantially as described. 74th. In an electric organ, the finger keys A, and the stop keys H, appertaining to one department of the organ, and a series of electrically operated stop actions controlled by said keys H respectively, in combination with the switch S^{11}, S^8, S^{12}, operated by each stop key as described, the wire s^9, connecting all the switch contacts S^{12}, with one pole of the battery F, resistance coils S^9, of varying strength as described, each connected at one end to one of the switch contacts S^{11}, a wire S^{10}, connecting the opposite ends of all the coils with the other pole of the battery F, a polarized relay having one of its coils connected in circuit with the wires S^9 and S^{10}, and its other coil connected in circuit with a variable resistance P^1 as described, electro-pneumatic devices for operating said resistance P^1 in either direction, wire p^6 connecting the relay armature with one pole of the battery F, armature contacts P^5, P^6 connecting the armature through their respective electro-pneumatic devices with the other pole of the said battery, switch T^4 having contacts t^8 t^9, movable with the resistance P^1, and connected to one pole of the battery F, two series of adjacent contacts t^6 t^7, connected respectively with the supply terminals of the "on" and "off" electro-pneumatic levers of the stops of another organ department as described, wire t^{13} connecting the opposite terminals of said levers to the other pole of the battery, switch T for breaking all the circuits of the stop keys H, electro pneumatic lever E operating said switch as described, and push botton S adapted to simultaneously close the circuits of said lever E and of the wire S^{10}, substantially as described. 75th. In an electric organ, the combination with a series of stop keys controlling the stops of one department of the organ, of an electric circuit resistance of suitable strength, adapted to be introduced into or cut out of said circuit on the operation of their respective stop keys, a switch movable in accordance with the varying amount of current passing through said circuit, and adapted to bring on or take off a suitable stop or stops in another organ department, and an operating device for closing said current at will, substantially as described. 76th. In an electric organ, the combination with a series of stop keys controlling the stops of one department of the organ, of an electric circuit, a series of resistance coils S^9 of suitable strength as described, connected in parallel in said circuit and corresponding in number to the stop keys, a switch S^{11}, S^8, S^{12} connected with each stop key, and adapted to bring its respective resistance coil into circuit when the stop key is operated to bring on its stop, contacts S^5 S^7 in said circuits operating device S, controlling said contacts, and a switch movable in accordance with the varying amount of current passing through said circuit, and adapted to bring on or take off a suitable stop or stops in another organ department, substantially as described. 77th. In an electric organ, an electric circuit conveying a current varying in amount as the power, volume or tone of the stops at any time in action in one organ department, in combination with a switch movable in accordance with the variations in the amount of said current, one or more contacts on said switch connected to one pole of an electric supply, an adjacent series of contacts over which the switch works, a series of electrically operated actions belonging to the stops of another organ department, and wires connecting said actions in a suitable manner on the one hand with the said series of contacts, and on the other hand with the other pole of said electric supply, substantially as described. 78th. In an electric organ, an electric circuit conveying a current varying in amount as the power, volume or tone of the stops at any time in action in one organ department, in combination with a switch T^4 movable in accordance with the variations in the amount of said current, contacts t^8 t^9 on said switch connected to one pole of the battery F, two series of contacts t^6,t^7, over which the contacts t^8, ^{9}, respectively work, wires 1a, 2a, 3a, connecting said contacts t^6, respectively with the supply terminals of the "on" electric actions for operating the stops of another department of the organ, wires 1, 2, 3, connecting the contacts t^7, respectively with the supply terminals of the "off" electric actions of said stops, and a wire t^{13}, connecting the returns of all the "on" and "off" actions with the opposite pole of the battery F, substantially as described. 79th. In an electric organ, an electric circuit conveying a current varying in amount as the power, volume or tone of the stops at any time in action in one organ department, in combination with a switch T^4, movable in accordance with the variations in the amount of said current and having a contact t^2, connected to one pole of battery F, a series of contacts t^3, over which said contact works, wires t^4, connecting the contacts t^3, respectively with a corresponding number of electro-pneumatically operated switches, adapted respectively to make and break the circuits of the electric actions of certain set combinations of stops in another organ department, and wires t^{16}, t^{15}, connecting all the returns of said switches to the other pole of battery F, substantially as described. 80th. In an electric organ, a series of stop keys controlling the electrically operated stop actions of one organ department, an electric circuit conveying a current varying in amount as the power, volume or tone of the stops at any time in action in said department, and a switch movable in accordance with the variations in the amount of said current, and adapted as described to bring into action a suitable stop or stops in another organ department, in combination with a series of contacts T^2, arranged in pairs as described and each pair connected in the circuit of one of said stop keys, a roller switch T, T^1, adapted to connect or disconnect said pairs of contacts simultaneously, an electro-pneumatic lever E, for operating said switch T, T^1, contact S^6, connected to one terminal of said lever E, wire *f*, connecting the opposite terminal to one pole of the battery F, contact S^7, in the first named circuit, contact S^5, connected to the opposite pole of the battery, and operating device S, adapted to open and close the contacts S^5, S^6, S^7, simultaneously, substantially as described. 81st. In an organ, an operating rod S, S^1, having a limited longitudinal movement, a spring for holding the rod in one of its extreme positions and a detent for holding it in its other extreme position, in combination with a second rod I, I^1, similarly furnished with a spring and detent, and a device whereby the operating of either of the rods releases the other and permits its spring to act, substantially as described. 82nd. In an organ, a series of operating rods S, S^1, one for each manual and each having a limited longitudinal movement, a similar series of rods I, I^1, arranged conveniently to the rods S, S^1, and a spring and detent for each rod for holding the same in its two extreme positions respectively, in combination with a device whereby the rods I, I^1, move as a whole, and means whereby the operation of any one of the rods S, S^1, effects the release of the others and of the rods I, I^1, and whereby the operation of any one of the rods I, I^1, effects the release of that rod S, S^1, which has been previously operated, substantially as and for the purpose described. 83rd. The combination, with the operating rods S, S^1, located one at each manual, each provided with a spring and detent for the purposes described, of the rods I, I^1, located in

proximity to their respective rods S, S^1, and one at least provided in a similar manner with a spring and detent, the shaft S^2, having arms S^3, engaging respectively the rods I, I^1, and a vertically movable board S^4, having holes s^1, adapted to engage all the detents of the rods S, S^1 and I, I^1, and to be raised by the operation of any one of said rods, substantially as described. 84th. In an electric organ, a series of rods S, S^1, located one at each manual, and electrically operated devices as described, whereby the operation of any one of said rods secures a suitable accompaniment on another organ department for the stops at any time in action in its own department, in combination with a similar series of rods I, I^1, located in proximity to their respective rods S, S^1, means whereby the operation of any one of the rods S, S^1, effects the release of all the rods I, I^1, and the remainder of the rods S, S^1, and a device whereby the operation of any one of the rods I, I^1, releases that rod S, S^1, which has been previously operated, substantially as described. 85th. In an electric organ, an electric circuit conveying a current varying in amount as the power, volume or tone of the stops of a predetermined series at any time in action in one department of the organ, a switch movable in accordance with the variations in the amount of said current, and adapted as described to bring into action one or more suitable stops in another organ department, in combination with a second circuit including said first named circuit, and adapted to be closed on the operation of the swell pedal to open the swell shutters, whereby an additional current is passed through the first circuit on the openings of said shutters, and imparts such an additional movement to the said switch, as will bring into action an additional stop or stops on said second organ department, substantially as described. 86th. In an electric organ, the combination, with a collapsible reservoir supplying wind to the organ, and a motor for maintaining the supply to said reservoir, of a contact device adapted to be made and broken by the rise and fall of the reservoir, and an electro-pneumatic lever connected in the circuit of said contact device, and adapted to control the movements of said motor, substantially as described. 87th. In an electric organ, having its electric power supplied from primary or secondary batteries arranged in parallel, the combination, with said batteries, of an automatic switch, so arranged in connection with the same that when the wind is out of the organ, seach set of cells is disconnected from the other sets and from the organ, the connection being automatically re-established when blowing re-commences, substantially as described.

No. 41,296. Pneumatic Tyre. (*Bandage pneumatique.*)

George William Rowe and William George Heys, both of Manchester, Lancaster, England, 17th December, 1892; 6 years.

Claim.—1st. An elastic tyre for the wheels of velocipedes and other vehicles having an air space inclosed or partly inclosed by india-rubber or other similar soft elastic material in a state of compression substantially as and for the purpose hereinbefore described. 2nd. In a pneumatic or other similar tyre an air containing tube or part constructed of india-rubber or other similar elastic material in a state of compression, substantially as and for the purpose hereinbefore described. 3rd. In the construction of an air tube for a pneumatic or similar tyre, moulding the india-rubber or other soft elastic material into a flat or U-shape, and forming the tube therefrom by bending the strip or reversing the U-shape, substantially as and for the purpose hereinbefore described. 4th. In the construction of an air tube for a pneumatic or similar tyre, moulding the india-rubber or other soft elastic material into a tubular form, and then turning the tube inside out, substantially as and for the purpose hereinbefore described. 5th. In combination with a compressed india-rubber or similar tube or air containing part of a pneumatic or similar tyre, a layer of canvas or other comparatively non-stretching fabric secured upon the outer surface of the tube or part to prevent its stretching, substantially as hereinbefore described 6th. In the construction of an air tube for a pneumatic or similar tyre, compressing the india-rubber by winding or braiding a textile or similar material around the tube upon a mandrel, the longitudinal extension of the tube being prevented by cementing the tube upon the mandrel, or by cementing fabric longitudinally upon the tube, substantially as and for the purpose hereinbefore described. 7th. In the construction of an air tube for a pneumatic or similar tyre, drawing an india-rubber or soft elastic tube within a canvas or other similar non-expansible flexible tube of rather smaller diameter, substantially as and for the purpose hereinbefore described. 8th. In the construction of an air tube for a pneumatic or similar tyre, cementing or securing a normal strip of india-rubber upon a stretched strip of similar material, thereafter releasing the stretched strip and constructing the tube from the composite strip thus formed with the normal strip inside, substantially as and for the purpose hereinbefore described. 9th. The pneumatic or similar tyres hereinbefore described and illustrated in the accompanying drawings.

No. 41,297. Pneumatic Tyre. (*Bandage pneumatique.*)

William Robert Foster, of 87 Grange Road, Bermondsey, Surrey, England, 17th December, 1892; 6 years.

Claim.—1st. The combination with a tubular tyre formed with closed ends and adapted to be lapped around the wheel rim, the ends being bevelled or tapered so as to lap over each other and make a scarf joint, of a jacket or cover in the form of a complete annulus of nearly complete tubular cross section, but with a slot or gap extending around the inner circumference of the annulus, the said jacket being adapted to envelope the tyre, and its edges being detachably secured at intervals to the back of the wheel rim, substantially as and for the purpose specified. 2nd. The combination with a tubular tyre having closed ends and adapted to be lapped around the wheel rim as described, and with an endless jacket or cover of nearly complete tubular cross section adapted to envelope the tyre and rim as described, of studs or hooks fixed to the wheel rim and eyeletted holes or slots in the edges of the jackets adapted to engage therewith for securing the jacket and tyre as described.

No. 41,298. Knitting Machine. (*Machine à tricoter.*)

Ashley Jacob Gulick, William Humphrey and Ashbury Wright Lee, all of Clearfield, Pennsylvania, U.S.A., 17th December, 1892; 6 years.

Claim. 1st. In a circular knitting machine, the combination of a base or frame, the annularly grooved cylinder, and bearings or supports for said cylinder mounted adjustably upon the base or frame, and adapted to engage the annular groove of the cylinder, thus supporting the latter revolubly, substantially as set forth. 2nd. In a circular knitting machine, the combination with the revoluble cylinder having vertical grooves to accommodate the needles, and provided with an annular band to secure said needles in their respective grooves, of an inclined ring or band forming a needle track and securer, loosely encircling the said cylinder and having its ends connected to a suitable support, substantially as and for the purpose set forth. 3rd. In a circular knitting machine, the combination of the revoluble cylinder having vertical grooves, the needles mounted in said grooves, the upright having a vertically reciprocating cross head provided with lugs or projections to engage the shoulders of the needles, and a hoop or band loosely encircling the cylinder and having its ends connected with the said upright, substantially as and for the purpose set forth. 4th. In a circular knitting machine, the combination with the revoluble cylinder having the grooves and the needles mounted in said grooves, of an upright having a vertically reciprocating cross head adapted to engage the needles and latterally extending brackets, a hoop or band loosely encircling the cylinder and having its ends attached to said brackets, and arms extending laterally from the latter and serving to form continuations of the track or guide formed by said hoop or band, substantially as and for the purpose set forth. 5th. In a circular knitting machine, the combination of the base or frame, the revoluble cylinder having vertical needle carrying grooves and provided at its low edge with teeth or cogs alternating with said grooves, a ring or band loosely encircling the cylinder and having its ends attached to brackets on opposite sides of an upright, a vertically reciprocating cross head mounted upon said upright and having lugs or projections to engage the needles, a vertically reciprocating and vibrating or oscillating pawl adapted to engage the teeth at the lower edge of the cylinder, and suitable operating mechanism, all constructed and arranged, substantially as set forth. 6th. In a circular knitting machine, the combination with the revoluble cylinder having the needle carrying grooves and provided with teeth or cogs at its lower edge, of an upright having a reciprocating cross head adapted to engage the needles, a shaft having an eccentric disc suitably connected with said cross head, a cam mounted upon said shaft adjacent to the eccentric disc, a vertically movable pawl having a frame engaging the said cam and provided with a vertical slot and a fulcrum pin extending through the said slot and mounted adjustably in a vertical slot in a suitable bracket or hanger, substantially as and for the purpose set forth. 7th. In a circular knitting machine, the combination with a revoluble cylinder provided at its lower edge with teeth or cogs, of a vertically reciprocating and vibrating pawl adapted to engage said teeth or cogs, a vertically adjustable fulcrum pin for said pawl, and suitable operating mechanism, substantially as and for the purpose set forth. 8th. In a circular knitting machine, the combination with a base or frame having a suitable supporting flange of a reducing ring adapted to be supported on said flange having a revoluble needle carrying cylinder, and a radially adjustable supporting plate suitably connected with the base or frame and having mechanism whereby cylinders of different sizes may be intermittently rotated and whereby needles of said cylinders may be operated, substantially as and for the purpose set forth. 9th. In a circular knitting machine, the combination of a base or frame, a reducing ring adapted to be mounted detachably upon said frame and carrying a revoluble cylinder having the vertically reciprocating needles, an adjustable supporting plate having set screws extending through suitable slots in the base or frame, and mechanism mounted upon said adjustable plate for guiding the yarn and for operating the cylinder and the needles, substantially as herein set forth. 10th. In a circular knitting machine, the combination with a base or frame having a supporting flange, of a reducing ring adapted to be supported upon said flange and having radially adjustable bearing plates, and a needle carrying cylinder having an annular groove engaging said bearing plates, substantially as and for the purpose set forth. 11th. In a circular knitting machine, the combination with the revoluble cylinder having vertical grooves to accommodate the needles, of a ring or band loosely encircling the said cylinder and having its ends connected to a suitable support, said ring or band being thus adapted to sag at one side, so as to form an inclined track up which the needles are guided, and mechanism for operating said needles, substantially as and for the purpose set forth. 12th. In a circular knitting machine

the combination of the base or frame, the revoluble cylinder having vertical needle carrying grooves, and provided at its lower edge with teeth or cogs alternating with said grooves, a vertically reciprocating cross head having lugs or projections to engage the needles, a vertically reciprocating and vibrating or oscillating pawl adapted to engage the teeth at the lower edge of the cylinder, and a suitable operating mechanism, all constructed and arranged, substantially as set forth. 13th. In a circular knitting machine, the combination with a revoluble cylinder provided at its lower edge with teeth or cogs, of a vertically reciprocating and vibrating pawl, adapted to engage said teeth or cogs, and suitable operating mechanism, substantially as and for the purpose set forth.

No. 41,299. System of Electrical Distribution.

(*Mode de distribution électrique.*)

Charles G. Young and Fred. Harris, both of New York City, New York, 17th December, 1892; 6 years.

Claim.—1st. In a system of electrical distribution, the combination, of an electric generator, a main line in circuit therewith, electric contact terminals normally in closed circuit with and between the poles of said generator and said main line, and automatic means for electrically separating said terminals upon rupture of the main line. 2nd. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, a magnet core provided with three coils, one of which is in circuit with said main line, the second in circuit with the ground and one pole of the generator, means such as for instance, a circuit closer J^1, for making electrical connection between said main line and the ground, a circuit breaking armature, maintaining the main line in circuit with said generator, while attracted by said magnet, the second armature pivoted and balanced for the purpose set forth, and included in circuit for short circuiting the said first coil, when said second armature is attracted to said core. 3rd. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, and including an electro-magnet at or near said generator, and a circuit breaking armature belonging to and attracted by said magnet, and means such as a second armature provided with a circuit closer for short circuiting said magnet under an abnormally excessive current in the main line, whereby the first armature is no longer attracted and automatically opens said main line. 4th. In a system of electrical distribution, the combination of a main line, an electric generator and translating devices in circuit therewith, a circuit breaking armature also in circuit therewith, at or near said generator, attracted to conducting control by an electro-magnet normally energized by the electric charge upon the main line, a circuit closing armature in a normally open short circuiting line for short circuiting said magnet, and so balanced as to maintain the short circuiting line, open a normal current in said main line, and to close said short circuiting line when an abnormal and excessive current traverses said main line, whereby the said first armature is no longer attracted by said magnet and opens said main line. 5th. In a system of electrical distributing, the combination of an electrical generator, a main line in circuit therewith, armature circuit breakers between the poles of said generator and said main line, and electro-magnet or magnets within inductive relation to said armature circuit breakers, for operating said circuit breakers under abnormal conditions of the current in the main line. 6th. In a system of electrical distribution, the combination of an electrical generator, a main line in circuit therewith, a circuit breaking armature in circuit with the field magnet of the generator, and automatic means for opening said circuit breaker upon rupture of the main line. 7th. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, a circuit breaking armature in circuit with the field magnet of the generator, a magnet in circuit with said main line retaining said armature in such a manner that the main line is closed, and means such as a second armature for said magnet for short circuiting said magnet under abnormal conditions of the current in the main line, whereby the circuit breaker destroys the electrical connection between the generator and the main line, when the said magnet becomes short circuited. 8th. In a system of electrical distribution, the combination of an electrical generator, terminals thereof, a main line, terminals thereof in contact with the first named terminals, all the terminals being located at or near said generator, an electro-magnet included in the said main line, an armature therefor carrying one pair of said terminals and normally held attracted to said magnet, two other magnets in circuit respectively with the ground and opposite terminals of said generator, a second armature for said last named magnets provided with means such as an automatic circuit closer for short circuiting said first magnet when the other magnets become magnetized. 9th. In a system of electrical distribution, the combination of an electrical generator, main line in circuit therewith and having outgoing and incoming lines, an electro-magnet in circuit with said main line, a circuit breaking armature within inductive relation to said magnet, and terminal contacts at or near and connected electrically to the respective terminals of said generator or of its field magnet, and to the terminal of said circuit breaking armature, for the purpose as hereinbefore described of electrically destroying the electric generation or charge upon each and both of the outgoing and incoming lines. 10th. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, armature circuit breakers between the poles of said generator and said main line, and an electro-magnet or magnets within inductive relation to said armature circuit breakers, for operating said circuit breakers under abnormal conditions of the current in the main line in which said magnet or magnets are included. 11th. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, electric contact terminals normally in closed circuit with and between the poles of said generator and said main line, and automatic means, such for example as an electro-magnet or magnets in the main line for electrically separating said terminals upon rupture of the main line. 12th. The method of operating a system of electrical distribution embodying an electric generator in circuit with a main line, consisting in automatically electrically separating the poles of the generator from the main line when the latter becomes ruptured. 13th. In a system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, and a cut out, in circuit with said generator, and controlled by a device in continuous circuit with said main line and the ground. 14th. The combination of an electric generator, a main liine in circuit therewith, translating devices in said main line in multiple arc with each other, a cut out in circuit in or near the generator controlled by a device in continuous circuit between the ground and said main line at a given point to hold the circuit closed while the main line is insulated from the ground at all other points, and to open the circuit when the main line becomes grounded at a second point. 15th. In the operation of electric safety cut outs for dynamos by grounding of the main line of a system of electrical distribution, the method of separating the poles of the dynamo from the main line, which consists in automatically opening the said cut outs. 16th. In the operation of electric safety cut outs for dynamo by grounding of the main line of a system of electrical distribution, the method of a separating a pole of the dynamo from the main line, which consists in automatically opening one of the said cut outs. 17th. In the operation of an electric cut out for dynamos, by grounding the main line of a system of electrical distribution, the method destroying the electric charge upon the main line at two independent points thereof, and opening the said cut out by the action of the current generated in the ground circuit. 18th. The method of operating an electric cut out for dynamos consisting in grounding the main line at independent points thereof, and opening the said cut out and destroying the electric charge in the main line by the action of the current formed in the ground circuit. 19th. In a system of electrical distribution, the combination of a dynamo, a main line, a cut out in circuit with its field magnet, and means for automatically interrupting said field magnet circuit upon rupture or grounding of the main line or branch thereof.

No. 41,300. Apparatus for Removing Grease from Textile Fabrics. (*Appareil pour enlever la graisse des tissues.*)

Thomas James Hutchinson, Manchester, England, 17th December, 1892; 6 years.

Claim.—1st. The combination with a closed tank of a pair of squeezing rollers, constructed and arranged substantially as and for the purpose set forth and described. 2nd. The combination with a closed tank of partitions dividing the tank into compartments, and a pair of squeezing rollers in each compartment, constructed and arranged substantially as and for the purpose hereinbefore set forth and described and illustrated. 3rd. The combination with a closed tank of a pair of squeezing rollers and a series of guiding rollers, constructed and arranged substantially as hereinbefore set forth and illustrated. 4th. The combination with a closed tank of partitions dividing the tank into compartments, a pair of squeezing rollers and a series of guiding rollers in each compartment, substantially as and for the purpose hereinbefore described and illustrated. 5th. The combination with a closed tank of a still and a condenser, substantially as and for the purpose hereinbefore described and illustrated. 6th. The combination with a closed tank of a drying chamber and a condenser, substantially as and for the purpose hereinbefore described and illustrated. 7th. The combination with a closed tank of a drying chamber, a condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 8th. The combination with a closed tank of a still, a condenser, a drying chamber, and a second condenser, substantially as and for the purpose hereinbefore set forth and illustrated. 9th. The combination with a closed tank of a still, a condenser and a receiver substantially as and for the purpose hereinbefore set forth and illustrated. 10th. The combination with a closed tank of a still, a condenser, and an inverted condenser, substantially as and for the purpose hereinbefore set forth and illustrated. 11th. The combination with a closed tank of a still, a condenser, an inverted condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 12th. The combinination with a closed tank of a still, a condenser, an inverted condenser, and a drying chamber, substantially as and for the purpose hereinbefore set forth and illustrated 13th. The combination with a closed tank of a still, a condenser, a drying chamber, a second condenser, and an inverted condenser, substantially as and for the purpose herein set forth and illustrated. 14th. The combination with a closed tank of a still, a condenser, a drying chamber, a second condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 15th. The

combination with a closed tank of a still, a drying chamber, a condenser, an inverted condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 16th. The combination with a closed tank of a drying chamber, a condenser, an inverted condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 17th. The combination with a closed tank of a still, a drying chamber, a condenser, an inverted condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 18th. The combination with a closed tank of a still, a drying chamber, and a condenser, substantially as and for the purpose herein set forth and illustrated. 19th. The combination with a closed tank of a still, a drying chamber, a condenser, and a receiver, substantially as and for the purpose herein set forth and illustrated. 20th. An apparatus for removing grease and fatty matters from textile fabrics, constructed and arranged substantially as hereinbefore described and illustrated by the accompanying drawings.

No. 41,301. Electric Arc Lamp.

(*Lamp électrique à arc.*)

James J. Wood, of Fort Wayne, Indiana, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. The combination with a carbon holder having rack-teeth, an armature lever, a feeding train carried by said lever, terminating in a pinion meshing with said rack, and having a toothed stop-wheel, and a stationary stop-tooth arranged to engage said stop-wheel when the latter is moved toward it by the lever, of an electric arm or spring on which said tooth is formed or mounted, extending approximately horizontally, bent at right angles and fastened, and an adjusting screw arranged horizontally to bear against said elastic arm, whereby by the horizontal adjustment of said screw the stop-tooth may be raised or lowered, and thereby adjusted relatively to the stop wheel. 2nd. In an arc lamp the combination with a carbon holder having rack teeth, and a feeding train for feeding down the holder, including a feeding pinion engaging with the rack, and a retarding device for governing the rate of feed, of a friction clutch interposed between said pinion and retarding device, whereby when the carbon holder is forcibly pulled down the said clutch will slip and avoid injury to the feeding train. 3rd. In an arc lamp the combination, with a carbon holder having rack teeth and a feeding train, including a feeding pinion engaging said rack, and a retarding device, of a friction clutch consisting of a gear wheel on said train, connected through its gear teeth with the retarding device, a disc connected to the feeding pinion so as to rotate therewith when the carbon holder descends, and a spring for pressing said gear wheel and disc into frictional contact. 4th. In an arc lamp, the combination of an armature lever, a main magnet above the lever and a shunt magnet below it, an interposed armature connected to the lever through a loose pivotal connection adapted to permit of the armature being drawn down by the shunt magnet, independently of the lever, and cut out contacts carried by the lever and armature respectively, the one carried by the armature being arranged over and standing normally out of contact with the one carried by the lever, whereby an abnormal excitation of the shunt magnet draws down the armature and brings said contacts together, and the weight of the armature tends to hold them together. 5th. In an arc lamp, the combination of an armature lever, a main magnet above the lever and a shunt magnet below it, an interposed armature connected to the lever through a loose pivotal connection adapted to permit of the armature being drawn down by the shunt magnet independently of the lever, a spring tending to lift the armature and reacting against the armature lever, and a cut-off contact carried by the armature and lever, respectively, and arranged to be closed together by the attraction of the armature downwardly, relatively to the lever and against the tension of said spring, whereby the weakening of said spring by heat will have no tendency to separate the cut out contacts. 6th. In an arc lamp, the combination of an armature lever, a main magnet above the lever and a shunt magnet below it, an interposed armature connected to the lever through a loose pivotal connection adapted to permit of the armature being drawn down by the shunt magnet independently of the lever, stops for limiting the drawing down of the lever, and cut out contacts carried by the lever and armature, respectively, that carried by the armature standing over the one carried by the lever and arranged when brought together by the attraction of the armature by an abnormal excitation of the shunt magnet to form stops for limiting the downward movement of the armature. 7th. In an arc lamp, the combination with an armature F, and an armature lever E, constructed as an annular frame to inclose the armature, and having notches open beneath engaged by pivot pins on the armature, of a spring n, for partly sustaining the weight of the armature, consisting of a leaf fastened to the armature at its middle, and having its free ends pressing downwardly on opposite sides of the lever. 8th. In an arc lamp, the combination with the mechanism case, the negative binding post passing through and insulated from the top of the case, and the positive carbon holder C, having a pin o^1, projecting from it near its upper end, of a spring cut out arm O, fastened to and in electric connection with the negative binding post underneath the top of the case, and arranged with its free and projecting into the path of said pin o^1, in position to be encountered thereby when the carbon holder reaches the end of its downward movement and thereby to stop the latter yieldingly and short circuit the lamp. 9th. In an arc lamp, having a mechanism case and a frame extending thence downwardly for the support of the lower carbon holder, the positive and negative binding posts constructed with suspension hooks arranged with their bends in the same plane as said lower frame, and the binding posts displaced from said plane to the rear of the hooks, for the purpose specified. 10th. In an electric lamp, the combination, with the globe holder, having projecting lugs, of an ash cup having a notched flange for engaging said lugs, formed with bevelled teeth, the abrupt faces of which are arranged to be presented to the lugs when the ash cup is in place. 11th. In an arc lamp, the combination, with a carbon holding rod of a carbon clamp, having gripping jaws for engaging the carbon pencil arranged to hold the latter with its axis out of line with the axis of the rod and connected to the rod through the medium of a swivel connection, whereby it may be rotated relatively to the rod. 12th. In an arc lamp, the combination with a carbon holding rod, of a carbon clamp consisting of gripping jaws arranged to hold the latter with its axis eccentric to that of the rod and connected to the rod through the medium of a swiveled connection, whereby the carbon clamp may be turned relatively to the rod, and with a set screw for fastening it in any rotative position. 13th. In a duplex lamp, the combination of the carbon holders having rack teeth, feeding pinions engaging therewith, an armature lever carrying said pinions, a feeding train for regulating the feed, a pawl carried by the armature lever and adapted to prevent the feeding down of the second carbon holder during the feeding of the first holder, and a projection carried by the first carbon holder and adapted at the termination of the movement thereof to throw said pawl out of action and cause the second carbon holder to feed. 14th. In a duplex arc lamp, the combination with the two carbon holders having rack teeth, of two feeding pinions, an armature lever carrying said pinions, a ratchet wheel connected to the second feeding pinions, and a pawl adapted to engage said wheel during the feeding down of the first carbon holder, and thereby prevent the rotation of the second feeding pinion. 15th. In a duplex arc lamp, the combination with two carbon holders having rack teeth, of two feeding pinions an armature lever carrying them, a rachet wheel connected to the second feeding pinion, a pawl adapted to engage said ratchet wheel to prevent the rotation of the second feeding pinion during the feeding down of the first carbon holder, a stop projection on the first carbon holder, and a mechanical connection between said stop projection and pawl, adapted upon the termination of the downward movement of the first carbon holder to communicate motion to said pawl and withdraw it from said ratchet wheel. 16th. In a duplex arc lamp, the combination of the two carbon holders having rack teeth, two feeding pinions engaging said racks, an armature lever carrying said pinions, a ratchet and pawl device adapted to normally prevent the feeding of the second carbon holder, a rock shaft having an arm adapted when rocked to disengage said pawl, and the first carbon holder having a stop projection arranged when it reaches the limit of its downward movement to encounter said rock shaft and oscillate it in a direction to release said pawl. 17th. In a duplex arc lamp, the combination of the two carbon holders having rack teeth, two feeding pinions engaging said racks, an armature lever carrying said pinions, a ratchet and pawl device adapted to normally prevent the feeding of the second carbon holder, a rock shaft having an arm adapted when rocked to disengage said pawl, and the first carbon holder having a stop projection arranged when it reaches the limit of its downward movement to encounter said rock shaft and oscillate it in the direction to release said pawl, and means for releasing said pawl by hand, consisting of a knob beneath the mechanism case, and a mechanical connection between said knob and rock shaft, whereby the shaft may be oscillated from said knob. 18th. In a duplex arc lamp, the combination with the carbon holders having rack teeth, of feeding pinions engaging them, a ratchet and pawl device adapted to normally prevent the feeding of the second carbon holder, means, substantially as described, for releasing said pawl when the first carbon holder reaches the limit of its feeding movement, and a mechanical connection operated by the lifting of the second carbon holder to its extreme height to release said pawl and hold it released until the second carbon holder is dropped sufficiently to admit of the striking of the arc.

No. 41,302. Improvements in Electric Arc Lamps.

(*Lampe électrique à arc.*)

James J. Wood, of Fort Wayne, Indiana, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. In an arc lamp, the combination of opposed main and shunt magnets, an armature and armature lever, connected through a loose connection, adapted to permit of the armature moving independently of the lever, when abnormally attracted by the shunt magnet, and cut out contacts carried by the armature and lever, respectively, to be brought into contact upon such abnormal attraction, and said contacts arranged in line with the connection, between the armature and lever, whereby their action is free from disturbance due to the different paths of motion of the lever and armature. 2nd. In an arc lamp, the combination of opposed main and shunt magnets, an armature and armature lever connected through a loose pivotal connection adapted to permit of the armature moving independently of the lever, when abnormally attracted by

the shunt magnet, and cut outs carried by the armature and lever, respectively, to be brought into contact upon such abnormal attraction, and said contacts arranged closely adjacent to the axis of the pivotal connection between the armature and lever. 3rd. In an arc lamp, the combination of opposed main and shunt magnets, an armature and armature lever connected through a loose pivotal connection adapted to permit of the armature moving independently of the lever, when abnormally attracted by the shunt magnet, and cut out contacts carried by the armature and lever, respectively, to be brought into contact upon such abnormal attraction, and said contacts consisting, respectively, of a pivot pin on one of the parts and a contact arm carried by, but insulated from the other part and arranged closely adjacent to said pivot pin. 4th. In an arc lamp, the combination of opposed main and shunt magnets, an armature and armature lever connected through a loose pivotal connection adapted to permit of the armature moving independently of the lever, when abnormally attracted by the shunt magnet, consisting of open notches in the armature lever engaged by pivot pins on the armature, and cut out contacts carried by the armature and lever, respectively, to be brought into contact upon an abnormal excitation of the shunt magnet, and consisting respectively, of a pivot pin on the armature and a contact arm fastened to, but insulated from the lever and terminating adjacent to said pin on the open side of the notch in the lever. 5th. In an arc lamp, the combination of main and shunt magnets, an armature F, having pivot pins m, an armature lever E, having pivotal notches m^1, and a contact strip L^2, fastened to, but insulated from the lever and formed with a contact arm L^1, arranged adjacent to a pin m, to be touched thereby when the armature is abnormally attracted by the shunt magnet. 6th. In an arc lamp, the combination of main and shunt magnets, an armature and armature lever, connected by a loose connection adapted to permit the armature to move independently of the lever when abnormally attracted by the shunt magnet, and cut out contacts carried by the armature and lever, respectively, to be brought into contact upon such abnormal attraction and arranged in two pairs upon opposite sides of the lever, whereby normally a double contact is assured, or in case of the lateral tilting of the armature, one pair of contacts at least is caused to act. 7th. In a duplex arc lamp, the combination with the carbon holders having rack teeth, of feeding pinions engaging them, an armature lever carrying said pinions, whereby both carbon holders are suspended from the lever during the operation of the lamp, a feeding train, means for preventing the feeding of the second carbon holder during the feeding of the first, and means for upholding the first carbon holder by the lever during the feeding of the second, consisting of the provision of the first carbon holder and lever, with a cam surface on the one part, and a roller on the other, relatively arranged to impart to the carbon holder the same extent of lift with a given movement of the lever, as though the carbon holder were hung by its rack teeth from its feeding pinion, whereby the effect of the weight of the carbon holder upon the lever is substantially the same after as before the transfer of the feed, and the second carbons may burn with the said arc as the first. 8th. In a duplex arc lamp, the combination of the carbon holders C^1, C^2, pinions c^1, c^2, lever E, carrying said pinions, pawl x^1 for preventing the feeding of the second holder during the feeding of the first, releasing rock shaft y, having arms y^1 and y^2, roller y^5 on the latter arm, and pin b^1 on the first carbon holder, having an inclined cam face which, during the burning of the second carbons rests on said roller, and is so proportioned as to reduce the extent of lift of the first carbon holder, in order to equalize the area of the first and second carbons.

No. 41,303. Regulator for Dynamo Electric Machines. (*Regulateur de machine dynamo electrique.*)

James J. Wood, of Fort Wayne, Indiana, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. The combination with a dynamo electric machine, of a regulator therefor, consisting of two auxiliary brushes applied to opposite sides of the commutator in positions of like and equal potentials, a conducting bridge connecting said brushes, a shunt from said brushes to a brush or brushes in contact with commutator segments of opposite or different potential, and a variable rheostat in said shunt. 2nd. The combination with a dynamo electric machine, of a regulator therefor, consisting of two auxiliary brushes applied to opposite sides of the commutator in positions of like and equal potentials, a conducting bridge connecting said brushes, a shunt from said brushes to one of the main brushes, and a variable rheostat in said shunt.

No. 41,304. Phonograph. (*Phonograph.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. In a phonograph, the combination, with a stationary reproducer, of a driving shaft without longitudinal movement, and a phonogram cylinder sleeved upon the driving shaft and rotating therewith, and having an advancing movement thereon, substantially as set forth. 2nd. In a phonograph, the combination, with a stationary reproducer and a driving shaft without longitudinal movement, of a phonogram cylinder sleeved upon the driving shaft and rotating therewith, a stationary feed block engaging a screw thread on the cylinder sleeve for advancing the cylinder on the shaft, the said feed block being adapted to be disengaged from said screw thread to permit the reverse movement of the cylinder on the shaft, substantially as set forth. 3rd. In a phonograph, the combination, with a stationary reproducer and a driving shaft without longitudinal movement, of a phonogram cylinder sleeved on the shaft and revolving therewith, a feed block engaging a screw thread on the sleeve of the cylinder for advancing said cylinder on the shaft, said block being adapted to be disengaged from the screw thread, and a spring for sliding the cylinder back on the shaft when the feed block is disengaged, substantially as set forth. 4th. In a phonograph, the combination, with the stationary reproducer and a driving shaft without longitudinal movement, of a phonogram cylinder sleeved on the shaft and revolving therewith and having an advancing movement on said shaft, a driving drum secured to the shaft, a counterbalance wheel shaft with which the driving drum is connected, and a pin on the driving drum passing through a hole in the phonogram cylinder for turning the latter with the shaft, substantially as set forth. 5th. In a phonograph, the combination, with the stationary reproducer having a reproducing point capable of a retarded movement independent of the diaphragm, and a lever acting to lift the reproducing point to disengage from the sound record without moving the reproducing diaphragm, substantially as set forth. 6th. In a phonograph, the combination, with the stationary reproducer having a reproducing point capable of a retarded movement independent of the diaphragm, of a revolving and advancing phonogram cylinder carrying a sound record, a feed block for advancing the phonogram cylinder and adapted to be disengaged from the feeding screw, and a lever acting both upon the reproducing point and upon said feed block, disengaging the former from the sound record without moving the diaphragm and disengaging the latter from the feed screw, substantially as set forth. 7th. In a phonograph, the combination, with the stationary reproducer having a reproducing point movable independent of the diaphragm and a lifting feeding block, of a lever connected with the reproducing point and adapted to lift it, and also connected with the feeding block, through a spring fork, so as to disengage the block from the feed screw after the reproducing point is disengaged from the record, substantially as set forth. 8th. In a phonogram, the combination, with the main shaft E, of the phonograph cylinder sleeved on said shaft, the driving drum secured to the shaft and having a pin for turning the phonogram cylinder, the counter shaft with balance wheel, a spool on the counter shaft belted to the driving drum on the main shaft, and a spring for maintaining the belt under tension, substantially as set forth. 9th. In a phonograph, the combination, with a stationary reproducer, of a main driving shaft without longitudinal movement, a phonogram cylinder mounted on said shaft and revolving therewith, and also having an advancing movement thereon, said shaft being centered at one end and held in a slot in the frame at the other end, so that by swinging it latterly it can be removed from the frame, substantially as set forth. 10th. In a phonograph, the phonogram cylinder made from sheet metal and formed as a disc, with its edge turned laterally to form a cylindrical surface, and again turned vertically to form a flange at one end of said cylindrical surface, substantially as set forth. 11th. In a phonograph, the reproducer frame made of a ring of sheet metal having an inwardly turned flange at one end, the diaphragm resting on the inwardly turned flange, and a clamping cover securing the diaphragm and held in place by springs, substantially as set forth. 12th. In a phonograph, the reproducer frame made of a sheet metal ring having an inwardly turned flange at one end to support the diaphragm, and an outwardly turned flange at the other end for securing the reproducer frame to a supporting frame, the diaphragm resting upon the inwardly turned flange, a cover resting upon the diaphragm, and springs pressing the cover upon the diaphragm to hold it in place, substantially as set forth.

No. 41,305. Method of Preparing Iron Sand.

(*Mode de preparer le sable de fer.*)

Alfred Sculthorp Minett, Auckland, New Zealand, 17th December, 1892; 6 years.

Claim.—The method herein specified of reducing iron sand to the metallic state for the production of pig and malleable iron therefrom, which consists in combining with said sand or treating it in a furnace to the action of a mineral gangue, substantially as described and for the purpose set forth.

No. 41,306. Railway Frog. (*Rail de croisement.*)

The Canada Switch Manufacturing Company, Montreal, assignees of Axel Albin Strom, of Austin, Ill., U.S.A., 17th December, 1892; 6 years.

Claim.—1st. In a railway frog A, the combination with the wing rails B, and point rails C, braced intermediately by filling D or the like, of clamps E, E^1, each comprising a metal bar having its ends turned edgewise of the bar toward each other and affording the hook shaped extremities r, and r^1, the said clamps embracing the frog across its base, respectively, near the ends of its wider and narrower portions, and keys F, driven directly between the extremities of the clamps and side of a wing rail and bent at their protruding tapering ends toward the respectively adjacent sides of the clamps, substantially as described. 2nd. In a railway frog A, the combination with the wing rails B, and point rails C, braced intermediately by filling D, or the like, of clamps E, E^1, each comprising a metal bar having

its ends turned edgewise of the bar toward each other and affording the hook shaped extremities r, and r^1, the said clamps embracing the frog across its base, respectively, near the ends of its wider and narrower portions, and keys F, split toward their tapering extremities and driven between the extremities of the clamps and side of a wing rail, and each having the outer portion of its protruding split end bent toward the adjacent side of a clamp, substantially as described.

No. 41,307. Plates for use in Secondary Batteries or Electrical Accumulators. (*Plaque à l'usage des batteries secondaires ou accumulateurs électriques.*)

The Foreign and Colonial Arc Accumulator Company, London, England, assignees of Anthony Reckenzaum, of Hemberton Road, England, 17th December, 1892; 6 years.

Claim. The manufacture of plates for secondary batteries or electric accumulators, by subjecting a metal plate to the action of electric sparks or the electric arc so as to physically and chemically change its surface and produce active material thereon as herein-before explained.

No. 41,308. Method of Repairing Electric Lamps.

(*Méthode de réparer les lampes électriques.*)

Casimir Pauthonier, Paris, France, 17th December, 1892; 6 years.

Claim. Le mode de soudure simple ou double décrit dans ce mémoire, pour le remplacement des charbons des lampes à incandescence, moyen consistant à introduire dans l'ampoule de la lampe préalablement entaillé à l'aide d'une lime à diamant pour que l'air n'y pénètre pas brusquement, un charbon neuf, un carbure d'hydrogène liquide tel qu'un de ceux designés dans la description ci-annexée et servant à opérer la soudure du dit charbon aux extrémités ou amorces de l'ancien, ménagées à cet effet, l'opération étant faite à l'aide d'une pince métallique ou tout autre instrument approprié laissant passer le courant electrique, et avec laquelle on ferme le circuit pendant la soudure du filament sur les attaches.

No. 41,309. Cultivator. *Scarificateur.*)

Thomas C. Darby, Chelmsford, Essex, and John Evan Stevenson, King's Lynn, Norfolk, both in England, 17th December, 1892; 6 years.

Claim.—In implements for cultivating land, the connection of the frame 2, carrying the cultivating implements by hinge joints 4^a, to the rear of the engine 4, and the connection of the upper part of said frame 2, by pin joint, to the piston rod 8, of a hydraulic cylinder 9, so that by operating the hydraulic valve gear the frame 2, may be caused to turn around the axle of the rollers 3, and thereby adjust the depth of work of the forks or lift them entirely off the ground, substantially as herein shown and described. 2nd. In combination with the parts referred to in claim 1, the uprights 11, resting by their feet 11^a, on the ground, and communicating motion to the hydraulic valve gear for automatically lifting and lowering the frame 2, as the implement passes over uneven ground, substantially as herein shown and described. 3rd. In implements for cultivating land, the coupling up of the engine piston rods 25, directly with the digger crank shaft 22^x, so as to obtain a direct action of the engine upon the forks, substantially as herein shown and described and for the purpose stated. 4th. In implements for cultivating land, the combination with the digging forks 1, of coulters behind such forks, substantially as herein shown and described and for the purpose stated. 5th. In implements for cultivating land, the combination with the digging forks 1, and coulters, of a hinged plate 6, behind the coulters, so as to prevent the earth from being thrown too far back when digging at a high speed, substantially as herein shown and described. 6th. In implements for cultivating land, the hydraulic cylinder 15, connected with the steering gear and actuated by a valve 17, operated by a foot lever 18, on tender, substantially as herein shown and described. 7th. In implements for cultivating land, an extended roller base resting upon almost all the ground worked by the machine, substantially as herein shown and described. 8th. In implements for cultivating land, a fork socket to enable the fork tines to be adjusted therein, combined with the peculiar arrangement of the fork head lever 1^b, the axis 34, of the connecting or radius links 23, and the crank axis 22^x, whereby the fork tines are caused to make a straight cut into the ground, and then quickly to rise out therefrom, substantially as herein shown and described.

No. 41,310. Sewing Machine. (*Machine à coudre.*)

Edward Kohler, of London, England, 17th December, 1892; 6 years.

Claim.—1st. In a lock stitch sewing machine, the combination with the shuttle or other loop adapted to enter the loop before it escapes from the opening device, of a reciprocating loop holder adapted to enter the loop before it escapes from the opening device, and hold it open in the path of the needle, as and for the purpose set forth. 2nd. In a sewing machine, the combination with a shuttle suitably actuated, of a reciprocating loop holder provided with a fork to receive the loop as it leaves the shuttle, and hold it open for the next descent of the needle, means for horizontally oscillating the loop holder during its reciprocation, and means for reciprocating the loop holder in such a manner as to permit of the said oscillation, and capable of being thrown in and out of action as required, substantially as and for the purpose set forth. 3rd. A loop holder for shuttle sewing machines, consisting of a flat plate having a fork at its front end, a cam extension, and a socket to receive a driving mechanism, substantially as described. 4th. In a shuttle sewing machine, the combination with a loop holder capable of being reciprocated and having a fork and a cam extension, of a throat plate formed on its underside, with a bevelled shouldered and a spring E^5, secured to the table of the machine, as and for the purposes set forth. 5th. In a shuttle sewing machine, the combination of a reciprocating loop holder formed with a fork, and a cam extension arranged parallel with the fork, of a feed dog, having on the underside a rib or feather which at a suitable moment, enters between the fork and the cam extension, to regulate the direction of return motion of the loop holder as described. 6th. As a driving mechanism for the loop holder, the combination of the vertical rotary shaft C, the eccentric H, on the said shaft, the rocking arm H^2, and bell crank lever K, and a pivot on which said arm and lever are separately pivoted, the said arm and lever being connected, the one with the rod H^1, and the other with the loop holder and the spring lock bolt a, for locking the said arm and lever together, substantially as herein described. 7th. A loop holder for rotary hook lock stitch machines, consisting of a flat plate having a fork at its front end, and lateral horns or projections and a socket to receive a pin of driving mechanism. 8th. In a lock stitch sewing machine, the combination of a rotary hook suitably actuated with a reciprocating loop holder destined to enter and hold the loop open for the next descent of the needle and means for reciprocating the loop holder as set forth. 9th. The combination with a reciprocating loop holder of a plate secured to the underside of the throat plate, in the line of travel of the loop holder, as set forth. 10th. As a driving mechanism for the loop holder in a rotary hook lock stitch sewing machine, the shaft D^1, eccentric T and connections, shaft X, sleeve Y, pin collar Z, on the sleeve, and the locking bolt X, for locking the said collar and sleeve together, substantially as described.

No. 41,311. Apparatus for Destructive Distillation of Mineral Oils. (*Appareil pour la distillation destructive des huiles minérales.*)

John Laing, of Edinburgh, Scotland, 17th December, 1892; 6 years.

Claim.—The combination with a still for the destructive distillation of mineral oils, of a loaded outlet valve and a relief tank interposed between the said outlet valve and an ordinary condenser, the said relief tank being used more or less as a condenser, substantially as and for the purposes herein set forth.

No. 41,312. Spark Arrester. (*Arrête-étincelle.*)

James W. Ramsey, Paragould, Arkansas, U.S.A., 17th December, 1892; 6 years.

Claim.—1st. The combination with a smoke stack, of a chamber arranged adjacent thereto, and having its upper end communicating therewith, the deflector arranged in the upper end of the chamber, and forming an exit opening communicating with the smoke stack, and a damper hinged to one of the deflectors, and arranged to close the smoke stack to cause the smoke and products of combustion to pass into the chamber, and adapted to be opened to provide a straight draft and means for controlling the damper, substantially as described. 2nd. The combination with a smoke stack, of a chamber having its upper end communicating therewith, the deflectors 7^a and 9 arranged in the upper end of the chamber, and providing passages 7 and 8, a hinged deflecting damper arranged to form a continuation of the deflector 7^a, and adapted to open and close the smoke stack and provided with an arm, and a rod hinged to the arm, substantially as set forth. 3rd. The combination with a smoke stack, of a chamber arranged adjacent thereto and having its upper end communicating therewith, the deflectors arranged in the upper end of the chamber, and forming entrance and exit passages, a damper hinged to one of the deflectors, and a water jet arranged in the entrance passage, substantially as described. 4th. The combination with a smoke stack, of a chamber having its upper end communicating therewith, the curved deflectors 7^a and 9 arranged in the upper end of the chamber and providing passages 7 and 8, a hinged deflecting damper arranged to form a continuation of the deflector 7^a, and adapted to open and close the smoke stack, substantially as set forth.

No. 41,313. Holder for Check Reins.

(*Appareil pour tenir les fausses-renes.*)

Frederick Pemberton Thompson, Fredericton, New Brunswick, Canada, 17th December, 1892; 6 years.

Claim. 1st. A combined check rein and shoulder strap holder, consisting of a plate adapted to be secured to a harness saddle provided with a vertical shank, having transversely projecting arms at its upper end and a forwardly and downwardly projecting arm having its end turned upwardly, forming a hook, substantially as described. 2nd. The combination, with the check rein hook, having

a circular opening in its rear end, of the bolt consisting of the head 2, circular portion 3, angular part 4, the screw threaded portion 5, and binding nut 6, substantially as described. 3rd. The combination, with the plate, having a circular opening, and formed with a vertical shank and transverse arms, of the securing bolt consisting of the enlarged head, a circular portion engaging with the opening in said plate, the angular portion adapted to engage with a corresponding opening in a harness saddle, the screw threaded portions and the binding nut, substantially as described.

No. 41,314. Car Coupler. (*Attelage de chars.*)

Joseph William Klingler, Beaver Springs, Pennsylvania, U. S. A., 19th December, 1892; 6 years.

Claim. A car coupling, comprising the draw-head provided with the intersecting horizontal and transverse slots, the angular swinging jaw G, pivoted in the horizontal slotted part of the draw-head, and having the notched inner arm *f*, and the transverse apertures *g*, g^{11}, on opposite sides of its pivot, the right angled latch pivoted in the vertically slotted part of the draw-head, and having the beak *i*, adapted to take over the notched arm of the swinging jaw, and the auxiliary locking bolt L, fitted in openings in the draw-head, and adapted to fit in either apertures *g*, or g^{11}, of the swinging jaw, substantially as described.

No. 41,315. Insulator Pin. (*Piton isolateur.*)

Fred Morton Locke, Victor, New York, U. S. A., 19th December, 1892; 6 years.

Claim.—1st. An insulator pin, comprising a base having a central opening, an insulating sleeve mounted thereon, and a bolt for securing them together and to the cross arm, as set forth. 2nd. An insulator pin, comprising a hollow base, and a threaded or corrugated insulating sleeve mounted thereon, and a bolt for securing them together and to the cross arm. 3rd. An insulator pin, comprising a base, enlarged in size at its lower end and having a central opening, an insulating sleeve mounted thereon and means for securing them together and to the cross arm. 4th. An insulator pin, comprising a hollow base, having a central opening, its upper end roughened and a sliding sleeve mounted thereon, and having recesses in its upper end and a bolt for securing them together and to the base arm, as set forth. 5th. An insulating pin, comprising a base, having lateral supports adapted to be secured to the cross arm, a sleeve mounted thereon and a bolt passing through it and secured in the base, as set forth. 6th. An insulator pin, comprising a base, having an upwardly extending mounted shank, a sleeve adapted to be mounted upon said base and secured by means of said threaded shank.

No. 41,316. Band Cutter and Feeder.

(*Coupe-hart et alimentateur.*)

Andrew Wemple and George William Smith, both of Chicago, Illinois, U.S.A., 19th December, 1892; 6 years.

Claim.—1st. A feeder or band cutter comprising a carrier belt or belts, a knife or cutter, and a roller opposed to said knife or cutter and to the carrier belt or belts, substantially as described. 2nd. A feeder and band cutter comprising a carrier belt or belts, a knife or cutter, and a roller arranged opposite the knife or cutter and the belt, and movable bodily toward and from the same, substantially as described. 3rd. A feeder and band cutter comprising a carrier belt or belts provided with prongs or fingers, supporting strips for the bundle located above the belt and forming slots for the passage of the prongs or fingers, a knife or cutter located in the path of the bundle carried by the said belt or belts, and a roller arranged opposite the knife and the said supporting strips, substantially as described. 4th. A feeder and band cutter comprising a carrier belt or belts, a knife or cutter for severing the band, a roller arranged opposite said knife or cutter and the belt, and movable bodily toward and from the same, and means of giving rotary motion to said roller, substantially as described. 5th. A feeder and band cutter comprising a carrier belt or belts, a revolving shaft provided with sprocket wheels or pulleys supporting and giving movement to said belt or belts, a knife or cutter for severing the bands, a roller arranged opposite the knife or cutter and movable bodily toward and from the same, swinging arms supporting said roller mounted concentrically with said shaft, and belt pulleys upon the said shaft and roller, substantially as described. 6th. A feeder and band cutter comprising a carrier belt or belts provided with prongs or fingers, stationary supporting strips located above the belts and forming slots for the said prongs or fingers, a knife or cutter for severing the bands mounted upon one of said stationary strips, and a roller located opposite said knife or cutter and movable bodily toward and from the same, substantially as described. 7th: A feeding device comprising a trough, the bottom of which is composed of a series of strips of unequal vertical thickness, a plurality of carrier belts provided with prongs and arranged to rest and travel upon the thinner strips, and supporting strips for the bundle secured to the upper surface of the thicker strips and forming slots for the passage of said prongs or fingers, substantially as described.

No. 41,317. Method of and Means for Applying Runners to Wheeled Perambulators. (*Méthode et moyen d'appliquer des patins aux voitures d'enfants.*)

Charles Gladman, Peterboro', Ontario, Canada, 19th December, 1892; 6 years.

Claim.—1st. The combination of the guards D, D, hinged with the runners C, C, to turn under the wheels of a child's perambulator when required and fold or turn up under the guard when not required, to accommodate where there is snow and no snow, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the position of the hinges F, F, so placed that the runners C, C, will swing under the wheels of the carriage and turn back under the guard D, D, substantially as and for the purpose hereinbefore set forth.

No. 41,318. Baby Walker. (*Chariot d'enfant.*)

Margaret Hoyer, Rixford, Pensylvainia, U.S.A., 19th December, 1892; 6 years.

Claim.—The combination of the table having the central opening and countersinks and the superimposed curved adjustable plate having arms bent to conform to the top of the table and the countersinks.

No. 41,319. Hay Press. (*Presse à foin.*)

Louis Primeau, Beauharnois, Quebec, Canada, 19th December, 1892; 6 years.

Claim.—1st. In a hay press the combination with the long sills A, and box B, having suitable feed and outlet openings, of the plunger D, rod E, the frame G, jointed at F, to the said rod E, and pivoted to the sills A, substantially as set forth. 2nd. In a hay press the combination with the plunger rod E, operating a plunger in the box of a hay press, jointed at F, to the frame G, journalled in the sills of the said hay press of the arm H, and pulley I, and pulley J, chains K and L, secured to the joint F, and means for operating the said chains, substantially as set forth.

No. 41,320. Rod Coupling. (*Joint de tige.*)

Louis Buese and John Cowling, both of Republic, Michigan, U.S.A., 19th December, 1892; 6 years.

Claim.—1st. A rod coupling comprising a supporting yoke, a swivel plug held to turn in the yoke and provided with a threaded lower end, a screw extending longitudinally through the plug and adapted to turn the same, a collar held to turn with the upper end of the screw, a hand wheel journaled loosely on the screw, and a fastening device to connect the hand wheel and collar, substantially as described. 2nd. A rod coupling comprising a supporting yoke, a swivel plug journalled in the yoke and having a longitudinal bore and a threaded lower end, a screw extending longitudinally through the plug and adapted to turn the latter, a collar held to slide on and turn with the screw, said collar having perforations therein, a hand wheel journalled loosely on the screw near the collar, and a pin secured to the hand wheel, and adapted to register with the holes in the collar, substantially as described. 3rd. A rod coupling comprising a supporting yoke, a swivel plug held to turn in the yoke and provided with a longitudinal bore and a threaded lower end, a nut secured in the bore of the plug, a screw extending longitudinally through the plug and held to turn in the bore, stops to limit the movement of the screw, a collar held to slide on and turn with the screw, a hand wheel journalled on the screw adjacent to the collar, and a fastening device to secure the hand wheel and collar together, substantially as described. 4th. A rod coupling comprising a supporting yoke, provided with a bail, a swivel plug journalled in the yoke and having a threaded lower end, a nut held within the plug, a screw extending longitudinally through the nut, the screw having stops near its ends and a squared head at its outer end, a perforated collar held to slide on the squared head of the screw, a hand wheel journalled on the screw above the collar, a pin secured to the hand wheel, and held to register with the perforations in the collar, and a spring to force the collar and hand wheel apart, substantially as described.

No. 41,321. Method of Making Nailless Horse-shoes.

(*Méthode de fabriquer les fers à cheval sans clous.*)

Joseph Benfield, Walsall, Stafford, England, 19th December, 1892; 6 years.

Claim.—1st. The hereindescribed method of forming horse-shoes and the like consisting of roughly binding the heated bars to the approximate form of the shoe then subjecting the bar thus bent to the action of dies and forming thereby the shoe and its clips, substantially as described. 2nd. The method of forming horse-shoes consisting in binding the bar to the approximate form of the shoe, subjecting the bar thus bent to pressure between dies and forming thereby the shoe and its attaching clips with a thin web or fin projecting around the edge and then separating the said web from the shoe with the exception of small partitions to be turned up in the form of spikes, substantially as described. 3rd. In combination a pair of dies for forming horse-shoes and adapted to receive a roughly bent bar the lower die having a recess *b* in the form of the shoe designed to

receive the bent bar, one of the said dies having lateral depressions a, substantially as described for the formation of clips. 4th. In combination a pair of dies one of which has a recess b^1 of the form of the shoe a projection b^2 extending around in the said recess, and one of the dies having lateral recesses for the formation of clips on the shoe substantially as described. 5th. In combination a pair of dies one of which has a recess b^1 of the form of the shoe and the other having a projection portion a^4 with sloping edges adapted to enter a corresponding depression in the other die and having also the lateral depressions a for forming the clips. 6th. The herein described method of forming horse-shoes, consisting in bending a bar of metal roughly to the form of the shoe subjecting the same to pressure between dies and forming clips having sufficient additional metal connected with the clips to provide spikes thereon substantially as described.

No. 41,322. Car Wheel. (*Roue de chars.*)

George W. Cushing, Evanston, Illinois, U.S.A., 19th December, 1892; 6 years.

Claim.—A double plate car wheel composed of a hub, two sides plates or webs, and a flanged tread section or rim having on its inner surface a series of transverse ribs extending from one side plate to the other, and a series of circumferential ribs interposed between and connecting said transverse ribs, substantially as set forth.

No. 41,323. Portable Heater. (*Calorifère portatif.*)

John Graves, Brooklyn, New York, U.S.A., 19th December, 1892; 6 years.

Claim. 1st. A hydrocarbon heater, consisting of a radiator boiler having downwardly and outwardly flaring wings and a burner beneath the radiator boiler and between the said wings. 2nd. A hydrocarbon heater, consisting of radiator boiler whereof the base forming said boiler is internally and externally corrugated wings on said base and a burner between said wings. 3rd. A hydrocarbon heater, consisting of a radiator boiler, having a corrugated base, a pipe or pipes lengthwise of said base and communicating at both ends thereto, and a burner beneath said pipes. 4th. In combination with a radiator and a burner a boiler composed of two shells, with a water space between the shells, and flues through the shells for the products of combustion. 5th. In hydrocarbon heaters, the combination with radiator loops, boiler in the base of the loops and flame tube beneath and parallel with the boiler. 6th. In hydrocarbon heaters, the combination of radiator loops, boiler in the base of the loops, flame tube beneath and parallel with the boiler and water legs in the walls of the flame tube. 7th. In hydrocarbon heaters, having a radiator and boiler, a filling cock and a discharge cock at opposite sides and the lowest part of the boiler. 8th. In hydrocarbon heaters, a vertically adjustable lamp tray having guide and stop ribs for the lamp.

No. 41,324. Steam Generator. (*Générateur de vapeur.*)

Richard Cunliffe, Pendleton, Lancaster, England, 19th December, 1892; 6 years.

Claim.—1st. The general construction and arrangement of parts thereof adapted and operating substantially as and for the purpose specified. 2nd. The formation in the flue tube a, of pocket or cavities b, having pipes d, and openings c, through which the water in the generator is permitted to circulate, substantially as and for the purpose specified. 3rd. The application to the interior of the flue a^1, of a hollow cone or taper casing g, inside of which is employed a steam jet and a water spray pipe l, l^1, and in front thereof a perforated partition r, and a setting tank w, below the same, substantially as and for the purpose set forth.

No. 41,325. Method of and Apparatus for Making Fillers for Cigars. (*Mode et appareil de préparer le tabac pour la fabrication des cigars.*)

Max Van Gülpen, of Mulheim on the Rhine, Prussia, 19th December, 1892; 6 years.

Claim.—1st. The method of making fillers for cigars, which consists in putting strips of tobacco into a mold having the form of a cigar, pressing the tobacco so as to condense the same to a compact filler, and conveying the filler thus produced from the mold directly into the bight of the apron of a bunching machine, substantially as described. 2nd. For co-operative use in making cigar fillers, a series of molds, each consisting in the tray a, divided lengthwise in two parts, the carrier b, to which the tray parts are hinged at the top, and springs b^1, acting against the back of the tray parts, a machine comprising a table f, with a guiding way for the molds, means for advancing the molds stepwise, one or more vertically movable counter mold pieces adapted to pass into the molds, a vertically movable plate e, being normally in the path of the molds, a vertically movable plunger i, means for lowering and raising the plate e, and plunger i, and means in connection with the molds and the machine, for locking and unlocking the parts of the tray a, substantially as specified. 3rd. For co-operative use in making cigar fillers, a series of molds each consisting in the tray a, divided lengthwise in two parts, having the projections a^1, the carrier b, to which the tray parts are hinged at the top, springs b^1, acting against the back of the tray parts, and locking pieces b^2, movable vertically in the carrier b, and having notches engaging the projections a, and a machine consisting in a table f, having guiding ledges f^1, mechanism for pushing the molds forward stepwise, a series of vertically reciprocating counter mold pieces e, adapted to pass into the trays a, a vertically movable plate e, being normally in the path of the molds, and having the ridges e, adapted to register with the locking pieces b^2, means for lowering and raising the plate e, together with the mold standing at the time on the same, a plunger i, registering with the tray of the said mold, and means for pushing the plunger downward into the tray after the plate e, and the mold have descended, substantially as described. 4th. In a machine for making cigar fillers, by means of individual molds, the mechanism for advancing the said molds stepwise, which consists in the reciprocating slide g^2, arm g^1, pivoted to the slide, and having a cross head and the driver g, two pairs of superposed guiding grooves for the cross head to slide in and separated from each other by ledges g^5, which have such length as to be cleared by the cross head at each end of its stroke, and springs g^7, fixed in the lower grooves and adapted to raise the cross head at the end of its back stroke, substantially as specified. 5th. In a machine for making cigar fillers, by means of molds comprising the carriers b, divided tray a, and spring b^1, acting on the tray parts, the mechanism for lowering a mold and expelling the filler, which consists in the vertically movable plate e, the plate i^1, vertically movable relatively to plate e, guides for conducting, and springs i^4, for connecting together the plates e, and i^1, the plunger i, fixed to plate i^1, means for lowering and raising the plate e, a lever whereby the upward motion of plate e, is transmitted to plate i, so that the latter rises further than plate e, catches i^5, in connection with plate e, and adapted to arrest plate i^1, at the end of its upward course and fixed pins i^6, whereby the catches i^5, are disengaged from plate i^1, when plate e, is near the end of its downwards course, substantially as set forth. 6th. In a machine for making cigar fillers, by means of individual molds, the combination of the table f, having two parallel pairs of guiding ledges f^1, f^1, and f^4, f^5, and the transverse ledge f^3, means for advancing the molds stepwise between the ledges f^1, f^1, a reciprocating slide 1, moving along the ledge f^3, and adapted to push one mold after the other sideward, and a reciprocating slide moving parallel to the ledges f^4, f^5, and adapted to convey the molds stepwise backward, substantially as specified.

No. 41,326. Method of and Means for the Propulsion of Vessels. (*Moyens de propulser les vaissaux.*)

John Sketchley Morton, New York, State of New York, U.S.A., 19th December, 1892; 6 years.

Claim.—1st. In the herein described invention for the propulsion of vessels, a reactionary force generated by intermittently concentrating the full force of an engine upon the piston of a pump, and then transmitting the force by intermittently forcing water with the engine and pump through an eduction nozzle into the water in which the vessel floats, in pulsatory currents or jets, substantially as set forth. 2nd. In the herein described invention for the propulsion of vessels, an intermittent reactionary impelling force, obtained by forcing water into a reactionary water motor, provided at one of its ends with an eduction nozzle, and at its opposite end with an induction pipe, through which pipe the water is intermittently forced into the motor, and impulsively discharged in an amount equal to the inflow through the eduction nozzle into the water in which the vessel floats, whereby the reactionary force derived from the discharge of the water reverts to the opposite end of the motor as an impelling force. 3rd. In the herein described invention for the propulsion of vessels by intermittent reactionary force, a reactionary water motor, having its large end of an area proportionate with the force to be exerted, while the sides thereof converge to the opposite end, one end being provided with an induction pipe for the admission of water under pressure, to be discharged from the nozzle in the other end of the motor into the water in which the vessel floats, in pulsatory currents or jets, as an impelling force. 4th. In the herein described invention for propelling vessels, a reactionary water motor of substantially conical form, having an inward ring projection or shoulder inside thereof, at or near its induction nozzle, to form a water packing inside of the motor, for the purpose of obviating the friction which the water would otherwise generate while moving under heavy pressure along the interior surface of the motor, during its discharge therefrom through its nozzle into the water in which the vessel floats. 5th. In the herein described invention for the propulsion of vessels, a reactionary impelling force obtained by concentrating the entire force exerted by an engine upon the piston of a pump, and by transmitting said force from said pump directly to a reactionary water motor solidly filled with water, whereby the interior surface of the motor sustains the full force exerted by the piston of the engine. 6th. In the herein described invention for impelling vessels by reactionary force, the combination of the reactionary water motors, pumps, induction and eduction pipes, with a water tank to be located at or near the bottom of the vessel, and provided with an air escape pipe leading from said tank, substantially as set forth. 7th. In the herein described invention for impelling vessels by reactionary force, the combination of the engine, pumps, and the pipes connecting the pumps with the stern, bow and side reactionary water motors, and the controlling valves in the pipes connecting said pumps and motors for diverting the water forced by the pumps through the pipes into the motors in the stern, bow and

sides of the vessel, respectively, and therefrom through their respective nozzles into the water in which the vessel floats, as and for the purpose set forth. 8th. In the herein described invention, the means for utilizing reactionary force in the propulsion of vessels, without the use of check valves located between the piston of the pump and the eduction nozzle, a point of discharge of the water from the pump cylinder into the water in which the vessel floats, in pulsatory currents or jets, substantially as set forth. 9th. In the herein described invention for the propulsion of vessels by intermittent reactionary force, a reactionary water motor, with an eduction nozzle at one end, its other end being provided with a solid piston to be forced by an engine into the water motor filled with water, thereby forcing an amount of water equal to its displacement out of said motor through the nozzle into the water in which the vessel floats, in pulsatory currents or jets, as a propelling force. 10th. In the herein described invention for propelling vessels, the combination of the vessel, engine, pump or pumps, reactionary water motor or motors, induction pipes, eduction pipes, pipe connections, nozzles, two-way valves, check valves in the induction pipes connecting the water tank to the pumps with the tank in the bottom of the vessel from which water is supplied to the pumps through the induction pipes and forced by the pumps through the eduction pipes into the motors, and out of and from the said motors through their eduction nozzles into the water in which the vessel floats, the orifice at the bottom of the vessel for the admission of the water into the tank, the valve in the tank for shutting off its inflow of water, the strainer over the orifice to prevent extraneous matter from entering the tank, the rib or scoop projecting from the bottom of the vessel, at or near the orifice, to force the water into and through the orifice into the tank in the movement of the vessel, the air escape pipe leading from the tank, the draw cocks, the ring projection or shoulder inside the motors at or near the nozzles thereof, and the thrust blocks, as and for the purpose set forth.

No. 41,327. Apparatus for Producing Indented Type Impressions. (*Appareil pour produire des impressions de caractères indentés.*)

William James Howell, Astoria, New York, U.S.A., 19th December, 1892; 6 years.

Claim. 1st. The combination of a support, a type longitudinally movable therein, a body of indentable material in front of the face of said type, a hammer in rear of said type, and a means of actuating said hammer to press said type into said body of indented material, substantially as described. 2nd. The combination of a support, a type longitudinally movable therein, a body of indentable material in front of the face of said type, a hammer in rear of said type, a motor and mechanism between said motor and said hammer for transmitting motion to said hammer, and a means of manually controlling said mechanism, the said hammer operating to press said type into said body of indentable material, substantially as described. 3rd. The combination of a movable support, a type longitudinally movable therein, a body of indentable material, a hammer in rear of said type a means of actuating said hammer to press said type into said body of indentable material, a motor mechanism between said motor and said support whereby motion is transmitted from said motor to said support to move said support and thereby to carry said type into and out of the path of said hammer, and a means of manually controlling said transmitting mechanism, substantially as described. 4th. The combination of a movable support, a type longitudinally movable therein, a body of indentable material, a hammer in rear of said type, a motor, mechanism between said motor and said support whereby motion is transmitted from said motor to said support to move said support, and thereby to carry said type into and out of the path of said hammer, mechanism between said motor and said hammer, whereby motion is transmitted from said motor to said hammer to cause said hammer to press said type into said body of indentable material, and a means of manually controlling said transmitting mechanism substantially as described. 5th. The combination of a body of indentable material, a movable support therefor, a type, a support in which said type is longitudinally movable, a hammer in rear of said type, a means of actuating said hammer to press said type into said body of indentable material, a motor, mechanism between said support for said body of indentable material and said motor, whereby motion is transmited from said motor to said support to bring different points on the surface of said body of indentable material in face of said type, and a means of manually controlling said transmitting mechanism, substantially as described. 6th. The combination of a movable support, a type longitudinally movable therein, a body of indentable material, a hammer in rear of said type, a means of actuating said hammer to press said type into said body of indentable material, a motor, mechanism between said motor and said support, whereby motion is transmitted from said motor to move said support and hence said type, over the surface of said body of indentable material, and a means of manually controlling said transmitting mechanism, substantially as described. 7th. The combination, of a body of indentable material, a movable support therefor, a type and support in which said type is longitudinally movable, a hammer in rear of said type, a motor, mechanism between said support for said body of indentable material and said motor, whereby motion is transmitted from said motor to said support to bring different points on the surface of said body of indentable material in face of said type, mechanism between said motor and said hammer, whereby motion is transmitted from said motor to said hammer to press said type into said body of indentable material, and a means of manually controlling said transmitting mechanism, substantially as described. 8th. The combination of a movable support, a type longitudinally movable therein, a body of indentable material, a hammer in rear of said type, a motor, mechanism between said motor and said support, whereby motion is transmitted from said motor to move said support, and hence said type, over the surface of said body of indentable material, mechanism between said motor and said hammer, whereby motion is transmitted from said motor to said hammer to press said type into said body of indentable material, and a means of manually controlling said transmitting mechanism, substantially as described. 9th. The combination of an annular rotary support, a type radially disposed and longitudinally movable in said support, and projecting into the central space therein, a hammer vibrating in said space, and a means of rotating said support to bring the said type into and out of the path of movement of said hammer, substantially as described. 10th. The combination of the annular rotary cylinder 57, having a radial chamber, type 58, in said chamber, and projecting into the central space 59, in said cylinder, the spring 62, acting upon said type, the vibrating hammer 48, arranged in said annular space, and means for rotating said cylinder to bring the said type into and out of the path of movement of said hammer, substantially as described. 11th. The combination of the pivoted plate 15, the key 4, having cam projection 12, acting upon and vibrating said plate when said key is depressed, the rotary type carrying cylinder 57, and gearing between said plate 15 and said cylinder, for transmitting the motion of said plate to said cylinder, substantially as described. 12th. The combination of the pivoted plate 15, two keys, as 4, located at different distances from the pivot of said plate, and each provided with a cam projection 12, acting upon and vibrating said plate when either key is depressed, the rotary type carrying cylinder 57, and gearing between said plate 15 and said cylinder for transmitting the motion of said plate to said cylinder, substantially as described. 13th. The combination of the pivoted plate 15, the key 4, having cam projection 12, acting upon and vibrating said plate when said key is depressed, a downwardly projecting pin 13 on said key, the rotary type carrying cylinder 57, and gearing between said plate 15 and said cylinder for transmitting the motion of said plate to said cylinder, the said pin 13 entering an aperture in said plate 15, after said plate has been vibrated by the action of said projection 12, substantially as described. 14th. The combination of the pivoted plate 15, springs 18 attached at one end to fixed supports, and at the other ends respectively to the extremities of said plate, the key 4, having cam projection 12, acting upon and vibrating said plate when said key is depressed, the rotary type carrying cylinder 57, and gearing between said plate 15 and said cylinder for transmitting the motion of said plate to said cylinder, substantially as described. 15th. The combination with the key 4, carrying the cam projection 12, the pivoted plate 15, acted upon and vibrated by said cam, springs 18 attached at one end to fixed supports, and at the other ends respectively to the extremities of said plate, the type cylinder 57, and rotary support therefor, and the belt or chain 52 passing around said rotary support and connected at its ends to the extremities of said curved bar 54, the said belt or chain transmitting the motion of said bar 15 to said cylinder 57, substantially as described. 16th. The combination of a support, a type longitudinally movable therein, a hammer in rear of said type and operating to press upon and longitudinally move said type, a motor, a rotary spur wheel driven by said motor, a finger key, transmitting mechanism between said hammer and said wheel, whereby said wheel communicates vibratory motion to said hammer, and mechanism controlled by said finger key for moving said transmitting mechanism into engagement with said wheel, substantially as described. 17th. A support, a type 58 longitudinally movable therein, the pivoted hammer 48 in rear of said type, and operating to press upon and longitudinally move said type, a motor, the spur wheel 40, rotated by said motor, and the movable shouldered dog 30 supported in proximity to said wheel, and connected to the shank of said hammer, in combination with the finger key 4, and transmitting mechanism between said key and dog for moving said dog on the depression of said key into engagement with said wheel, the said wheel, when said dog is engaged as aforesaid, causing said hammer to vibrate on its pivot and press upon said type, substantially as described. 18th. The combination of a support, a type 58 longitudinally movable therein, the pivoted hammer 48 in rear of said type and operating to press upon and longitudinally move said type, a motor, the spur wheel 40 rotated by said motor, a fixed support, the cam groove 32, the movable cog 30 having a pin or roller travelling in said cam groove, and provided with a shoulder 39 disposed in proximity to said spur wheel 40, link 37 connecting said dog 30 to the hammer lever, key 4 and pivoted lever 24, 25, the said lever 24, 25, being vibrated on its pivot when said key 4 is depressed, and moving said dog 30 into engaging position with said wheel 40, substantially as described. 19th. The combination of a support, a type 58 longitudinally movable therein, the pivoted hammer 48 in rear of said type, and operating to press upon and longitudinally move said type, a motor, the spur wheel 40 rotated by said motor, a fixed support having the cam groove 32, the movable dog 30 having a pin or roller travelling in said cam groove, and provided with a shoulder 39 disposed in proximity to said spur wheel 40, the

link 37 connecting said dog 30 to the hammer lever, the pivoted bar 35 and retracting spring 35* extending between said dog and said bar 35, the pivoted lever 24, 25, having at one extremity the slotted link 28 receiving a pin on said dog 30, and the finger key 4 in proximity to the other end of said lever and operating when depressed to move said end downwardly, thereby bringing the shoulder on said dog 30, into engaging position with the wheel 40, substantially as described. 20th. The combination of a laterally moving type, an impression surface in front of said type, a pivoted lever 4, and mechanism interposed between said lever and said type, whereby when said lever is depressed, said type is moved laterally to a new position before said surface, a motor, and mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and so to move said type as aforesaid, substantially as described. 21st. The combination of a longitudinally movable type, a movable support therefor, a vibrating hammer arranged in rear of said type, and operating to press upon and longitudinally move said type, a pivoted lever 4, and mechanism interposed between said lever and said type support, whereby when said lever is depressed the said type support is moved to carry said type into the path of the hammer, a motor, and mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and so to move said type support as aforesaid, substantially as described. 22nd. The combination of a longitudinally movable type, a movable support therefor, a vibrating hammer arranged in rear of said type, and operating to press upon and longitudinally move said type, a pivoted lever 4, mechanism interposed between said lever and said type support, whereby when said lever is depressed, the said type support is moved to carry said type into the path of said hammer, a motor, mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and so to move said type support, and a means of detachably connecting said lever and said mechanism, substantially as described. 23rd. The combination of a longitudinally movable type, a movable support therefor, a vibrating hammer arranged in rear of said type, and operating to press upon and longitudinally move said type, a pivoted lever 4, mechanism interposed between said lever and said type support, whereby when said lever is depressed for a certain distance, the said type support is moved to carry said type into the path of said hammer, a motor mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and so as to move said type support and a locking device whereby said lever when pressed down for a certain less distance than the distance aforesaid, is automatically connected to said transmitting mechanism, substantially as described. 24th. The combination of the rotary type cylinder, vibrating plate 15, and bolt 54, for communicating the motion of said plate to said cylinder, the key 4, having cam projection 12, acting on said plate 15, and provided with the hook 138, a motor, the rotary spur wheel 40 actuated thereby, the pivoted lever 24, 25, provided at one end with a means of engagement with the spur wheel 40, and at the other end with a bar or plate disposed beneath the cam projection 12, on key 4, the locking plate 134, the bent rod 135, supporting said plate and pivoted to lever 24, and fixed rollers 136, through which said rod 135 passes, substantially as described. 25th. In combination with an impression surface, a type, and a means of moving said type to produce an indentation on said surface, a movable support for said surface, a pivoted lever 4, and mechanism interposed between said lever and support, whereby when said lever is depressed the said support is moved in front of said type to expose a new portion of the surface to indentation, a motor, and mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and so to move said support as aforesaid, substantially as described. 26th. In combination with an impression surface, a type, a means of moving said type to procure an indentation in said surface, a movable support for said surface, a pivoted lever 4, and mechanism interposed between said lever and support, whereby when said lever is depressed the said support is moved in front of said type to expose a new portion of the surface to indentation, a motor, mechanism between said lever and said motor, whereby motion is communicated from said motor to said lever to depress said lever, and to move said support as aforesaid, and a means of detachably connecting said lever and said mechanism, substantially as described. 27th. In combination with the carriage 96, and laterally moving frame 118, 119, 120, thereon, said frame having the rack bar 122, the finger key 133, rod 68, pivoted lever 69, pinion 94, and pinion 99 engaging with said rack bar 122, substantially as described. 28th. In combination with the carriage 96, and laterally moving frame 118, 119, 120 thereon, said frame having the rack bar 122, the finger key 133, rod 68, pivoted lever 69, rack bar 94, jointed to lever 69, bent pivoted rack bar 102 receiving and vibrated by the rack bar 94, pinion 95 disposed between said rack bars 94 and 102, and pinion 99 engaging with said rack bar 122, substantially as described. 29th. In combination with the carriage 96, and laterally moving frame 118, 119, 120, thereon, said frame having the rack bar 122, the finger key 133, rod 68, pivoted lever 69, bent pivoted rack bar 102 receiving and vibrated by the rack bar 94, pinion 95 disposed between said rack bars 94 and 102, and supported on shaft 98, pinion 99 on said shaft 98 engaging with rack bar 122, and the pivoted bars 107 and 108 provided with springs 109 and 110, and with rollers at their ends bearing upon opposite sides of bar 94, substantially as described. 30th. In combination with a type, an impression surface, and a means of moving said type to produce an indentation in said surface, a support for said surface, and a means of moving said support nearer to or further from the type, substantially as described. 31st. In combination with an impression surface, a type, a means of moving said type to produce an indentation in said surface, the carriage 96 for supporting said impression surface, provided with a dove-tail projection 111, entering ways 112 in the bed 1, the nut 113 on said carriage, bearings 114 on said bed, and the screw 115 journalled in said bearings and received in said nut, substantially as described. 32nd. In combination with the carriage 96, having the circular transverse chambers 130 and 131, and the upper transverse bar 128, the frame 118, 119 and 120, and provided with a rack bar 122 entering the chamber 131, and the roller 121 entering the chamber 130, and the transverse bar 125 carrying the roller 127, said roller resting on the carriage bar 123, substantially as described. 33rd. In combination with a motor, the rotary spur wheel 40 actuated thereby, and the vibrating pivoted hammer 48, 38, the finger key 4, pivoted lever 24, 25, movable dog 30 linked to said lever, and provided with a shoulder 39, cam groove 32 in a fixed bracket, and receiving a roller or pin on said dog, pivoted bent lever 35, and spring 35* between said lever and said dog, and link 37 pivoted to said dog and to the hammer rod 38, and provided with a slot 37*, through which the pin connecting said link to said hammer rod passes, substantially as described. 34th. The combination of a longitudinally movable type, a body of indentable material supported in front of said type, a hammer arranged in rear of said type and operating to press said type into said body of indentable material, and means for laterally moving said type into and out of the path of said hammer, substantially as described. 35th. The combination of a longitudinally movable type, a body of indentable material movably supported in front of said type, a hammer arranged in rear of said type, and operating to press said type into said body of indentable material, and means for moving said body of indentable material in a direction at right angles to the movement of said type, substantially as described. 36th. The combination of a longitudinally movable type, a body of indentable material movably supported in front of said type, a hammer arranged in rear of said type, and operating to press said type into said body of indentable material, and means for moving said body of indentable material in a direction at right angles to the movement of said type, and means for moving said body of indentable material nearer to or further from said type, substantially as described. 37th. The combination of a rotary annular support, a type longitudinally movable, and radially disposed therein, and a hammer disposed within said support, and acting upon said type to move the same outwardly, substantially as described. 38th. The combination of a h... mer pivoted to a fixed support, and vibrating therein, and a removable rotary annular cylinder surrounding said hammer, and containing a radially disposed and longitudinally movable type, the said hammer acting upon said type to move the same outwardly, substantially as described. 39th. The combination of a fixed rotary tubular support, a detachable annular cylinder upon said support containing a type radially disposed and longitudinally movable therein, and a vibrating hammer within said cylinder the said hammer acting upon said type to move it outwardly, substantially as described. 40th. The combination of the fixed rotary tubular support, 50, the type cylinder containing type radially disposed and longitudinally movable therein, and having the sleeve 63 surrounding said support 50, and the vibrating hammer 48, 38, within said cylinder and said support, the said hammer acting upon said type to move them outwardly, substantially as described. 41st. The combination of a rotary tubular support, a hammer pivoted and vibrating transversely therein, and two or more annular cylinders containing type radially disposed and longitudinally movable therein the said cylinder being interchangeably applicable to said support, and the said hammer when either cylinder is upon said support acting upon said type to move the same outwardly, substantially as described.

No. 41,328. Gill Net Puller.

(Appareil pour retirer les filets.)

Robert O'Neil, Charlevoix, and John Coffey, Fairport, both in Michigan, U.S.A., 19th December, 1892; 6 years.

Claim. 1st. In a gill net puller the combination of a frame, a reciprocating net pulling grip thereon, chain and wheel mechanism on the frame and pulling grip carriage for operating the grip, and driving mechanism for the chain and wheel mechanism, substantially as herein set forth. 2nd. In a gill net puller the combination of a frame, a reciprocating net pulling grip thereon, chain and wheel mechanism on the frame, and pulling grip carriage for operating the grip, driving gearing for the chain and wheel mechanism, an adjustable cut-off on the frame controlling the time of closing of the pulling grip on to the net, and mechanism for actuating the same, substantially as herein set forth. 3rd. In a gill net puller, the combination of a frame, a reciprocating pulling grip thereon, chain and wheel mechanism on the frame, and pulling grip carriage for operating the grip, driving gearing for the chain and wheel mechanism, and a roller guiding the net to the grip, substantially as herein set forth. 4th. In a gill net pulller, the combination of a frame, a reciprocating pulling grip thereon, chain and wheel mechanism on the frame, and pulling grip carriage for operating the grip, driving gearing for the chain and wheel mechanism,

a net conveying reel, a driving chain geared therewith, and pawl and ratchet mechanism on the pulling grip carriage operating the net reel chain to carry the net inward only on the effective stroke of the pulling grip, substantially as herein set forth. 5th. In a gill net puller, the combination of a frame, a reciprocating net pulling grip thereon, chain and wheel mechanism on the frame, and pulling grip carriage for operating this grip-driving gearing for the chain and wheel mechanism, and a holding grip on the frame operated by the advancing pulling grip to close the holding grip on to the net prior to release of the net by or from the pulling grip, substantially as set forth. 6th. In a gill net puller, the combination of a frame, a reciprocating net pulling grip thereon, chain and wheel mechanism on the frame and pulling grip carriage for operating the grip, driving gearing for the chain and wheel mechanism, a roller arranged outside of the grip to oscillate laterally to control the lead of the net inboard to the pulling grip, and mechanism for actuating the same, substantially as herein set forth. 7th. In a gill net puller, the combination of a frame, a reciprocating net pulling grip thereon, chain and wheel mechanism on the frame and pulling grip carriage for operating this grip, driving gearing for the chain and wheel mechanism, a roller arranged outside the pulling grip and guiding the net thereto, a roller arranged outside of the guide roller and held to oscillate laterally to control the inward lead of the net to the guide roller and pulling grip, and mechanism for actuating the same, substantially as herein set forth. 8th. In a gill net puller, the combination with a frame, of a carriage reciprocating thereon, net gripping devices on the carriage, a pair of driving chains on the main frame operated in reverse directions, gearing actuating said chains, two shafts journalled transversely for independent rotation on the carriage, sprocket wheels on said shafts engaged by the reversely running driving chains, a ratchet wheel loose on each of the carriage shafts, a spring connecting each of the sprocket wheels or its shaft with the ratchet wheel loose on said shaft stops on the shafts and ratchet wheels limiting the turning of the wheels on the shafts by the springs, and pawls fulcrumed to the carriage and adapted to the ratchet wheels, substantially as herein set forth. 9th. In a gill net puller, the combination with a main frame, of a carriage reciprocating thereon, a frame fitted to slide lengthwise in the carriages, net gripping devices on the carriage geared with the sliding frame to be opened and closed thereby, a pair of reversely running driving chains on the main frame, gearing actuating said chains, two shafts journalled for independent rotation on the carriage, sprocket wheels on said shafts engaged by the driving chains, a ratchet wheel loose on each of the carriage shafts, a spring connecting each of the sprocket wheels or its shaft with the ratchet wheel loose on said shaft, stops on the shafts and ratchet wheels limiting the turning of the wheels by the springs, pawls fulcrumed to the carriage and adapted to the loose ratchet wheels, and trip pins on the net gripping devices engaging and disengaging the pawls and ratchet wheels as the sliding frame is moved in opposite directions through or in the carriage to close and open the net gripping devices, substantially as herein set forth. 10th. In a gill net puller, the combination with a main frame a, of a reciprocating carriage H, fitted thereon and provided with independently rotating shafts H^3, H^4, provided, respectively with fixed driving wheels H^1, H^2, and loose ratchet wheels H^5, H^6, and springs H^7, H^8, connected to the driving and ratchet wheels, a shaft G, on the main frame carrying driving wheels G^1, G^2, mechanism rotating the shaft G, endless chains J, K, supported by idler and guide wheels on the frame a, and carriage H, and running, respectively by their lower sides under the wheel G^1, and over the wheel G^2, and running at their free upper sides over the carriage wheels H^1, H^2, and pawls J^1, K^1, fulcrumed to the carriage H, and adapted to the ratchet wheels H^5, H^6, and for operation from the net gripping devices, substantially as herein set forth. 11th. In a gill net puller, the combination with a main frame a, of a reciprocating carriage H, thereon, a pair of net gripping jaws held to shafts A^1, A^1, journalled to the carriage, said shafts having trip pins l, l^1, a frame I, fitted to slide in the carriage, and geared with the shafts A^1, A^1, to open and close the grip jaws, independently rotating shafts H^3, H^4, on the carriage H, and carrying, respectively, fixed driving wheels H^1, H^2, and loose ratchet wheels H^5, H^6, and springs H^7, H^8, connected to the driving and ratchet wheels a driving shaft G, on the main frame carrying sprocket wheels G^1, G^2, mechanism rotating the shaft G, endless chains J, K, supported by idler and guide wheels on the main frame a, and carriage H, and running, respectively, by their lower sides under the wheel G^1, and over the wheels G^2, and running by their free upper sides over the wheels H^1, H^2, and pawls J^1, K^1, fulcrumed to the carriage H, and adapted to the ratchet wheels and to be engaged and disengaged by the grip shaft pins l, l^1, all arranged for operation, substantially as herein set forth. 12th. In a gill net puller, the combination with the pulling grip carriage and ratchet wheels held to shafts driven in opposite directions on the carriage, and driving mechanism for said shafts, of reversely set pawls hung to the carriage next the ratchet wheels, and springs acting on the pawls to assure their free full engagement with and disengagement from their respective ratchet wheels, after the pawls receive initial movements by or through the medium of the net gripping devices or their gearings, substantially as herein set forth. 13th. In a gill net puller, the combination with the pulling grip carriage and ratchet wheels held to shafts driven in opposite directions on the carriage and driving mechanism for said shafts, of reversely set pawls hung to the carriage next the ratchet wheels, springs acting on the pawls to assure their full engagement with and disengagement from the ratchet wheels and trip pins on the pulling grip acting on the pawls or on studs thereon to give reverse movements to the pawls as the grip opens and closes, substantially as herein set forth. 14th. In a gill net puller, the combination, with the pulling grip carriage and ratchet wheels held to shafts driven in opposite directions on the carriage, and driving mechanism for said shafts, of reversely set pawls J^1, K^1, hung to the carriage loops on staples m, on the pawls, pins m^2, held loosely to the staples and in the carriage, and springs M, on the pins m^2, tilting the pawls either way or to the ratchet wheels or to stops on the carriage after the pawls receive initial overbalancing movements, substantially as herein set forth. 15th. In a gill net puller, the combination with the pulling grip carriage, and ratchet wheels held to shafts driven in opposite directions on the carriage, and driving mechanism for said shafts, of reversely set pawls J^1, K^1, hung to the carriage and having studs L, staples m, on the pawls, pins m^2, held loosely to the staples and in the carriage, springs M, on the pins m^2, tilting the pawls to opposite extremes of movement to and and from the ratchet wheels, and trip pins l, l^1, on the grip jaw shafts acting on the studs D, to give initial engaging or disengaging movements to the pawls, substantially as herein set forth. 16th. In a gill net puller, the combination with a main frame a, of a reciprocating carriage H thereon, net gripping jaws held to shafts A, A^1, journalled to the carriage, said shafts having trip pins l, l^1, a frame I, sliding in the carriage H, and geared with the grip jaws for opening and closing, a rack and pawl locking the frame I, when the jaws are closed on the net, springs normally sliding the frame one way to open the jaws when the frame locking pawl is tripped, independently rotating shafts H^3, H^4 on the carriage, provided respectively with fixed driving wheels H^1, H^2, and loose ratchet wheels H^5, H^6, and springs H^7, H^8, connected to the driving and ratchet wheels, a driving shaft G on the main frame, carrying sprocket wheels G^1, G^2, endless chains J, K, supported by idler and guide wheels on the main frame a, and carriage H, and running respectively by their lower sides under the wheel G^1, and over the wheel G^2, and running by their free upper sides over the wheels H^1, H^2, pawls J^1, K^1, fulcrumed to the carriage H, and adapted to receive initial movements from the grip jaw shaft, pins l, l^1, and springs on the pawls J^1, K^1, completing their reverse movements to the rachet wheels and to stops on the carriage, all arranged for operation, substantially as herein set forth. 17th. In a gill net puller, the pulling grip fitted to slide on the main frame and made with a carriage, grip jaws journalled thereon, a sliding frame in the carriage geared with grip jaws, springs normally shifting the sliding frame to open the jaws, a stop which said frame strikes to close the jaws, and mechanism reciprocating the carriage, substantially as herein set forth. 18th. In a gill net puller, the pulling grip fitted to slide on the main frame and made with a carriage, grip jaws journalled thereon, a sliding frame in the carriage geared with the grip jaws, springs normally shifting the sliding frame to open the jaws, a stop which said frame strikes to close the jaws, a rack and pawl locking the sliding frame when the jaws are closed on the net, and mechanism reciprocating the carriage, substantially as herein set forth. 19th. In a gill net puller, the pulling grip fitted to slide on the main frame and made with a carriage, grip jaws journalled thereon, a sliding frame in the carriage geared with the grip jaws to open and close them, a rack and pawl locking the sliding frame when the jaws are closed on the net, and springs normally sliding the frame to open the jaws when the locking pawl is tripped, substantially as herein set forth. 20th. In a gill net puller, the combination, with the main frame and the reciprocating pulling grip thereon, of shafts A^1, A^1, journalled to the carriage and having gripping jaws A, A, and gears A^2, A^2, a sliding frame I, fitted in the carriage and geared with the grip jaw shafts, a rack and pawl I^1, I^1, holding the frame I to lock the jaws closed on the net, and springs normally sliding the frame to open the jaws, substantially as herein set forth. 21st. In a gill net puller, the combination, with the main frame and the reciprocating pulling grip thereon, having jaws A, A, and a sliding frame I, fitted in the pulling grip carriage and geared with the jaws to open and close them, of a rack bar i^1, on the frame I, a pawl I^1 on the carriage locking the frame to hold the jaws closed, and tripping devices releasing the pawl I^1, as the pulling grip reaches the end of its forward stroke, substantially as herein set forth. 22nd. In a gill net puller, the combination, with the main frame and the reciprocating pulling grip thereon having jaws A, A, and a sliding frame I in the pulling grip carriage geared with the jaws to open and close them, of a rack bar i^1 on the frame I, a pawl I^1 on the carriage locking the frame to hold the jaws closed, a trip rod and lever I^2, I^3, on the carriage adapted to release the pawl I^1, a stop i^3 in the path of the lever I^3 at the limit of the forward stroke of the pulling grip, and springs normally sliding the frame I to open the jaws A, A, when the pawl is tripped, substantially as herein set forth. 23rd. In a gill net puller, the pulling grip fitted to slide on the main frame and made with a carriage, grip jaws journalled thereon, a sliding frame on the carriage geared with the grip jaws, springs normally shifting the sliding frame to open the jaws, a stop which said frame strikes to close the jaws, said jaws closing on the net at a forwardly converging angle, and mechanism reciprocating the carriage, substantially as herein set forth. 24th. In a gill net puller, the pulling grip fitted to slide on the main frame and made with a carriage, grip jaws journalled thereon, a sliding frame on the carriage geared with the grip jaws, springs normally shifting

the sliding frame to open the jaws, a stop which said frame strikes to close the jaws, said jaws closing on the net at a forwardly converging angle and provided with eccentric rollers which hold the net with a gradually tightening grip, and mechanism reciprocating the carriage, substantially as herein set forth. 25th, In a gill net puller, the combination, with the main frame of a holding grip thereon, consisting of a transverse frame, gripping jaws having shafts journalled in the latter frame, and closing at a rearwardly converging angle, a sliding frame fitted in the transverse frame, and geared with the grip jaws to open and close them, springs normally sliding the frame forward to open the jaws, a plunger sliding the frame rearward to closed the jaws, and a rock and pawl locking the sliding frame to hold the jaws closed on the net, substantially as herein set forth. 26th. In a gill net puller, the combination, with a main frame and a reciprocating pulling grip thereon having a pair of gripping jaws which close on the net at a forwardly converging angle, of a holding grip having a pair of gripping jaws which reach toward the pulling grip and close on the net at a rearwardly converging angle, and mechanism actuating the pulling and holding grip jaws, substantially as herein set forth. 27th. In a gill net puller provided with a reciprocating pulling grip, the net holding grip made with a transverse frame N, provided with net gripping jaws, a sliding frame O, fitted in the frame N and geared with the the grip jaws, a pawl N^1 on the frame N, a rack N^2 on the frame O, and mechanism, substantially as specified, for disengaging the pawl N^1 from the pulling grip to allow opening of the holding grip to release the net as the pulling grip starts forward with the net, substantially as herein set forth. 28th. In a gill net provided with a reciprocating pulling grip the net holding grip made with a transverse frame N, provided with gripping jaws, a sliding frame O in the frame N, geared with the grip jaws, a pawl N^1 on the frame N a rack N^2 on the frame O, a shaft p on the frame N, having a crank arm at the pawl, N^1, a bar P, hung to the main frame, connections, substantially as described, between the shaft p and bar P, whereby as the latter is moved endwise and inward the shaft p will disengage the pawl N^1 from the rack N^2, and a pawl on the pulling grip carriage engaging the bar P to trip the pawl N^1 as the pulling grip starts forward on its effective stroke, substantially as herein set forth. 29th. In a gill net puller provided with a reciprocating pulling grip the net holding grip made with a transverse frame N, provided with gripping jaws, a sliding frame O, fitted in the frame N, and geared with the grip jaws, a pawl N^1 on the frame N, a rack N^2 on the frame O, springs, O^1 on the parts N O, normally sliding the frame O to open the grip jaws, a shaft p on the frame N, having a crank arm at the pawl N^1, a bar P, hung to the main frame connections, substantially as described, between the shaft p, and bar P, whereby as the latter is moved endwise and inward, the shaft p, will disengage the pawl N^1, from the rack N^2, a pawl on the pulling grip carriage engaging the bar P, to trip the pawl N^1, as the pulling grip starts forward with the net, and a bar O^2, on the holding grip frame O, giving a reverse movement to the bar P, as the frame O opens the holding grip, substantially as herein set forth. 30th. In a gill net puller, the combination, with the main frame and a reciprocating pulling grip thereon, made with a carriage H, grip jaws thereon, and a sliding frame I, geared to open and close the jaws, of a holding grip made with a frame N, grip jaws thereon, and a sliding frame O, geared to open and close the holding grip jaws, of a pawl N^1, adapted to lock the holding grip jaws closed, a bar P, hung to the main frame, connections from said bar P, to the pawl N^1, for disengaging it, a pawl on the pulling grip carriage operating the bar P, to disengage the pawl N^1, and a bar O^2, on the frame O, restoring the bar to normal position at the completion of the rearward movement of the frame O, substantially as herein set forth. 31st. In a gill net puller, the net grips provided with eccentrically set gripping rollers held normally with their small radius presented to close on the net, and mechanism actuating the grip jaws, substantially as herein set forth. 32nd. In a gill net puller, the net grips provided with spring pressed arms or jaws yielding inward bodily to overcome outward resistance of the springs should excessive strains be brought on the jaws or net, and mechanism actuating the grip jaws, substantially as herein set forth. 33rd. In a gill net puller, the net grips provided with spring pressed gripping arms or jaws yielding inward bodily should excessive strains be brought on the jaws or net, said grip arms provided with eccentrically set gripping rollers held normally with their small radius presented to close on the net, and mechanism actuating the grip jaws, substantially as herein set forth. 34th. In a gill net puller, the net gripping jaws made with a shaft A^1, arms or plates A^3, A^3, thereon, an eccentrically set gripping roller A^6, journalled to the arms, and a spring held to one of said arms and to the roller, and normally holding the roller with its small radius prensented to close on the net, substantially as herein set forth. 35th. In a gill net puller, the net grips made with a shaft A^1, arms or plates A^3, A^3, held thereon, having back stops a^6, a resistance piece A^4, held to the plates A^3, a spring placed between the parts A^1, A^4, eccentrically set gripping rollers A^6, journalled to the arms A^3, and a spring held to one of said arms and to the roller, and normally holding the latter with its small radius presented to close on the net, substantially as herein set forth. 36th. In a gill net puller, the combination with a frame, a pulling grip thereon, and mechanism actuating said grip, of a reel conveying the net from the pulling grip and provided with yielding or spring-supported bars receiving the net, substantially as herein set forth. 37th. In a gill net puller, the combination with a frame and a reciprocating net pulling grip thereon, of a reel conveying the net from the grip, a ratchet chain wheel C^2 C^2 on the pulling grip carriage, a pawl C^4 on the carriage engaging the ratchet C^2, and a driving chain guided over wheels on the main frame and engaging the wheel C^2, substantially as described, whereby the reel will be operated only on the effective stroke of the pulling grip, as set forth. 38th. In gill net pulling apparatus, the combination with a frame or support of a net leading roller fulcrumed thereto for vertical oscillation, substantially as described, whereby the roller may be adjusted on its fulcrum to incline laterally to either side to control the lead of the net inboard, as set forth. 39th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard, and fitted with an operating lever, combined with a latch bar to which the lever is adapted, for holding the leading rollers inclined to starboard or port, substantially as herein set forth. 40th. In gill net pulling apparatus, the outside net leading roller made with upturned end, and comprising a central shaft or support, sleeves fitted for rotation on said shaft, and an outer covering for the sleeves, substantially as herein set forth. 41st. In gill net pulling apparatus, the outside net leading roller made with a central shaft or support, a wire incasement thereon, and a covering for said incasement, substantially as herein set forth. 42nd. In gill net pulling apparatus, the outside net leading roller made with a central shaft or support having upturned ends, sleeves fitted to said shaft, a wire incasement placed on the sleeves, and a covering for said incasement, substantially as herein set forth. 43rd. In gill net pulling apparatus, the outside net leading roller made with a central shaft or support having upturned ends, three sleeves fitted to said shaft and geared together for simultaneous rotation, and a covering for the sleeves, substantially as herein set forth. 44th. In gill net pulling apparatus, the outside net leading roller made with a central shaft or support having upturned ends, three sleeves fitted to said shaft and geared together for simultaneous rotation, a wire incasement on the sleeves, and a covering for said incasement, substantially as herein set forth. 45th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard and made with a central shaft or support having upturned ends, sleeves fitted on said shaft, and an outer covering for the sleeves, substantially as herein set forth. 46th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard and made with a central shaft or support having upturned ends, a wire incasement placed thereon, and a covering for said incasement placed thereon, and a covering for said incasement, substantially as herein set forth. 47th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard and made with a central shaft or support having upturned ends, sleeves fitted to said shafts, a wire incasement place around the sleeves, and a covering for the incasement, substantially as herein set forth. 48th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard and made with a central shaft or support having upturned ends, sleeves on said shaft geared together for simultaneous rotation and a covering placed around said sleeves, substantially as herein set forth. 49th. In gill net pulling apparatus, the outside net leading roller hung for lateral oscillation to control the lead of the net inboard and made with a central shaft or support having upturned ends, sleeves on said shaft geared together for simultaneous rotation, a wire incasement around the sleeves, and a covering on said incasement, substantially as herein set forth. 50th. In gill net pulling apparatus, the net leading roller journalled in yielding or spring supported bearings, a scale on the roller frame, and a pointer on the roller bearings, combined to indicate at the scale the pulling strain on the net, substantially as herein set forth. 51st. In gill net pulling apparatus, the combination, with a net pulling grip and a net leading roller fulcrumed for vertical oscillation, of a roller having upturned ends and interposed between the leading roller and pulling grip, substantially as described, whereby the net will be guided from the leading roller to the pulling grip, as set forth. 52nd. In gill net pulling apparatus, comprising a net pulling grip and an outside leading roller, a net guiding roller interposed between the leading roller and pulling grip, and having upturned ends and made with a central shaft or support, sleeves fitted thereon, and an outer covering for the sleeves, substantially as herein set forth. 53rd. In gill net pulling apparatus, comprising a net pulling grip and an outside leading roller, a net guiding roller interposed between the leading roller and pulling grip, and having upturned ends and made with a central shaft or support, a wire encasement around it, a covering for said incasement, substantially as herein set forth. 54th. In gill net pulling apparatus, comprising a net pulling grip and an outside leading roller, a net guiding roller interposed between the leading roller and the pulling grip, and having upturned ends and made with a central shaft or support, sleeves fitted thereon and geared together for simultaneous rotation, and an outer covering for the sleeves, substantially as herein set forth. 55th. In gill net pulling apparatus, comprising a net pulling grip and an outside leading roller, a net guiding roller interposed between the leading roller and pulling grip and having upturned ends made with a central shaft, or support, sleeves fitted thereon and geared together for simultaneous rotation, a wire encasement on the sleeves, an an outer covering for the sleeves, substantially as herein set forth. 56th. In

a gill net puller, the combination, with a main frame and a reciprocating pulling grip thereon made with net gripping devices, and a sliding frame or bar geared therewith for opening and closing them, of a cut off placed on the main frame behind the pulling grip, and adjustable toward or from it to control the time of contact of the pulling grip frame with it and the consequent closing of the grip devices on the net, and mechanism for actuating the same, substantially as herein set forth. 57th. In a gill net puller the combination with a main frame, and a reciprocating pulling grip thereon, made with net gripping devices, and a sliding frame or bar geared therewith for opening and closing them, of a cut off consisting of a transverse frame or bar held adjustably to the main frame in the path of the pulling grip sliding frame, pawls on the cut off, racks on the main frame to which the pawls are adapted, a disengaging device for the pawls, and mechanism for actuating the same, substantially as herein set forth. 58th. In a gill net puller, the combination with a main frame, and a reciprocating pulling grip thereon having net gripping devices, and a sliding frame geared therewith for opening and closing them, and mechanism for actuating the same, of a cut off comprising a frame S, adjustable on the main frame, pawls U, on the frame S, racks V, on the main frame, a shaft T, having arms *t*, next the pawls, and a lever W, linked to the shaft T, for operating, substantially as herein set forth. 59th. In a gill net puller, the combination with a main frame and a reciprocating pulling grip thereon, made with net gripping devices, and a sliding frame geared therewith for opening and closing them, and mechanism for actuating the same, of a cut off placed on the main frame behind the pulling grip and adjustable toward or from it to control the time of closing of the pulling grip jaws on the net, and a roller placed on the adjustable cut off and guiding the net to the pulling grip, substantially as herein set forth.

No. 41,329. State Room for Sleeping Cars, Ships and Boats. (*Salon pour chars dortoir, vaisseaux et bateaux.*)

Charles Levake Lockwood, Arlington, Ohio, U.S.A., 20th December, 1892; 6 years.

Claim.—A state room for railway cars, ships, boats and other structures, having stepped or double right angled partition therein, whereby it is divided into two separate and independent apartments, the upper angle of said partition forming an upper reclining receptacle or double berth opening into one apartment, and the lower angle forming a lower receptacle or double berth, directly beneath said upper berth and opening into the other apartment, and each apartment having its own independent doorway. 2nd. A state room composed of two sides and two end walls, having a central zig-zag partition extending from one end wall to the other, and composed of an upper vertical division D, a middle horizontal division D^1, and a lower vertical division D^2, whereby it is divided into two independent private appartments; one having an upper berth and the other a lower berth, and each entered by independent doorways in said walls. 3rd. A state room for railway cars, ships, boats and other structures, having a stepped or double right angled partition therein, whereby it is divided into two separate apartments, the upper angle forming an upper receptacle or berth, which opens into one apartment only, and the lower angle forming a lower receptacle or berth which opens into the other apartment only, the lower end of said partition resting on a base E, the latter forming the bottom of said lower berth, and each apartment having its own independent doorway, substantially as herein set forth. 4th. A section or state room for rail cars, ships, boats and other structures, having a stepped double right angled partition therein, whereby it is divided into two separate and independent apartments, said partition being composed of three separate, movable leaves or divisions D, D^1, and D^2, the division D, being always a vertical one and hinged or otherwise freely jointed to the division D^1, the division D^1, being adapted to be disposed either horizonal or vertical, and the division D^2, being also adapted to be disposed either vertical or horizontal, all the parts being arranged, constructed and adapted to be operated, substantially as and for the purpose specified. 5th. A series of sections or state rooms for cars, ships and other structures, composed of stepped or double right angled partitions D, D^1, D^2, therein, whereby they are each divided into two separate apartments, longitudinal partition B, having doorways G, and one side wall of the car or other structure, and transverse partitions C, dividing adjoining sections and having doorways C^1, substantially as herein set forth.

No. 41,330. Portable Stove. (*Poêle portatif.*)

Ferdinand Turton Schneider, Washington, District of Columbia, U.S.A., 20th December, 1892; 6 years.

Claim.—1st. A stove comprising a top, legs hinged thereto, and sides detachably secured to said legs, substantially as described. 2nd. A stove comprising a top, legs hinged thereto, and sides provided with eye brackets fitting upon the legs, substantially as described. 3rd. In a stove, and in combination, a top provided with eye brackets arranged in sets and rods passing through the eye brackets, said rods being bent to form legs for the stove, substantially as described. 4th. In a stove, and in combination, a top provided upon its under side with eye brackets arranged in sets, rods passing through said sets of eye brackets and bent to form legs for the stove, and detachable sides, also provided with eye brackets adapted to fit upon the legs, substantially as described. 5th. In combination with a stove, a detachable stove pipe consisting of an upper and a lower part, each of which is formed of plates of varying lengths, the plates of each part being hinged together, the longest plate of each part being hinged together end to end, substantially as described.

No. 41,331. Pan for Boiling Vegetables.
(*Chaudière pour bouillir les légumes.*)

William Wyndham, Hamilton, Ontario, Canada, 20th December, 1892; 6 years.

Claim.—The combination of the outer boiling pan or vessel A, and the inner vegetable pan B, having a series of pointed feet H, and a series of perforations C, and the upper part thereof enlarged in diameter as at B^1, to form an enlarged opening for its cover D, and the outer annular projecting flange G, substantially as and for the purpose hereinbefore set forth.

No. 41,332. Gas Burner. (*Bec à gaz.*)

Cyrus S. Dean, Fort Erie, Ontario, Canada, and Charles O. Rano, Buffalo, New York, U.S.A., 20th December, 1892; 6 years

Claim.—1st. A gas burner having its cap plate provided on its inner face with an inverted cone and with an annular rib concentric with the said cone, the sides of the said cone and rib curving symmetrically to form the annular chamber L, and having the annular space *r* exterior to the said annular rib and within the gas exit, substantially as described for the purpose specified. 2nd. A gas burner having a imperforate cap plate provided on its inner face with a centrally disposed inverted cone, and with a concentric annular rib which curve symmetrically to form the annular chamber L, substantially as and for the purpose described. 3rd. The combination with a gas burner having a lateral discharge for the gas, of a ring encircling the said burner, and means for moving the said ring vertically to deflect the flame more or less from the horizontal, substantially as described. 4th. The combination with a gas burner having a lateral discharge for the gas, of an annular ring surrounding the burner, and mutually coacting pins and cams to effect a vertical adjustment of the said ring to deflect the flame more or less from the horizontal, substantially as and for the purpose described. 5th. The combination with a gas burner having a lateral discharge for the gas, and having a bowl portion, and having projections M and pins *m*, of a flame deflecting ring encircling the burner and guided in its vertical movements by the said projections M, and having cam portions to engage with and ride upon the said pins, and having stops at the ends of the said cam portions to engage with the said pins and limit the movements of the ring in each direction, substantially as set forth. 6th. The combination with a gas burner having an inverted cone depending from its cap plate, and a tube B of uniform diameter having its upper end contracted and provided with an opening of less diameter than the bore of the said tube and communicating with the gas burner directly opposite the apex of the said inverted cone, and gas pipe of less diameter than the bore of the said tube and inserted within the same to a proper distance, substantially as and for the purpose specified.

No. 41,333. Leather Skiving Machine.
(*Machine à refendre les cuires.*)

Napoleon Dufresne and Robert White, of Montreal, Quebec, Canada, 20th December, 1892; 6 years.

Claim.—1st. In a leather skiving machine, having feeding, cutting and grinding devices and shaft and gear mechanism for operating the feeding devices, a separate and independent counter shaft interposed between the initial source of power and said shaft and gear mechanism, and independent connections between said counter shaft and, respectively, the feed operating mechanism and the cutting and grinding devices, for the purposes set forth. 2nd. In a leather skiving machine, having feeding, cutting and grinding devices, and shaft and gear mechanism for operating the feeding devices, a separate and independent counter shaft interposed between the initial source of power and said shaft and gear mechanism, and independent variable connections between said counter shaft and, respectively, the feed operating mechanism and the cutting and grinding devices, for the purpose set forth. 3rd. In a leather skiving machine, having feeding, cutting and grinding devices, and shaft and gear mechanism for operating the feeding devices, a separate and independent counter shaft interposed between the initial source of power and said shaft and gear mechanism, variable permanent connections between said counter shaft and, respectively, the feed operating mechanism and the cutting device, and a further connection between said shaft and the grinding device, detachably connected with the variable permanent connection between said shaft and the cutting device, as set forth. 4th. In a leather skiving machine, the combination, with the cutting device (and its operating mechanism) the circular knife of which is subject to gradual diminishment in diameter and variations in the angle of its cutting edge by sharpening, of a grinding device adapted by change of position to follow such diminishment and be applied to said knife at varying angles, (and means for operating said grinding device). 5th. In a leather skiving machine, the combination, with the cutting device, (and its operating mechanism) the circular knife of which is subject to gradual diminishment, in diameter and variations in the angle of its cutting edge by sharpening, of a grinding device adjustable

laterally to follow such diminishment, and be applied to said knife at varying angles, and means for operating said grinding device. 6th. In a leather skiving machine, the adjustable grinder holding attachment, in the form of an arm composed of two or more parts, each capable of more or less independent play in varying directions and adjustably connected together, and means for rigidly setting said parts when adjusted, for the purpose set forth. 7th. In a leather skiving machine, the adjustable grinder holding attachment, comprising a pivoted lever portion capable of a horizontal adjustment and a bearing plate portion carrying the grinder shaft and attached to said lever portion so as to be capable of a vertical adjustment, and means for effecting a rigid setting of the parts, as set forth. 8th. In a leather skiving machine, a clearance device in the form of a guide plate or barrier projecting outward from the collar or bearing immediately above the cutter, and being flush with the upper surface thereof, as and for the purpose set forth. 9th. In a leather skiving machine, a protecting device consisting of a curved guide plate held adjacent to the edge of the cutter, and projecting in a downward direction below same, as and for the purpose set forth. 10th. In a leather skiving machine, a protecting device consisting of an adjustable curved guide plate held adjacent to the edge of the cutter and means for effecting the adjustment thereof, as and for the purposes set forth.

No. 41,334. Refrigerator and Elevating Cupboard.
(Garde-manger et élévateur.)

John Thomas Westwood and David Henry Taylor, both of Wheeling, Ohio, State of West Virginia, U.S.A., 20th December, 1892; 6 years.

Claim.—1st. A refrigerator elevator comprising a fixed floor, provided with a well or guideway, an elevating cupboard having a closed top, adapted to form a continuation of said fixed floor, and a horizontal adjustable guide arm beneath the floor, combined with the vertical fixed guide rod, the elevating ropes, pulleys and weights, and means for holding the cupboard down to close the floor guideway, as shown and described. 2nd. A refrigerator elevator comprising a fixed floor provided with the well or guide way, an elevating cupboard having a closed top, a removable open bottom frame for holding depending receptacles, and a guide arm, the guide rod provided with the upper and lower springs, the lower fixed stop, the elevating ropes and weights, and the fixed tank containing a cooling liquid, and adapted to receive the depending receptacles when the cupboard is lowered, at which time the closed top is flush with and forms a continuation of the the fixed floor, substantially as described. 3rd. In a refrigerator elevator wherein a cupboard has a closed top which, when in its normal position, is flush with and forms a continuation of a fixed floor having a well or guide way, the removable open bottom frame seated in the open bottom of said cupboard for holding depending receptacles, the guide arm and the cushions on the walls of the lower part of the cupboard, the guide rod for said arm having the upper and the lower springs, the elevating ropes and weights, the fixed tank for containing a cooling liquid, and the fixed stop below said floor, the said top and bottom rod spring being arranged in relation to the cupboard wall cushions so as to act upon the said rod guide arm in advance of the cushions on the ascent of the refrigerator and in advance of the contact of the latter with the bottom stop *j*, on the descent of the refrigerator to immerse the depending receptacles in said cooling tank, substantially as described. 4th. The combination, in an elevating cupboard adapted to be moved up and down in a guide way formed by the flooring, of metal cans or receptacles supported below the bottom thereof, a tank for containing a cooling liquid placed in fixed relation to the limit of the descent of the cupboard, a guide rod and arm for connecting said cupboard and the suspending and elevating ropes and weights, substantially as described. 5th. In a refrigerator elevator wherein a cupboard has a closed top which, when in its normal position, is flush with and forms a continuation of a fixed flooring having a well or guide way, a removable bottom board having openings for the reception of cans depending within said openings by flanges, combined with a tank for containing a refrigerating liquid, having a fixed relation to the limit of the descent of the cupboard, for the purpose stated.

No. 41,335. Bridle Bit. (*Mors de bride.*)

Neil Stalker, Hartford, Connecticut, U.S.A, 20th December, 1892; 6 years.

Claim.—1st. A bridle bit consisting of a tanned leather mouth piece with integral cheek pieces, and a flexible medicated rawhide core doubled upon itself and held in the mouthpiece with rein rings at the ends, substantially as specified. 2nd. A bridle consisting of a tanned leather mouthpiece with integral cheek pieces, and a flexible medicated rawhide core doubled upon itself, and its ends joined at the middle by a tongue and slot connection held in the mouthpiece with rein rings at the ends, subtantially as spicified.

No. 41,336. Horse Attaching and Detaching Device.
(Attelage et dételage instantané.)

Charles Edward Harris, Brandon, Manitoba, Canada, 20th December, 1892; 6 years.

Claim. 1st. In a device of the class described, the combination with a harness provided with a harness saddle and breast collar, of a lever pivoted on the said breast collar, traces connected with the said lever, a casing supported from the said harness saddle and connected with the said traces, and a locking device for fastening the said casings to the shafts or poles, said locking device comprising the longitudinally extending latches on the under side of the shafts having notches in the upper edges of their formed ends to receive portions of the casings, and tripping levers engaging the rear ends of the latches, substantially as shown and described. 2nd. A device of the class described, provided with a casing supported from the harness saddle and formed with a metallic plate having eyes at its ends, one for attachment to the traces and the other for attachment to the breeching, the said metallic plate being provided with a transverse extension passing through the casing to form a compartment for the shaft or pole, and one for a locking device to fasten the casing to the shaft or pole, substantially as shown and described. 3rd. In a horse detacher, the combination with the longitudinally extending latch K, provided in the upper edge of its forward end with a notch K^2, and a spring pressing the notched edge upwardly, of the tripping lever engaging the rear end of the latch to be operated by the driver of the vehicle, substantially as set forth. 4th. The combination with the longitudinally extending latches on the lower sides of the thills having the upper edges of their forward ends provided with notches, and a spring pressing said notched end upwardly, of the tripping levers engaging the rear ends of the latches, the shaft U^1 on the cross bar of the thills, and provided with an operating arm or lever, provided with means for operating it from the vehicle and connections between the shaft U^1 and the tripping levers. 5th. The combination in a horse detacher with the latches and their tripping levers, of the shaft U^1, having an apertured head U on its lower end and an operating arm or lever V on its upper end, the cord or rope T extending through the said apertured head, the levers R R, and connections between said cord and levers, and between the tripping lever and the said levers R, substantially as set forth. 6th. The combination with the harness having casings connected with the harness saddle to receive the shafts and having a cross bar E^2, of the casings J secured along the lower sides of the shafts, and having longitudinally extending spring-pressed latches K, provided with notches K^2, to engage the said cross bars E^2, the tripping levers N, engaging the rear ends of the latches, of the levers R R, connections O P, between the levers R N, the shaft U^1 having an apertured head U and operating arm or lever, the rope or cord T extending through the head U and rods S connecting the cord or rope with levers R, substantially as set forth.

No. 41,337. Window Seat. (*Siège de fenêtre.*)

William Engler, Brooklyn, New York, U.S.A., 20th December, 1892; 6 years.

Claim.—1st. In a window seat, the combination of the board A, the folding board B, hinged to the board A, and arranged to open out at right angles to and shoulder against said board A, and the angled rods *b* attached to the edge of the board A and extending parallel with the board A, and the support D, adjustable on the rods *b*, and adapted to rest upon the window sill, substantially as specified. 2nd. In a window seat, the combination of the base board A, the folding board B, hinged to the board A, and arranged to open out at right angles to and shoulder against the base board, the angled rods *b*, attached to the edge of the base board and extending underneath and parallel to the said base board, the adjustable support D, placed on the rods *b*, and adjustable along the length of the said rods, and spurs *c*, projecting from the adjustable support D, and adapted to enter into and engage the under surface of the board A, substantially as specified. 3rd. In a window seat, the combination of the board A, the board B, hinged to the board A, and arranged to open out at right angles to the said board A, the yielding strips *d*, attached to the boards A, B, the right angled rods *b*, attached to the edge of the board A, and extending parallel with its under surface, and the adjustable support D, placed on the rods *b*, and provided with a yielding covering on its lower edge, substantially as specified.

No. 41,338. Vehicle Running Gear. (*Train de voiture.*)

Edward Storm, Poughkeepsie, New York, 20th December, 1892; 6 years.

Claim.—In a vehicle running gear, the combination with a lowered or cranked axle, of the end spring having inwardly turned ends to which the side bars are secured, the head block, the bearing plate and the fifth wheel to which said spring is connected at points midway between the king bolt and the side bars, substantially as set forth.

No. 41,339. Stretcher and Fastener for Wire. (*Tendeur et attache pour le fil de fer.*)

George Chamberlain, Milburn, Texas, U.S.A., 22nd December, 1892; 6 years.

Claim. The combination of a bar constructed of metal and provided at one end with a claw and having its other end bent at right angles to form an arm provided with a slot or bifurcation forming prongs, one of the prongs being longer than the other, a stud secured to the bar on the side opposite the arm arranged adjacent to the same and forming a hammer head, and a handle arranged on the same side of the stud and located adjacent to the claw, substantially as described.

No. 41,340. Section for Logging Booms. (*Estacade flottante pour billots.*)

Richard G. Peters, Manistee, Michigan, U.S.A., 20th December, 1892; 6 years.

Claim.—1st. The combination in the boom sections of the timbers 7, 8, 9 and 10 securely fastened together with the pickets, small timbers or heavy planking 12 securely fastened to the timber 10, substantially as and for the purpose set forth. 2nd. The combination in a boom section of the "raft" portion with the vertical fence portion projecting above and below the surface of the water when said boom section is in the water, substantially as and for the purpose set forth. 3rd. The combination in a boom section of the timbers 7 and 10, separated by the timbers 8 and 9 and the blocks 20, 20^1 and 20; and all securely fastened together, the cedar timber 21, with the vertical "fence portion" formed by the pickets or small timbers 12, substantially as and for the purpose set forth.

No. 41,341. Sleigh. (*Traineau.*)

Mederic Desantels *dit* Lapointe, Sturgeon Falls, 20th December, 1892; 6 years.

Claim. 1st. A sleigh having journalled at its rear a rank shaft adapted to be operated by steam or other power, cranks on said shaft to which are attached pushing beams having feet at their free ends, means for raising the free ends on the return stick, substantially as seth forth. 2nd. A sleigh adapted to be propelled by steam or other power, the combination with the rearwardly projecting beams B B, B^1 B^1, of the crank shaft C, having cranks *c*, D, arms E having feet *e*, the rocking beams F journalled in a suitable frame, chains *f* f^1 and guides H, and means for guiding the said sleigh, substantially as set forth.

No. 41,342. Hose Coupler. (*Joint de boyau.*)

The Consolidated Car Heating Company, assignee of James Finney McElroy, all of Albany, New York, U.S.A., 20th December, 1892; 6 years.

Claim.—1st. A two-part hose coupling comprised of two like halves or portions, each half consisting of a body portion having a suitable passage therethrough, a locking wing, a projecting flange near the end of said locking wing, a cam lug with which the projecting flange on the locking wing engages to make the coupling, and a projection with which the locking wing comes into contact, preventing the rotation of the coupler heads, substantially as described, and for the purpose set forth. 2nd. A two-part hose coupling comprised of two like halves or portions, each half consisting of a body portion having a suitable passage therethrough, a locking wing, a projecting flange near the end of said locking wing, a cam lug with which the projecting flange on the locking wing engages to make the coupling, said locking wing coming into contact with the locking wing on the adjoining coupler head when the coupling is made, substantially as described, and for the purpose set forth. 3rd. A two-part hose coupling composed of two like halves or portions, each half consisting of a body portion having a suitable passage therethrough, a coupler head provided with a female screw, gasket screwed into said coupler head and extending into the internal chamber of the coupler, a threaded ring in contact with said gasket in the internal chamber, a locking wing, a cam lug with which the locking wing engages, projections for the purpose of retarding the rotation of the coupler head, substantially as described and for the purpose set forth.

No. 41,343. Brake for Railway Cars.
(*Frein pour chars de chemin de fer.*)

The Loughridge Brake and Car Company, Camden, New Jersey, assignee of Jacob Eavny Loughbridge, Philadelphia, Pennsylvania, all in the U. S. A., 20th December, 1892; 6 years.

Claim. 1st. The within described device for compensating for ware or looseness of parts of car brake mechanism, said compensating device comprising elements with undercut engaging portion or lost motion connections whereby after each successive advance or movement of compensation there will be a slight backing off to prevent the locking of the brake shoes against the wheels, substantially as specified. 2nd. The combination of the dead lever of railway car brake mechanism with an engaging rack and pawl for retaining the fulcrum end of said lever in its successive positions of advancement, one or both of said engaging portions having undercut teeth or the portion which is hung to the dead lever having a slotted connection therewith, substantially as specified. 3rd. The combination of the dead lever of railway car brake mechanism, an operating rod extending towards the end of the car, and serving as a means of adjusting said lever to take up slack, and a rack and pawl compensating device for retaining the lever in its successive portions of advancement, one of the elements of said device being hung to the lever, substantially as specified. 4th. The combination of the dead lever of a railway car brake mechanism, a rack and pawl compensating device for retaining said dead lever in its successive positions of advancement, one element of said device being hung to the dead lever, and a momentum weight serving to aid the take up movements of the lever, and to prevent rapid reversing of the same, substantially as specified. 5th. The combination of the dead lever of railway car brake mechanism, an operating rod extending towards the end of the car, and serving as a means of adjusting said lever to take up slack, a weight mounted upon said rod, and rack and pawl compensating device for retaining the lever in its successive positions of advancement, one of the elements of said device being hung to the lever, substantially as specified. 6th. The combination of the dead lever of railway car broke mechanism, a rack and pawl compensating device for retaining said dead lever in its successive positions of advancement, one element of said device being hung to the dead lever by a slotted connection, and an operating rod connected to the dead lever independently of said element of the compensating device, substantially as specified. 7th. The combination of the dead lever of railway car brake mechanism, a rack and pawl compensating device for retaining said dead lever in its successive positions of advancement, one of the elements of said device being hung to the dead lever by a slotted connection, and an operating rod connected to the dead lever independently of said element of the compensating device, said rod having a weight mounted upon it, substantially as specified. 8th. The combination of the dead lever of railway car brake mechanism, a rack hung to the free end of said dead lever and a guide for said lever, said guide having at its outer end a pawl tooth for engaging with the teeth of the rack, substantially as specified. 9th. The combination of the dead lever of railway car brake mechanism, a rack hung to the lever, and a guide for said lever having at its outer end a pawl tooth for engaging with the teeth of the rack and a yoke carrying a spring which presses upon the rack and holds it in engagement with the pawl tooth, substantially as specified.

No. 41,344. Car Coupler. (*Attelage de chars.*)

Benjamin Meyer, Gordon Grove, and Walter Henry Mitchell, Meredith, all in Victoria, Australia, 20th December, 1892; 6 years.

Claim. 1st. In couplings for railway carriages, cars or trucks, the combination with the draw hook or draw bar or draw head thereof of a transverse bar, supported mainly from such draw hook, bar or head, and carrying a coupling hook that is capable of being raised or lowered by the movement of a hand lever at side of car, substantially as herein described and explained and as illustrated in our drawings. 2nd. In couplings for railway carriages, cars or trucks, the combination with the draw hook or draw bar or draw head thereof of a transverse bar D, eye and hook bolts E, and E^1, coupling hook F, lifting arm G, with its cross bolts G^1 and G^2, the shaft H, and operating handles H^4, substantially as herein described and explained, and as illustrated in figures 1 to 4 of our drawings. 3rd. In couplings for railway carriages, cars or trucks, the combination with the draw bar or draw head thereof of a cranked transverse bar D, having a hole at its centre to receive said draw bar, coupling hook F, eye, bolts E, and the gear for lifting the coupling hook, substantially as herein described and explained and as illustrated in figures 6, 7 and 8 of our drawings. 4th. In couplings for railway carriages, cars or trucks, the combination with the transverse draw bar D, of the inclined slide or apron J, supported and arranged substantially as herein described and explained and as illustrated in figs. 1 and 2 of our drawings. 5th. In car couplings for railway carriages, cars or trucks, the combination of the operating shaft H, having lifting arm G, and the tongue piece H^2, attached, with the stepped lock piece H^3, constructed and arranged substantially as herein described and explained, and as illustrated in figs. 1, 2, 5, 6 and 7 of our drawings.

No. 41,345. Trap for Animals. (*Piège.*)

George Andrews, Jessamine Villa, Hunter's Road, Willesborough, Ashford, Kent, England, 21st December, 1892; 6 years.

Claim. 1st. In an animal or bird trap, the combination of the box channel, and platform having a trap door frame springs and spikes, with the crank end on a lever, and loose catch pivoted to a support with a slot to receive the catch pin, and flaps hinged to the box, to kill an animal or bird instantaneously, substantially as shown for the purpose specified. 2nd. In an animal or bird trap, the combination of the channel and platform constructed in a box with a trap door on a lever. The loop or frame having a net operated by a spring or springs with a crank end to the lever, to hold the catch down on to the catch pin in the slot cut in the support, and the flaps hinged to the box, to catch an animal or bird alive, substantially as herein described and according to the accompanying drawing.

No. 41,346. Drier for Lumber. (*Etuve à bois.*)

La Fayette Clay Van Duzer, Van Duzer, Arkansas, U.S.A., 21st December, 1892; 6 years.

Claim.—1st. In a lumber drier, the combination with a drying house, of a hot air furnace arranged outside the said drying house, and provided with a hot air flue extending into the said drying house at its bottom and provided with outlet openings, substantially as shown and described. 2nd. In a lumber drier, the combination with a drying house, of a hot air furnace arranged outside the said drying house, and provided with a hot air flue extending into the said drying house at its bottom and provided with outlet openings, and stacks arranged in the said drying house and provided with valves or doors for the escape of the air, substantially as shown and described. 3rd. In a lumber drier, the combination with a drying house, of a hot air furnace arranged outside the said drying house

and comprising one or more fire boxes, an air heating space surrounding the said fire box, and a hot air flue leading from the said hot air space into the said drying house, the said hot air flues being provided with outlet openings, substantially as shown and described. 4th. In a lumber drier, the combination, with a drying house, of a hot air furnace arranged outside the said drying house, and comprising one or more fire boxes, an air heating space surrounding the said fire boxes, a hot air flue leading from the said hot air space into the said drying house, the said hot air flue being provided with outlet openings, and a smoke flue leading from the said fire boxes and passing through the said hot air flue, substantially as shown and described. 5th. In a lumber drier, the combination, with a drying house, of a hot air furnace arranged outside the said drying house and comprising one or more fire boxes, an air heating space surrounding the said fire boxes, a hot air flue leading from the said hot air space into the said drying house, the said hot air flue being provided with outlet openings and deflectors, a smoke flue leading from the said fire boxes, and passing through the said hot air flue, and a chamber arranged in the said drying house, and into which opens the said smoke flue, thereby making an air lumber dry house, substantially as shown and described. 6th. In a lumber drier, the combination, with a drying house, of a hot air flue having outlet openings for discharging the hot air into the said drying house, and a series of flues arranged in the said drying house at the ceiling, sides and bottom, the upper ends of the said flues opening into the drying house, and the lower ends into the said hot air flue, forming a series of air condensors, substantially as shown and described. 7th. In a lumber drier, the combination, with a drying house, of a smoke flue extending into the said drying house, two chambers arranged in the said drying house, and into one of which opens the said smoke flue, a series of pipes leading from the rear chamber into the front chamber, and outlet pipes leading from the front chamber into the stacks of the drying house, substantially as shown and described. 8th. In a lumber drier, the combination, with a drying house, of a smoke flue extending into the said drying house, a front and rear chamber arranged in the said drying house, and into the latter of which opens the said smoke flue pipes for connecting the said chambers with each other, a series of said pipes leading from the front chamber, and stacks arranged in the said drying house and into which open the said last named pipes, and thereby forming a combined hot air and smoke and air lumber dry house, substantially as shown and described. 9th. In a lumber drier, the combination, with a drying house, of a smoke flue extending into the said drying house, a front rear end chamber arranged in the said drying house, and into the latter of which opens the said smoke flue, pipes for connecting the two chambers with each other, and valves arranged in the front chamber and adapted to open into the said drying house to permit the smoke to escape into the latter, substantially as shown and described. 10th. In a lumber drier, the combination, with fixed guide ways of a door provided with roller travelling on the said guideways, a rope for suspending the said door and adapted to pass over pulleys, and a windless for manipulating the said rope to raise or lower the said door, substantially as shown and described.

No. 41,347. Feed Water Heater and Purifier.

(Réchauffeur et épurateur de l'eau.)

Vigil Harvey McConnell, Buffalo, New York, U.S.A., 21st December, 1892; 6 years.

Claim.—1st. The combination with a steam boiler of a closed feed water heater, a steam supply pipe connected with said heater, a spray device arranged in said heater and connected with the feed water pipe, whereby the feed water is delivered into the heater in fine streams, a feed water delivery pipe extending from said heater to the lower portion of the boiler, and provided near its lower end with a discharge opening, whereby the feed water is delivered into the lower portion of the boiler, and a blow-off valve arranged in said delivery pipe outside of the boiler, substantially as set forth. 2nd. The combination with a steam boiler, of a feed water heater arranged in the boiler and communicating with the steam space of the boiler, whereby the water in said heater is heated by the steam entering the same, a spray device arranged in said heater whereby the feed water is delivered into the heater in a finely divided state, and a delivery pipe connected with said water heater and terminating in the lower portion of the boiler, substantially as set forth. 3rd. The combination, with a steam boiler, of a feed water heater arranged in the boiler, and communicating with the steam pipe of the boiler, whereby the water in said heater is heated by the steam entering the same, a spray device arranged in said heater, whereby the feed water is delivered into the heater in a finely divided state, a feed water delivery pipe connected with the heater, extending through the lower portion of the boiler, and provided within the boiler with a discharge orifice for the feed water, and a blow-off valve arranged in said delivery pipe beyond said discharge orifice, and on the outside of the boiler, substantially as set forth. 4th. The combination, with a boiler having a water leg provided with a sloping bottom, of a water heater arranged in the steam space of the boiler, and communicating with the steam space, a spray pipe arranged in the heater whereby the feed water is delivered into the heater in fine streams, a delivery pipe connected with said water heater and provided with a perforated horizontal branch arranged in the water leg at the foot of its inclined bottom and extending through the shell of the boiler, and a blow-off valve arranged in said branch outside of the boiler, substantially as set forth.

No. 41,348. Feed Water Heater and Purifier.

(Réchauffeur et épurateur de l'eau.)

Vigil Harvey McConnell, Buffalo, New York, U.S.A., 21st December, 1892; 6 years.

Claim.—1st. The combination, with a steam boiler having a smoke box, of a water heating chamber arranged in the steam space of the boiler and communicating with the steam space, a settling chamber arranged in the smoke box and receiving the hot water from said heating chamber, and a pipe whereby the purified water is conducted from the settling chamber to the boiler, substantially as set forth. 2nd. The combination, with a steam boiler having a smoke box, of a feed water heater, whereby the water is heated to liberate the solid impurities contained in the water, a settling chamber arranged in the smoke box connected with said water heater, and provided with a blow-off cock, and a delivery pipe whereby the purified water is conducted from the settling chamber to the boiler, substantially as set forth. 3rd. The combination, with a steam boiler having a smoke box, of a vertical settling chamber arranged in the smoke box, and consisting of a hollow base provided with a descending inlet pipe and an ascending discharge pipe, a feed pipe connected with the descending inlet of the settling chamber, and a delivery pipe leading from the ascending outlet thereof to the boiler, substantially as set forth. 4th. The combination with a steam boiler having a smoke box, of a vertical settling chamber arranged in the smoke box, and consisting of a hollow base provided with a descending inlet, an ascending discharge pipe, and a strainer arranged in the hollow base which intercepts the solid impurities in the water, a feed pipe connected with the descending inlet of the settling chamber, and a delivery pipe leading from the ascending outlet of the boiler, substantially as set forth. 5th. The combination, with a steam boiler having a smoke box, of a vertical settling chamber arranged in the smoke box, and consisting of a hollow base provided with a descending inlet pipe, an ascending discharge pipe, and at its bottom with a blow-off cock, a feed pipe connected with the descending inlet of the settling chamber, and a delivery pipe leading from the ascending outlet thereof to the boiler, substantially as set forth. 6th. The combination, with a steam boiler having a smoke box, of a vertical settling chamber arranged in the smoke box, and consisting of a hollow base provided with a descending inlet pipe, an ascending discharge pipe, and a horizontal pipe connecting the upper portions of the descending and ascending pipes, a feed pipe connected with the descending inlet of the settling chamber, and a delivery pipe leading from the ascending outlet thereof to the boiler, substantially as set forth. 7th. The combination, with a steam boiler having a smoke box, of a vertical settling chamber arranged in the smoke box, and consisting of a hollow base provided with a descending inlet pipe, an ascending discharge pipe, and a horizontal pipe connecting the upper portions of the descending and ascending pipes, and shields or deflectors arranged in the upper portions of the inlet and outlet pipes of the settling chamber, substantially as set forth.

No. 41,349. Extension Chandelier.

(Chandelier à rallonge.)

Frank Overholt and Menzo Fretz, both of Harlan, Iowa, U. S. A., 21st December, 1892; 6 years.

Claim.—1st. An extension chandelier, the telescopic tubes, the lower one of which is provided with means for supporting a lamp or burner, said tubes having limiting stops at their ends and one of said tubes carrying a lamp socket, in combination with spirally coiled wires within the tubes to be connected with the opposite poles of an electric circuit, and to assist in supporting the weight of the tubes, and maintain them in their adjusted position, substantially as herein described. 2nd. In an extension chandelier, the telescopic tubes having inwardly and outwardly turned flanges at their ends, and a lamp socket carried by the lower tube, in combination with conducting wires within the tubes, and to be connected with a source of electric supply, said wires being spirally coiled, whereby they are distended when the tubes are extended, and contracted when the tubes are telescoped, substantially as herein described. 3rd. In an extension chandelier, having telescopic tubes with inwardly and outwardly turned end flanges, the innermost and lowermost of the tubes being split longitudinally at their upper ends, and spirally coiled wires extending through said tubes to assist in maintaining the tubes in their adjusted positions, substantially as herein described.

No. 41,350. Cistern for Sewage. (*Citerne d'égouts.*)

The Union Construction Company, Portland, Maine, assignee of Frank Loring Union, Boston, Massachusetts, U. S. A., 21st December, 1892; 6 years.

Claim.—The improvement in cess pools, consisting of a water tight reservoir, provided with a water tight partition *c*, a receiving pipe extending into said reservoir and extending downward therein to a point below the surface of the water, a reservoir having sides through which the water may percolate, and a pipe extending from a point below the surface of the water in the water tight reservoir up to a point below that at which the receiving pipe enters said

water tight reservoir, at which point it communicates with the second mentioned reservoir, as set forth.

No. 41,351. Combined Hot Air Furnace and Cooking Stove. (*Calorifère à air et poêle de cuisine combinés.*)

Frank Moses, Toronto, Ontario, Canada, 21st December, 1892; 6 years.

Claim.—1st. A hot air furnace having one or more pot holes A, extending from the side of its fire pot, a flue B^1, surrounding the pot hole and communicating therewith, in combination with the pipes B, arranged to connect the flue or flues B^1 with the chamber C, substantially as and for the purpose specified. 2nd. The chamber C located above the fire pot of an ordinary hot air furnace and surrounding an oven D, in combination with a series of pipes B, arranged within the hot air space H, and connecting the interior of the fire pot with the interior of the chamber C, and an adjustable damper F, substantially as and for the purpose specified. 3rd. A hot air furnace having one or more pot holes A, extending from the side of its fire pot, a series of pipes B, arranged to connect the interior of the fire pot with the interior of the chamber C, located above the said fire pot, in combination with an oven B, located within the chamber C, and an adjustable damper arranged over a hole in the base of the chamber C, substantially as and for the purpose specified.

No. 41,352. Pneumatic Tire for Velocipedes.

(*Bandage pneumatique pour velocipèdes.*)

The Cleveland Tire Company, Cleveland, Ohio, assignee of Rudolph W. Huss, Chicago, Illinois, all in the U.S.A., 21st December, 1892; 6 years.

Claim.—1st. In a pneumatic tire, a reinforcing from which the longitudinal or warp threads are omitted along the thread portion of the tire, substantially as described. 2nd. In a pneumatic tire, reinforcing fabric having the longitudinal or warp threads arranged at increasing distance apart towards the thread portion of the tire and omitted along such thread portion, substantially as described. 3rd. A pneumatic tire comprising a reinforcing fabric united with a layer of rubber and having its longitudinal or warp threads omitted along the thread portion of the tire, substantially as described. 4th. A pneumatic tire comprising an outer tubular cover, an inner tubular layer of reinforcing fabric having its longitudinal or warp threads omitted along the thread portion of the tire, and an air tube arranged within tubular reinforcing fabric, substantially as described. 5th. A fabric for reinforcing pneumatic tires, woven with a longitudinal portion a^1, from which the longitudinal or warp threads are omitted and adapted to reinforce the tread portion of the tire, the remaining portion of the fabric involving both warp and woof threads, being adapted for reinforcing the remaining portions of the tire, substantially as described. 6th. A pneumatic tire reinforced along its tread portion by cross threads, and reinforced along its remaining portion or portions by heavier or stouter reinforcing material. 7th. A reinforcement for pneumatic tires, consisting of a tube of woven material having a portion of the warp threads omitted, so as to provide it with a width of reinforcing material composed of transverse threads, substantially as and for the purpose described.

No. 41,353. Pneumatic Tire for Velocipedes.

(*Bandage pneumatique pour velocipèdes.*)

The Cleveland Tire Company, Cleveland, Ohio, assignee of Rudolph W. Huss, Chicago, Illinois, both in the U.S.A., 21st December, 1892; 6 years.

Claim.—1st. A pneumatic tire having its tread reinforced by a layer of transversely arranged thread, substantially as set forth. 2nd. A pneumatic tire embodying in its construction a reinforcing layer arranged to reinforce the side portions of the tire and employed in connection with and as supplementary to a tubular reinforcing layer of spirally wound thread, substantially as set forth. 3rd. A pneumatic tire provided along its seating portions with slits or openings either with or without covering patches, said slits or openings being arranged at intervals along the tire and being adapted to permit an inclosed air tube to be mended at such point or points as the same may become ruptured. 4th. A pneumatic tire constructed with layers of rubber, spirally wound thread, and canvas or like material pressed together and vulcanized, substantially as set forth.

No. 41,354. Method of Drying and Burning Bricks.

(*Méthode de sécher et cuire la brique.*)

Henry J. Kinzel, assignee of John C. Kinzel, both of Knoxville, Tennessee, U.S.A., 21st December, 1892; 6 years.

Claim.—A method of drying and burning brick, which consists in firs tcoursing green undried brick in horizontal courses in a kiln to form a layer threof, capping the layer with metallic coverings to spread the heat, firing the kiln, then after the first layer is dry removing said metallic covering, and successively coursing and capping separate layers of green undried brick upon the last dried layer until the operation is complete, substantially as set forth.

No. 41,355. Machine for Forging Horse-shoe Nails.

(*Machine à forger les clous de fer à cheval.*)

The Albany Horse Shoe Nail Company, assignee of David Francis Williams, all of Albany, New York, U. S. A., 21st December, 1892; 6 years.

Claim.—1st. In a horse-shoe nail machine, the combination, with the preliminary shaping dies, the shearing die, a punch for forcing a blank through the latter, and means for holding said blank in position for operation thereon by said punch, the same consisting of a fixed guide as N, and a guide as O, moving to and from the latter, substantially as and for the purpose specified. 2nd. In a horse-shoe nail machine, the combination, with the preliminary shaping dies, the shearing die, the former P, consisting of a bar movable horizontally relative to the shearing die, and placed below the shearing die opening, the punch for forcing a blank through the latter and to said former P, and means to move said former to discharge the nail from the machine, substantially as and for the purpose specified. 3rd. In a horse-shoe nail machine, the combination, with the mechanism for preliminary shaping a nail from a rod or stock, a shearing die having a wedge shaped opening for the point of the nail to be forced through, the cutter for severing from said stock, a punch for for forcing the blank through the shearing die and into contact with said cutter, a former consisting of a bar beneath the die opening and movable horizontally relative thereto, and means to move said former, substantially as and for the purpose described. 4th. The combination, with the shearing die, the reciprocating punch co-operating therewith, the arm 44 to said punch, the lever connected to said arm, and the cam acting on both arm and lever to positively move said punch in both directions, substantially as described. 5th. The combination, with the forging die having the fixed and movable parts for operating to form the sides of the nail the shearing die, the reciprocating punch for co-operation with the latter, the guides for use with said shearing die consisting of a fixed and a movable member, the movable nail stock guiding piece for moving a partially formed nail into position for the action of the shearing die, and the series of cams mounted on one shaft to actuate the above enumerated movable parts, substantially as described. 6th. In combination, the forging die having the fixed and movable parts for forming the sides of the nail, the shearing die, the reciprocable punth for co-operation with the latter, the guides for use with the shearing die consisting of a fixed and a movable member, the movable nail stock guiding piece R, the rod feeding mechanism, and the series of cams for actuating the above enumerated movable parts, substantially as described. 7th. In combination, with a rotary hammer, the anvil, the fixed and the movable dies on the sides of the latter, the cam mechanism for moving the movable die, the shearing dies, the punch, the cam mechanism for moving the same, the guide for use with said shearing dies and punch, having a movable part, the cam mechanism for operating the latter, and the cam operated mechanism for moving a blank from the anvil to the shearing dies, substantially as specified. 8th. In combination, the rotary hammer, the anvil, the nail side shaping dies, the shearing die and punch, the guide for use with these latter, consisting of a fixed member N, and a vertically and laterally movable member O, the former P, immediately below the movable member, the vertically and laterally movable nose piece R, and the rod feeding devices, substantially as and for the purpose described. 9th. In combination, a rotary hammer, the anvil, the fixed and the movable nail side shaping dies, the spring actuated rod rest 79, the shearing die and punch, the laterally moving scraper Q, for said shearing die, the former P, beneath said shearing die, the lever 73, engaging said former and said scraper to move them in opposite directions, the former from beneath the shearing die and the scraper over it, and suitable means for operating said lever 73, substantially as and for the purpose described. 10th. In combination, the nose piece R, the vertically movable holder 83, the carriage 86, to which the same is pivoted the vertically movable rod engaging said holder to raise it, and the cam, the lever 102, link 101, bell crank 100, and rod 106, for actuating said rod, substantially as described. 11th. In combination, the nose piece R, the pivoted, vertically movable holder 83, the pivoted, laterally movable carriage 86, carrying said holder, the rod 106, engaging the latter to raise it, the bell crank lever pivoted to the carriage 86, and connected to said rod and to suitable actuating mechanism, to raise it and the spring to lower said rod, substantially as described. 12th. In combination, with the pivoted nose piece carriage 86, the vibratory lever 91, connected thereto, the cam for actuating the latter and the spring arm 98, having the cam engaging part which is attached to said lever 91, substantially as and for the purpose described. 13th. In combination, with the pivoted nose piece carriage 86, the double arm vibratory lever 91, connected thereto, and the double cam engaging the two arms of said lever, substantially as and for the purpose described. 14th. In combination, with the nose piece R, the pivoted vertically movable holder 83, the carriage 86, the rod 106, engaging the holder, the bell crank lever pivoted to the carriage and connected to said rod and to the actuating mechanism, the double armed vibratory lever 91, connected to said carriage 86, and the double cam, acting on both of said arms, substantially as and for the purpose described. 15th. In combination, with a punch carrier, as K, the two part punch holder M, having a recess for the punch, the block 40, in said recess to abut against the punch, having heads to retain the block in said recess, the parts 39 engaging said heads, the screws 38, to move

the parts 39, and the screw engaging the holder M, opposing the screws 38, substantially as and for the purpose described. 16th. In combination, with a punch carrier K, having an offset forming a head, the punch holder M, placed in a dovetailed recess, the gibs 39, on the upper and lower sides of said holder, the block 40, between the ends of said gibs and the punch, a screw for each gib, and a screw engaging the holder M opposing the gib screws, substantially as and for the purpose described. 17th. In combination, the shearing dies, the punch, the punch carrier K, the L-shaped arm 44, having one member connected adjustably with said carrier, and a cam engaging the other member, substantially as shown and described. 18th. In combination, the shearing dies, the punch, the punch carrier K having a dovetailed recess, the L shapped arm 44, having its vertical member in said recess, the adjusting screw engaging said member, and suitable actuating means engaging the other member of said arm, substantially as shown and described. 19th. In combination, with the shearing die and punch, the guide, consisting of a fixed and a movable member, the vertical rod 54 pivoting the latter, the cam actuated lever 56, connected to said rod, to lower it and said member, and the cam actuated devices connected to said member to move it laterally, substantially as and for the purpose described. 20th. In combination with the shearing die and punch, the movable guide O, the rod 54 pivoting it, the lever 62 for swinging said guide laterally, the lever 56 and spring 54 for moving it vertically, and the nut on said rod having a spring 69 engaging said lever 56 to restore and yieldingly maintain the normal horizontal position of said grade O, substantially as described. 21st. In combination, the movable guide O, the vertical rod 54 pivoting it, the lever 62 for swinging it laterally provided with a stop screw 68, the lever 56 and spring 60 encirling rod 54 for moving said guide vertically, and cams to actuate said levers 62 and 56, substantially as described. 22nd. In combination with the laterally movable guide O, the vertical pivot rod 54, the forked lever 56 and the nut on said rod adjacent to said lever having a spring 69 engaging the same, substantially as and for the purpose specified. 23rd. In combination with the gripping blade, the head therefor having a groove in its face in which said blade is seated, and the nut for holding it in place, substantially as and for the purpose described. 24th. In combination with the movable grip, the cam actuated lever 128 for moving it to feed forward, connected therewith by a link 127, and the coiled spring 13 connected to said lever to move it in a reverse direction, substantially as described and for the purpose specified. 25th. In combination with the nail forging devices, the rod gripping device and means for moving said device to first feed the rod to the forging devices, and then draw it backward a short distance, substantially as specified. 26th. In combination with the rod gripping devices, composed in part of a blade forced normally against the rod, the rocker lever 117, the link 119 connecting the same to an automatically operating lever, the treadle, the link 13 connecting the same to the link 119, and the spring for normally raising said lever substantially as and for the purpose described. 27th. In combination with the shaping devices, of a nail machine, of a reel for holding nail stock or rod, substantially as and for the purpose described. 28th. In combination with the shaping devices, a reel for holding the nail stock or rod, and the rod feeding devices, substantially as described. 29th. In combination with the forging devices, the vibratory rod raising device 79, substantially as and for the purpose described. 30th. In combination with the hammer and anvil, the spring piece 79 secured adjacent to the latter, having an extension 80 to engage the nail stock or rod, substantially as described. 31st. In combination with the rotary hammer C and the anvil, the vertically movable nail rod carrying device, as R, and the guard *d* carried by the hammer C to limit the raising of the nail rod, substantially as and for the purpose described.

No. 41,356. Furnace. (*Fournaise.*)

James Scott Ecker, John Sutton Laidlaw and James Laidlaw, all of Portland, Oregon, U.S.A., 21st December, 1892; 6 years.

Claim.—A furnace comprising the brick work A, the fire chamber C in the front end thereof, the ash pit therebelow, the curved bridge wall E, having its top E^1, inclined upwardly and rearwardly from the grate and having a transverse channel G communicating with the outer air through passages H leading through the side walls of the furnace front, a chamber F between the bridge wall and rear end of the brick work A, and formed of brick work with an arched top I, and an inverted arched radiating surface I^2, registering at one end with the rear edge of the curved inclined top E^1, openings G^1 connecting the chamber F and passage G, and series of vertical openings I^3 leading through the top I, substantially as set forth.

No. 41,357. Signal for Railways.

(*Signal de chemin de fer.*)

Jacob William Lattig and William Frederick D. Pascoe, both of Easton, Pennsylvania, U.S.A., 21st December, 1892; 6 years.

Claim.—1st. The combination of a railway signal, signal operating mechanism composed in part of two rods or slide bars capable of engaging and being disengaged from one another, a clamp through which said bars pass and can move, means for locking the clamp in its closed position, and an electro-magnet for controlling said locking means, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, substantially as set forth, of a signal, a divided signal operating rod, a clamp for holding together the two parts of the rod which pass through and move in said clamp, and an electro-magnetically operated detent for controlling the movable member of said clamp, substantially as and for the purposes hereinbefore set forth. 3rd. In combination with the toothed slide bars forming part of the signal operating mechanism, the clamp lever, the pivoted latch lever for locking and releasing the clamp lever, the detent for locking and releasing the latch lever, and the electro-magnet and its armature lever for controlling the detent, substantially as and for the purposes hereinbefore set forth. 4th. The combination, substantially as hereinbefore set forth, of signal operating mechanism having at some point in it between the signal and the operating lever a mechanical brake, means for closing said brake, an electro-magnet controlling said brake closing means, a lock circuit including said magnet and a second or lock operating circuit, including an electro-magnet which controls contacts included in the lock circuit, substantially as and for the purpose hereinbefore set forth. 5th. A railway electric block signalling system, comprising at one station a signal, signal operating mechanism having in it a mechanical brake, means for closing said brake, an electro-magnet for controlling said brake closing means under such an arrangement that the brake shall be open so long as and whenever the magnet is inactive, and a normally open lock circuit including said magnet, in combination with an insulated track section extending from that station to the next, a normally open lock operating circuit, formed in part by the track rails of said section, and including at the last station the key by which it is closed and opened, and at the first named station (or station where the signal to be operated is located) an electro-magnet controlling normally open contacts in the local lock circuit, the arrangement being such that the local lock circuit at the one station can be closed only through the closure of the lock operating circuit at the other stations, substantially as and for the purposes hereinbefore set forth.

No. 41,358. Machine for Separting Sugar.

(*Machine pour séparer le sucre.*)

The Honourable George Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 22nd December, 1892; 18 years.

Claim.—An apparatus for separating raw sugar and other impure sugar masses by systematically lixiviating the same with a saturated solution of pure sugar consisting of the combination of a cellular vessel for receiving the repeatedly to be used lixiviating fluid which is separated according to its specific gravity with a number of lixiviating vessels in such manner that the contents of each cell is uniformly distributed over all the washing vessels the latter being mounted on trolleys and arranged to be tilted over and the outlets of such vessels being removably connected to the tubular service for feeding the cells of cellular vessel for the purpose and as shown in the accompanying drawing and substantially as set forth herein.

No. 41,359. Process of Preparing Sugar.

(*Procédé pour préparer le sucre.*)

The Honourable George Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 22nd December, 1892; 18 years.

Claim.—An improved process for systematically boiling juices containing sugar in order to produce crystallization of the same consisting therein that when carrying out the boiling operation sugar juices or saccharine solutions of continually decreasing purity are introduced into the vacuum boiling apparatus said juices or solutions being derived from a saturated aqueous solution of sugar which had been previously used for washing the molasses out of impure crystalline sugar masses and systematically drawn off in portion of continually increasing purity.

No. 41,360. Method of Preparing Sugar.

(*Méthode de préparer le sucre.*)

The Honourable George Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 22nd December, 1892; 18 years.

Claim.—A process for washing and systematically boiling sugar solutions in grain sugar characterized thereby that by washing of masse cuite by means of the clear obturned from plant juices containing sugar or from other sugar solution immediately after having eliminated the quantities of molasses adhering to the masse cuite syrups an obtained which subdivided into five to six portions of different qualities or purity an employed in further washing operations as a limited quantity for replacing the molasses adhering to other masse cuite before the proper washing process for obtaining the portions separated according to purity for the systematic boiling process with the clean of less specific gravity and quater purity, commences in order to attain that sugar solutions of a specific gravity not matinally differing will operate the one on the other, substantially as described.

No. 41,361. Apparatus for Preparing Sugar.

(Appareil pour préparer le sucre.)

The Honourable Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 22nd December, 1892; 18 years.

Claim.—1st. An apparatus for producing pure white sugar from masses of sugar unpurified by syrup, by lixiviating such masses with a saturated solution of pure sugar, and consisting of one or more vessels A A^1 to A^n, containing the sugar mass to be treated (Figures 1, 2 and 4), and one or more cellular vessels C, C^1, C^2, C^3 with a number of compartments or cells, said vessels being connected to the vessels A^1 to A^n by suitable pipes or tubes, each of the cells of the said cellular vessels being filled from a common supply pipe, and so provided with outlets and tubing or piping that the lixiviating fluid in the said cells is fed into the vessels containing the sugar mass to be lixiviated, substantially as described and shown in the accompanying drawings. 2nd. The apparatus as represented in figure 3, in which it is rendered possible to employ a single cellular vessel in connection with two lixiviating vessels by duplicating the supply and drain pipes, said pipes being provided with inlet and outlet devices, substantially as described and shown in the accompanying drawings. 3rd. An apparatus for lixiviating impure sugar masses, characterized by the application of connected groups of interchangeable and uniformly operating lixiviating vessels connected with each other by the supply and drain service *h*, *i*, and which are simultaneously subjected to the lixiviating process, so that the lixiviating fluid which can before to the separate groups by means of the tube J, first passes through the sugar mass in the one group of vessels, and then successively through the other groups, so that the lixiviating fluid after passing through the last group of vessels in the battery has become very impure by the sugar removed from the sugar crystals, and is drawn off whilst the first group of vessels contain pure white refined sugar, and can be interchanged for a group of vessels or moulds charged with impure sugar mass, substantially for the purpose and as set forth in the foregoing specification, and represented by the figures 5 to 8 of the accompanying drawings, substantially as hereinbefore set forth.

No. 41,362. Process of Preparing Sugar.

(Procédé pour préparer le sucre.)

The Honourable George Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 22nd December, 1892; 18 years.

Claim—A process for systematically separating impure sugar masses into white sugar and molasses by a lixiviating process by means of a saturated aqueous solution of pure sugar in such manner that the solution of sugar which on the one hand in order to prevent the dissolving of sugar and on the other hand to prevent the packing of the sugar mass under the treatment must under all circumstances have an exact degree of saturation, is caused to operate on the sugar mass, which is always retained in pulpy form, in a lixiviating battery, through which the washing fluid in forced in given space and time, the purified sugar mass after driving off the lixiviating fluid of the elements of the battery by a pure solution of sugar, and being removed by the fresh quantity of sugar mass for a litre purification in the battery inserted in order to be subjected to the litre action of the lixiviating fluid for the purpose and and substantially as above described.

No. 41,363. Method of Purifying and Manufacturing Saccharine Solutions. *(Méthode de purifier et fabriquer des solutions saccharines.)*

The Honourable George Alexander Drummond, Montreal, Quebec, assignee of Moriz Weinrich, of St. Louis, Mo., U.S.A., 22nd December, 1892; 6 years.

Claim.—The described process of filtering and purifying saccharine solutions, and at the same time increasing their density, consisting in mixing the hot solution with meal of sugar, containing cane or beets, and passing the mixture through filtering presses, as and for the purposes set forth.

No. 41,364. Art of Cleaning and Washing Raw Sugar.

(Art de nettoyage et lavage du sucre.)

The Honourable George Alexander Drummond, Montreal, Quebec, assignee of Moriz Weinrich, of St. Louis, Mo., U.S.A., 22nd December, 1892; 6 years.

Claim.—The improvement in the art of cleaning and washing raw sugar or mass-cuite, which consists in mixing it with an indifferent, light, and porous material, as described, placing such mixed material in a vessel and washing such mixture with syrup while contained in said vessel, substantially as described.

No. 41,365. Label Holder. *(Porte-étiquette.)*

Emory Evans Smith, Polo Alto, California, U.S.A., 23rd December, 1892; 6 years

Claim.—1st. A label holder having its support or shank formed integral with it from a single piece of wire and provided with the opposing sides and tongue, connected as described, whereby the torsional strength of the wire is exerted to grasp the card or label, substantially as described. 2nd. A label holder formed with its shank from a single piece of rod or wire and having a loop holder formed with parallel or substantially parallel sides and intermediate tongue connected to said sides to exert a torsional action on the connecting portion of the loop, substantially as described. 3rd. The combination in a label holder, of the loop shaped holder portion having the sides and intermediate, opposing tongue and the shank portion adapted to engage the article or support to which the label is to be applied, said loop holder and supporting shank being formed from a single piece or wire, substantially as described.

No. 41,366. Well Drilling Apparatus.

(Appareil à forer les puits.)

Wesley Webber, Pittsburg, Pennsylvania, U.S.A., 23rd December, 1892; 6 years.

Claim. 1st. In deep well drilling apparatus, the combination, of an electric motor, a drill shaft connected with the motor and actuated thereby, a longitudinally yielding spring connection for the drill shaft, and a case adapted to contain the several parts and to bear upon the said spring connection, substantailly as and for the purpose described. 2nd. In deep well drilling apparatus, the combination of a case adapted to be let into the well, an electric motor in the case, a drill shaft actuated thereby, and a drilling bit carried by the shaft and consisting of divergeable, parts substantially as and for the purposes described. 3rd. In deep well drilling apparatus, the combination of a case adapted to be let into the well, an electric motor in the case, a drill shaft actuated thereby, a drilling bit carried by the shaft and consisting of divergeable parts, and toggle levers by which the parts of the bit are spread, substantially as and for the purposes described. 4th. In deep well drilling apparatus, the combination, of a case adapted to be let into the well, an electric motor in the case, and a pump for ejecting water therefrom, substantially as and for the purposes described. 5th. In deep well drilling apparatus, the combination of a case adapted to be let into the well, an electric motor, a pump having an inlet port communicating with the exterior of the case, and an outlet port connected by a hollow cable with the surface of the well, said pump being connected with and driven by the motor, as and for the purposes described.

No. 41,367. Dovetailing Machine.

(Machine d'assemblage à queue d'aronde.)

Charles Enoch Parks, Watertown, Wisconsin, U.S.A., 23rd December, 1892; 6 years.

Claim.—1st. In a dovetailing machine, the combination of a stationary table, a rotary cutter head arranged above the same, a laterally adjustable table parallel with the first, another cutter head carried with and above the adjustable table, an endless carrier arranged between the tables, gages on said tables, and guards secured to the gages, substantially as set forth. 2nd. In a dovetailing machine, the combination of a table, a saw projecting above the same, a cutter head in front of the saw, a spring controlled guard arranged above the cutter head, and a guard for the saw supported on the springs that control the former guard, substantially as set forth. 3rd. In a dovetailing machine, the combination of a stationary table, a bracket depending from the table and fast on cross rods, a vertical shaft having its bearings in the bracket and extended above the table, a cutter head and pulley fast on the shaft, another table parallel to the first, a bracket depending from the latter table and loosely arranged on said rods, another vertical shaft having its bearings on the latter bracket and provided with a cutter head and pulley, a screw threaded adjusting shaft engaging a screw threaded bearing on the loose bracket, a drive shaft, a pulley fast on the drive shaft and belted to the one on the first cutter head shaft, another pulley splined on said drive shaft and belt geared to the pulley on the cutter shaft that is carried with the loose bracket, an arm connecting the loose bracket with the splined pulley, and an endless carrier arranged between said tables and driven from the aforesaid drive shaft, this carrier having a portion thereof movable with the adjustable table, substantially as set forth.

No. 41,368. Loom for Weaving Slat and Wire Fabrics. *(Métier pour tisser la toile métallique.)*

Charles Enoch Parks, Watertown, Wisconsin, U.S.A., 23rd December, 1892; 6 years.

Claim.—1st. In a loom for weaving slat and wire fabric, the combination of warp crossers, a device into which the slats are successively fed and which has interstices for passage of the warp wires, and suitable means for imparting a reciprocative movement to said device, substantially as set forth. 2nd. In a loom for weaving slat and wire fabric, the combination of warp spools under tension, crossers for the warp, a device into which the slats are successively fed and which has interstices for passage of the warp wires from the spool, suitable means for reciprocating this device, and an automatic take-up fabric, substantially as set forth. 3rd. In a loom for weav-

ing slat and wire fabric, the combination of warp crossers, a device into which the slats are successively fed and which has interstices for passage of the warp wires, suitable means for imparting a reciprocative movement to said device, and slat grippers arranged in the path of the same, substantially as set forth. 4th. In a loom for weaving slat and wire fabric, the combination of the evener guides for the wires forming the warp, crossers for the warp wires, a device into which the slats are successively fed and which has interstices for passage of said warp wires, and suitable means for reciprocating said device, substantially as set forth. 5th. In a loom for weaving slat and wire fabric, the combination of rotary warp crossers, a device into which the slats are successively fed and which has interstices for passage of the warp wires, and suitable means for imparting a reciprocatvie movement to said device coincident with the rotation of the warp crossers, substantially as set forth. 6th. In a loom for weaving slat and wire fabric, the combination of the warp spreaders, a device into which the slats are successively fed and which has interstices for passage of the warp wires, suitable means for reciprocating said device, a reel for the fabric, and a pressure guide for said fabric adjacent to the reel, substantially as set forth. 7th. In a loom for weaving slat and wire fabric, a reciprocative slat receiver and carrier, comprisng inner and outer sides having their rear edges united by plates at certain intervals apart, and provided with blocks coincident with the plates, the blocks on one side of the receiver and carrier being opposed to those on the other side of the same, substantially as set forth. 8th. In a loom for weaving slat and wire fabric, a reciprocative slat receiver and carrier, comprising inner and outer sides having their rear edges united by plates at certain intervals apart, and provided with bevel faced blocks coincident with the plates, the blocks on one side of the receiver and carrier being opposed to those on the other side of the same, substantially as set forth. 9th. In a loom for weaving slat and wire fabric, the combination of a slat carrier, a shaft provided with cranks, pitmen connecting the carrier and cranks, a pair of shafts geared to each other and provided with crosser arms, one of these latter shafts being geared to the crank shaft, and a drive shaft geared to the said crank shaft, substantially as set forth. 10th. In a loom for weaving slat and wire fabric, the combination of a slat carrier, a shaft in gear with a drive shaft and having crank and pitman connections with the carrier, a pair of shafts geared to each other and provided with crosser arms, one of the latter shafts being geared to the shaft that is connected with said carrier, a pulley on the other of the crosser shafts, a reel shaft provided with a pulley, and a belt connecting the pulleys, substantially as set forth. 11th. In a loom for weaving slat and wire fabric, a spool holder consisting of a spindle having a squared outer end and its base provided with an outwardly extended flange, a collar slipped on the squared end of the spindle, a screw having its bearings in said squared end of the spindle, and a spiral spring arranged on the screw between the head of the latter and said collar, substantially as set forth. 12th. In a loom for weaving slat and wire fabric, the combination of spools under tension, a slat carrier, a shaft provided with cranks, pitmen connecting the carrier and cranks, a pair of shafts geared to each other and provided with crosser arms, one of the latter shafts geared to the crank shaft, and a drive shaft geared to said crank shaft, substantially as set forth. 13th. In a loom for weaving slat and wire fabric, the combination of a slat carrier, a shaft in gear with the drive shaft and having crank and pitman connections with the carrier, a pair of shafts geared to each other and provided with crosser arms, one of the latter shafts geared to the shaft that is connected to the carrier, a pulley on the other of the crosser shafts, a reel having its shaft provided with a pulley, a belt connecting the pulleys, and a pressure guide for the fabric adjacent to the reel, substantially as set forth. 14th. In a loom for weaving slat and wire fabric, the combination of a reciprocative slat carrier having an extension provided with fingers that yield to pressure in one direction, a feed box for slats arranged at an angle to the line of the carrier's travel, and adjacent to an opening in the loom frame, a wall at an angle to the feed box and parallel to said opening, guards connecting this wall and the front wall of said feed box, and automatically actuated slides provided with fingers that extend through slots in the aforesaid feed box, substantially as set forth. 15th. In a loom for weaving slat and wire fabric, the combination of a reciprocative slat carrier having an extension provided with fingers that yield to pressure in one direction, a feed box for slats arranged at an angle to the line of the carrier's travel, and adjacent to an opening in the loom frame, a wall at an angle to the feed box and parallel to said opening, guards connecting this wall and the front wall of said feed box, slides working between guides on the latter wall, and provided with fingers extended through slots in the same, pulleys arranged on the lower guide for each slide, another pulley mounted on the lower slide, and a weighted flexible device fast to the upper slide and arranged to run on the several pulleys, substantially as set forth. 16th. In a loom for weaving slat and wire fabric, the combination of a reciprocative slat carrier having an extension provided with fingers that yield to pressure in one direction, a feed box for slats arranged at an angle to the line of the carrier's travel and adjacent to an opening in the loom frame, a wall at an angle to the feed box and parallel to said opening, guards connecting this wall and the front wall of said feed box, and automatically actuated slides having hinged sections provided with fingers that extend through slots in the aforesaid feed box, substantially as set forth.

No. 41,369. Hot Blast Stove. (*Appareil à air chaud.*)

George Washington McClure, Pittsburg, Pennsylvania, U.S.A., 23rd December, 1892; 6 years.

Claim.—1st. In a hot blast stove, the combination with an upwardly seating stack valve and means for positively actuating it, of an air blast pipe having its end directed toward the under sides of the valve and adapted to apply to the valve a seating pressure, substantially as and for the purposes described. 2nd. In a hot blast stove, a vertical central combustion flue having an annular wall, a surrounding annular wall separated therefrom to afford an intermediate flue space connected at the top with the combustion flue, subdiving radial walls interposed between the wall of the combustion flue and the outer wall and being keyed to one of said walls and abutting against the other, so as to be capable of motion with its attached wall independently of the other, air and gas inlets for the combustion flue, a hot blast outlet leading from the stove a cooled blast inlet, and a stack flue, substantially as and for the purposes described. 3rd. In a hot blast stove, a vertical central combustion flue having an annular wall, a surrounding annular wall separated therefrom to afford an intermediate flue space connected at the top with the combustion flue, subdividing radial wall interposed between the wall of the combustion flue and the outer wall and being keyed to one of said walls and abutting against the other, so as to be capable of motion with its attached wall independently of the other, a third and outer annular wall concentric with the others, and subdividing radial walls interposed between the last named annular wall and the next inner annular wall, keyed to one of said walls and abutting against the other, substantially as and for the purposes described.

No. 41,370. Temporary Binder.

(*Reliure temporaire.*)

Henry Wilson Scattergood, Philadelphia, Pennsylvania, U.S.A., 23rd December, 1892; 6 years.

Claim.—A temporary binder comprising a rigid or stiff side, a movable side provided with a flexible portion to permit it to be raised and lowered independently of the other side, a flexible back connecting these sides, posts fixed to the rigid side and projecting through registering openings in the movable side to receive papers to be bound, and catches arranged upon the sides and adapted to interlock the sides as the sides are brought into parallelism, substantially as described. 2nd. In a temporary binder, a rigid side provided with a strip of spring metal terminating in upturned jaws, and a movable side provided with a strip of spring metal terminating in tongues, these strips of metal being parallel, and their jaws and tongues adapted to engage one another as the sides are brought together, substantially as described. 3rd. A cover or temporary binder, having a fixed side and a movable side connected by a flexible back and spring catches and provided with posts secured to the fixed side and adapted to project through openings in the movable side to receive papers or sheets of paper provided with holes to engage the posts, substantially as described.

No. 41,371. Sled. (*Traîneau.*)

George Basile Paquette, Fulton, New York, U.S.A., 23rd December, 1892; 6 years.

Claim.—1st. The combination, with an axle B, and the frame of a sled or similar support, of a box C, formed with an outer end wall at the outside of the end of the axle, and composed of a section c, rigidly secured to said frame, and a second section c^1, hinged to the former section, and a clamp F, having one end engaged with the section c, and the other end removably engaged with the former section, substantially as and for the purpose set forth. 2nd. The combination with an axle B, and the frame of a sled or other support, of a box section c, rigidly secured to the frame and formed with an end wall C^3, at the outside of the end of the axle, a second box section c^1, hinged to the former section c, and formed with an end wall C^4, also at the outside of the end of the axle, and a clamp F, for securing the latter section c^1, in its operative position, substantially as and for the purpose specified. 3rd. The combination, with an axle B, and the frame of a sled or other support, of a box section c, rigidly secured to the frame, and formed with an end wall C^3, at the outside of the end of the axle, provided with a projection C^5, a second box section c^1, hinged to the former section c, and formed with an end wall C^3, at the outside of the end of the axle, provided with a projection C^5, a second box section c^1, hinged to the former section c, and formed with an end wall C^4, also at the outside of the end of the axle, and having a groove C^6, for engaging the projection C^5, and a clamp F, for securing the latter section c^1, in its operative position, substantially as and for the purpose set forth. 4th. The combination, with an axle B, and the frame of a sled or similar support, of a box section c, rigidly secured to the frame and formed with a socket C^7, a second box section c^1, hinged to the former section c, and formed with a slot C^9, of greater length than width, a clamp F, consisting of a shank f, mounted in the socket C^7, and a head f^1, of greater length than width for passing through the slot C^9, substantially as and for the purpose specified. 5th. The combination, with an axle B, and the frame of a sled or other support, of a box section c, rigidly secured to the frame, and formed with an end wall C^3, at the outside of the end of the axle, and provided with a screw threaded socket C^7, a second box section

c^1, hinged to the former section c, and formed with an end wall C^4, also at the outside of the end of the axle interlocking with the end wall C^3, said section c^1, being formed with a slot C^9, of greater length than width, a clamp F, consisting of a shank f, mounted in the socket C^7, and a head f^1, of greater length than width for passing through the slot C^9, substantially as and for the purpose set forth. 6th. The combination, with an axle B, having a cylindrical bearing surface b, and and a flange or shoulder b^1, on the inner face of said surface, of the frame of a sled or similar support, a box C, formed with an end wall at the outside of the end of the axle, and composed of the section c, rigidly secured to said frame, and the section c^1, hinged to the section c, said box C, being provided with an interior chamber C^8, having its outer end of greater diameter than the portion of the axle encased thereby, and formed with a bearing surface C^{10}, for engaging the axle surface b, and with a groove C^{11}, at the inner side of the surface C^{10}, for receiving the shoulder b^1, on the axle, and a clamp F, for securing the box section c^1, in its operative position, substantially as and for the purpose specified. 7th. The combination, with the runner frames a, a, of a sled, cross bars a^1, a^1, between said runner frames, having their ends projecting beyond the runner frames, and bars a^2, a^2, at the outside of the runner frames mounted on said projecting ends of the cross bars a^1, a^1, of a box C, formed with an outer end wall at the outside of the end of the axle, and composed of a section c, rigidly secured to said frame, and a second section c^1, hinged to the former section, and a clamp F, having one end engaged with the section c, and the other end removably engaged with the former section, substantially as and for the purpose set forth.

No. 41,372. Holder for Shirt Collars.

(Attache pour cols de chemises.)

Frank L. Robinson, Hartland, Maine, U.S.A., 23rd December, 1892; 6 years.

Claim.—1st. A shirt collar holder comprising a doubled tape having a clasp secured to its doubled portion and a device connecting the parts of the tape between its doubled portion and its free ends, substantially as described. 2nd. A shirt collar holder comprising a double tape having a clasp adjustably secured to the doubled portion and free ends, substantially as described.

No. 41,373. Machinery for Operating Jerker Wheels.

(Machine pour actionner les roues par secousse.)

John McKee and Robert Marwick, Petrolia, Ontario, Canada, 23rd December, 1892; 6 years.

Claim—1st. The combination of the bosses A A wrist pins B B, with the jerker wheel H, subtantially as and for the purpose hereinbefore set forth. 2nd. The combination of the swivel joint blocks C C, and wrist pins B B with the pitmans E E, and vertical pins D D, substantially as and for the purpose hereinbefore set forth.

No. 41,374. Toilet Soap Tablet.

(Tablette de savon de toilette.)

Daniel Richards, Woodstock, Ontario, Canada, 23rd December, 1892; 6 years.

Claim.—In a soap tablet, the combination with the soap stock A, of a card C inserted midway between the two tablet faces, said card bearing pictures, designs or words or a combination of them and a depression or recess B in the face of said tablet opposite any representation on said card so as to reduce the thickness of the soap body above the surface of said card to transparency substantially as set forth.

No. 14,375. Machine for Making Horse-shoes.

(Machine pour faire les fers à cheval.)

John Edward Bucklin, Campbell Carrington, and Robert Emmet Morris, all of Washington, District of Columbia, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. In a horse-shoe machine, the combination of a vertically reciprocating plate, and a pair of sliding blocks or carriers provided with bending or shaping rolls, and adapted to be reciprocated back and forth on movement of the plate, substantially as described. 2nd. In a horse-shoe machine, the combination of a vertically reciprocating plate, a pair of reciprocating blocks or carriers provided with bending or shaping rolls, and a pair of inclined guides against which the outer ends of the carriers move, substantially as described. 3rd. In a horse-shoe machine, the combination of a vertically reciprocating plate, a pair of reciprocating blocks or carriers, provided with bending or shaping rolls of springs for maintaining said carriers normally outward, substantially as described. 4th. In a horse-shoe machine, the combination with the vertically reciprocating plate, and a suitable forming die, of a vertically operating finger adapted at intervals to be carried down upon the die to hold the blank, and again lifted after the blank has been bent, substantially as described. 5th. In a horse-shoe machine, the combination with the vertically reciprocating plate, and the forming die, of the slotted tube secured to said plate and containing a spring, and the vertically operating finger working in the slot of the tube, substantially as and in the manner set forth. 6th. In a horse-shoe machine, the combination with the vertically reciprocating plate or frame, of a vertically operating guide plate arranged beneath the frame, and adapted to be operated thereby, substantially as described. 7th. In a horse-shoe machine, the combination with the vertically reciprocating plate or frame, and the vertically operating guide plate for receiving and holding the bar from which the blank is cut, of a cutter for said blank, and a stop against which the end of the blank abuts while being cut, substantially as described. 8th. In a horse-shoe machine, the combination of a forming die, a cutter for the blank, an automatic finger for holding the blank upon the forming die, a guide for receiving the bar from which the blank is made or cut, a pair of shaping or bending rolls and a swage, substantially as described. 9th. In a horse-shoe machine, the combination with the vertically reciprocating plate or frame, and the cutter and stop of the vertically moving guide plate having notches in its upper portion, adapted to receive the cutter and stop on the downward movement of said frame, substantially as described. 10th. In a horse-shoe machine, the guide plate having its side edges turned over to form the spaces m, m, and being also formed with the notches i, i, substantially as described. 11th. In a horse-shoe machine, the combination with the guide plate and blank cutter, of means for temporarily holding or supporting said plate up to the cutter, and means for automatically releasing said support at the time said cutter has completed its work, substantially as described. 12th. In a horse-shoe machine, the combination with the vertically operating guide plate, of the slotted tube O, in which is contained a spring, the rod p pendant from the frame, the sleeve adapted to turn on the rod, and having the nose or projection r, and the lever P with the spring, all substantially as described. 13th. In a horse-shoe machine, the combination with the vertically operating guide plate, and the slotted tube O, the sleeve having the nose r, the lever P, the spring bolt t, supported in a bracket from the guide plate, and the slotted guide w, substantially as described. 14th. In a horse-shoe machine, the combination with a stationary forming die, of a swinging anvil carrying a swage, and operating at intervals to move up to said forming die, substantially as described. 15th. In a horse-shoe machine, the combination with the drive shaft, of a swinging anvil carrying a swage, and means for operating said anvil from the shaft, substantially as described.

No. 41,376. Machine for Preparing Leaf Tobacco.

(Machine pour préparer le tabac en feuille.)

Charles Augustus Snyder, Danville, Virginia, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. An apparatus substantially as described, comprising an agitator consisting of an endless apron and suports therefore, and having its inlet end open and unobstructed whereby the tobacco may be introduced directly into said end in a longitudinal direction, and having an outlet at its opposite end and a lateral opening for the insertion of the treating solutions, &c., substantially as set forth. 2nd. A machine substantially as described, camprising an agitator apron having a lateral opening and open at one end for the introduction of the material, and a receiving chamber connected with the inlet end of the agitator and arranged to introduce the material longitudinally into the end of said agitator, substantially as set forth. 3rd. In an apparatus substantially as described, an agitator comprising open end rings having sprocket teeth, the framing having bearings for the said rings, the apron having at its edges sprocket chains engaging the teeth of the rings and the guide and drive rollers for said apron, substantially as set forth. 4th. In an apparatus substantially as described, an agitator consisting of an endless apron provided on its outer side with projecting teeth and arranged with a space between its ends for the insertion of the treating solutions, &c., and end supports for said apron consisting of open rings, substantially as and for the purposes set forth. 5th. An apparatus substantially as described, consisting of an apron, means for supporting the apron and open end rings in the hollow of said apron at its inlet and discharge ends, all substantially as described, where there is provided a lateral opening for the insertion of the treating solutions or materials, substantially as set forth. 6th. In an apparatus substantially as described, an agitator comprising an endless apron, and end supports therefor consisting of open rings through which the tobacco may be supplied to and discharged from the apron, substantially as set forth. 7th. The improved agitator substantially as described, consisting of the apron sprocket chains at its edges, the end guide rings therefor having on their outer sides sprocket teeth to mesh the chains of the apron, and open at the centre for the introduction and discharge of the tobacco, and the drive roller having sprocket gears meshing the chains of the apron whereby the roller drives the apron and the apron drives its guide rings, all substantially as and for the purpose set forth. 8th. An apparatus substantially as described, comprising a frame having bearing rings provided with bearings for the drive and guide rollers, the endless apron passed around said rollers, and the end guide rings open centrally for the inlet and discharge of the tobacco, and journalled in the frame rings, all substantially as and for the purposes set forth. 9th. In an apparatus, substantially as described, an agitator comprising an endless apron, guides within said apron and circular end guides fitted in the hollow of said apron, whereby the apron may be formed into almost a complete cylinder, the circular end guides preserving the hollow of the apron in proper shape, all substantially as and for the purposes set forth. 10th. An apparatus, substantially

as described, comprising the framing, the endless apron, the end guide rings fitted within the hollow of and arranged to be turned by the said apron, means for driving the apron and the receiving chamber united at one end to one of the end guide rings, whereby the said chamber will be turned by the power applied to the apron, all substantially as and for the purposes set forth. 11th. A machine for treating tobacco, substantially as described, comprising an agitator formed of an endless apron, means for supporting the apron, and circular end guides fitted in the hollow of said apron, whereby there is provided a contracted lateral opening for the introduction of solutions, &c., and a sprayer, substantially as set forth. 12th. An apparatus, substantially as described, comprising the frame rings provided in their inner faces, with notches or openings, the boxes fitted movably in said notches or openings, and provided with rollers, the screws for adjusting said boxes, the hollow guide rings having portions fitting in the frame rings and grooved to receive the said screw adjusted rollers, the endless apron carried by the guide rings and the rollers fitted within said apron, all substantially as set forth. 13th. An apparatus, substantially as described, comprising the frame rings, having outwardly projected brackets having bearings, the drive and guide rolls, journalled in such bearings, the apron passed around said rollers and the end guide rings fitted in the hollow of said apron and journalled within the frame rings, substantially as set forth. 14th. In an apparatus, substantially as described, a powder or dry distributor, comprising a vessel having a discharge opening in its bottom, a cylindrical sieve in said vessel and open at its bottom and arranged with said open bottom over the opening in the bottom of the vessel, said sieve being provided with a shaft and adapted to be revolved and a cylindrical shut off arranged and adapted to be adjusted over said sieve to wholly or partially shut off the same, substantially as set forth. 15th. An apparatus, substantially as described, comprising the liquid reservoir and distributor and the connections, pipes, the intermediate pipe, the blower arranged to discharge its blast into said intermediate pipe, the powder or dry flavouring distributor having a vessel or reservoir and a conducting pipe arranged to receive the powder therefrom, said conducting pipe being connected with the intermediate pipe of the sprayer, whereby it will also receive the blast from the blower, substantially as set forth. 16th. An improved apparatus, substantially as described, consisting of the framing having frame rings, the receiving chamber having end rings fitted in the framing, and a covering of wire gauze or its equivalent, the agitator consisting of the end guide rings, open for the admission and discharge of tobacco, the sprayer having an elongated flaring distributor, a reservoir connected with said distributor and a blower and the flavouring reservoir having its discharge pipe arranged to open into the said distributor, substantially as set forth. 17th. An apparatus, substantially as described, comprising the agitator, the spraying device, the powder distributor, the blower and connections whereby parts of the blast of the blower are directed to the sprayer and to the powder distributor, substantially as set forth. 18th. An apparatus for treating tobacco, consisting of an agitator, a sprayer, a powder distributor, a blower and valve devices, whereby the spray or the powder may be shut off at will, substantially as set forth.

No. 41,377. Dress Form. (*Buse pour robes.*)

George Roger Sherman, Providence, Rhode Island, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. In a dress form, the combination with the ribs, the standard, and the sliding blocks, of braces of different lengths constructed to expand the ribs, as described. 2nd. In a dress form, the combination with the standard provided with a longitudinal groove and the sliding blocks operating the braces and the ribs of the post 5 provided with the socket 9 and legs to support the same constructed to turn the dress form as described. 3rd. In a dress form, the combination with the standard 10, blocks 12 and 13, and braces 15, 16 and 17, of the vertical braces 14 formed by bending one wire in the manner described, and the cross braces 26, the whole connected by bending the braces 15 and 16 over and around the wire of the braces, as described. 4th. In a dress form, the vertical braces 14 formed by bending a wire in the manner described, in combination with the clam piece 25 constructed to secure the ends of the wire, as described. 5th. The combination with a dress form of the post 5 provided with the socket 9, the legs 6, hinged to a sliding block provided with the clamp screw 8 and the perforated plate 7 constructed to secure the legs, as described.

No. 41,378. Fishing Device. (*Appareil de pêche.*)

Charles August Kuenzel, New Jersery, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. A fishing device having a standard and arm connected with said standard, and adapted to have attached thereto a fishing line, and mechanism connected with said arm for operating an alarm, said parts being combined substantially as described. 2nd. A fishing device having a standard, an arm connected at one end with said standard, and adapted to have a fishing line attached thereto, a spring securing the other end of the said arm with the standard, and mechanism connected with the said arm for operating an alarm, said parts being combined substantially as described. 3rd. A fishing device having a spring controlled arm pivoted thereto a gong or bell with hammer arm and operating rod, and an arm pivotally connected with said spring controlled arm and adapted to operate said rod, said parts being combined substantially as described. 4th. A standard, a spring controlled arm pivoted thereto, a gong with hammer and an operating rod, and an arm pivoted to and actuated by said spring controlled arm, so as to bear against the said rod, and thereby operate the said hammer arm, said parts being combined substantially as described. 5th. A fishing device consisting of a standard, a spring controlled pivoted arm adapted to have a fishing line attached thereto, a gong with pivoted hammer arm, and means connected with said pivoted arm and hammer arm for insuring the return of the latter to its normal position after a stroke, said parts being combined substantially as described. 6th. A fishing device, consisting of a standard, a spring controlled pivoted arm adapted to have a fishing line attached thereto, a gong having a suitable support, a hammer arm, a spring connected to said pivoted arm, and means for connecting said spring and the axial portion of the hammer arm, said parts being combined, substantially as described. 7th. A fishing device, consisting of a standard, a spring controlled pivoted arm adapted to have a fishing line secured thereto, a gong, a hammer arm with a pivotal shaft having a projecting arm, a frame or bar connected with said projecting arm, and movable on the standard, and a spring connecting said frame and spring controlled pivoted arm, said parts being combined, substantially as described. 8th. A fishing device, consisting of a standard, a coil spring arm secured to said standard, and adapted to have a line attached thereto, a hammer connected with said arm and a gong, said parts being combined, substantially as described. 9th. A fishing device, consisting of a standard, with an open frame thereon, a gong on said frame, a coil spring arm secured to said standard, and adapted to have a fishing line attached thereto, a hammer carried by said arm, and a gong, said parts being combined, substantially as described. 10th. A fishing device, having a standard, a spring arm secured thereto, and having a connected hammer arm, a gong, and a restoring spring for said spring arm, said parts being combined, substantially as described. 11th. A fishing device, having a standard, rotatable collars thereon, a rising and falling arm with a restoring spring, said arm and spring being connected with said collars, a hammer arm connected with a rising and falling arm, and a gong or bell, said parts being combined, substantially as described.

No. 41,379. Machine for Making Nets.

(*Machine pour faire des filets.*)

William John Hooper, Baltimore, Maryland, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. The herein described cord receiving finger for netting machines having two fixed sides with a space between, and also having in front thereof a notch or depression, into which a portion of the cord wrapped around the finger may be laid, and thereby placed in position to be engaged and drawn down by a loop forming device passed up within the finger, substantially as described. 2nd. The herein described cord receiving finger for netting machines, upon which the cord is wrapped having a cord controlling point below that portion of the finger on which the cord is wrapped. 3rd. The herein described cord receiving finger for netting machines, having three sides or being of U-shape in cross sections. 4th. The herein described cord receiving finger for netting machines, having three sides or being of U-shape in cross section, and having a cord controlling point below that portion of the finger whereon the cord is wrapped, substantially as described. 5th. The herein described cord receiving finger for netting machines, provided with a spring cord support. 6th. The herein described cord receiving finger for netting machines around which the cord is wrapped having fixed sides provided with a cord holding projection preventing the cord from displacement by moving upward on the finger. 7th. The combination with the finger bar and fingers, of the spring cord having a cam projection extending outward beyond one of the sides of the finger, and the finger cast off bar having a projection lying adjacent to the same side of said finger, one of said bars being movable, substantially as described. 8th. The combination with the cord receiving finger having two sides with a space between them and a cord notch, of the latched drawing down hook, substantially as described. 9th. The herein described cord receiving fingers for a netting machine, having two sides and two spring cord supporters within said finger, having projections extending outward through apertures in said sides. 10th. In a netting machine, the combination with cord receiving fingers, drawing down hooks and shuttles equal in number, of a series of cord guides one less in number and operating means therefor, substantially as described. 11th. In a netting machine, the combination with the loop forming devices, of shuttles, two shuttle drivers and operating mechanism for moving one shuttle driver before the loops are formed, and the other for moving the shuttle through the loops, substantially as described. 12th. In a netting machine, the combination with the loop forming devices, including drawing down hooks among its members, of the pivoted hook, cast off bar and operating means, substantially as described. 13th. The combination of a movable finger having fingers thereon, a hook cast off bar, hooks for drawing down the loops, mechanism for raising the hooks with the cord engaged with the hooks, and a tension device constructed to take up the slack of the loop while the hooks are rising and before the cord is cast off the hooks, substantially as described.

No. 41,380. Carving Machine. (*Outil pour sculpter.*)

William Loeffler, Sheboygan, Wisconsin, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. In a carving machine, a tool consisting of a frame, a tracer reciprocative in the frame, and a rotative cutting point having a reciprocation in said frame relative to that of the tracer, substantially as set forth. 2nd. In a carving machine, a tool consisting of a frame having a stationary nut, a differentially threaded spindle having one gauge of thread engaging the nut, a cross head arranged to slide on the frame and engage the other gauge of spindle thread, a rotative cutter having a shank journalled in the cross head, a spring controlled pulley loose on the spindle in opposition to a rigid collar, a friction clutch having a portion thereof fast on said spindle, a tracer normally loose on the aforesaid spindle in opposition to said portion of the clutch, and suitable means for connecting the other portion of said friction clutch with the tracer, substantially as set forth. 3rd. In a carving machine, a tool consisting of a frame having a stationary nut, a differentially threaded spindle having one gauge of thread engaging the nut, a cross head arranged to slide on the frame and engage the other gauge of spindle thread, a rotative cutter having a shank journalled in the cross head, a spring controlled pulley loose on the spindle in opposition to a rigid collar, a hub fast on said spindle, a pulley loose on the hub, cranked stems passed through the latter pulley, friction blocks fast on the stems in opposition to said hub, a tracer having a socket loosely engaging the aforesaid spindle to also oppose the aforesaid hub, a flexible device passed through the tracer, and connected at its ends to the stem cranks, substantially as set forth. 4th. In a carving machine, the combination of a table automatically reciprocative in a longitudinal direction, pattern and blank supports carried thereon, and a tool consisting of a stationary frame, a tracer reciprocative in the frame, and a rotative cutting point having a reciprocation in said frame relative to that of the tracer, substantially as set forth. 5th. In a carving machine, the combination of a table automatically reciprocative in a longitudinal direction, a skeleton frame transversely adjustable on the table, pattern and blank supports mounted on the frame, and a tool consisting of a stationary frame, a tracer reciprocative therein, and a rotary cutting point having a reciprocation in the latter frame relative to that of the tracer, substantially as set forth. 6th. In a carving machine, the combination of a table automatically reciprocative in a longitudinal direction, a tracing and cutting tool, a pivotally adjustable pattern and blank supports carried with the table in opposition to the tool, substantially as set forth. 7th. In a carving machine, the combination of a table, automatically reciprocative in a longitudinal direction, a tracing and cutting tool, and vertically adjustable pattern and blank supports carried with the table in opposition to the tool, substantially as set forth. 8th. In a carving machine, the combination of a table automatically reciprocative in a longitudinal direction, a tracing and cutting tool, and vertically and pivotally adjustable pattern, and blank supports carried with the table in opposition to the tool, substantially as set forth. 9th. In a carving machine, the combination of a table, automatically reciprocative in a longitudinal direction, a pattern and blank carrying mechanism automatically adjustable on the table at predetermined intervals in a transverse direction, and a tracing and cutting tool arranged to oppose the pattern and blank, substantially as set forth. 10th. In a carving machine, the combination of a table automatically reciprocative in a longitudinal direction, a frame automatically adjustable on the table at predetermined intervals in a transverse direction, vertically and pivotally adjustable pattern and blank supports mounted on the frame, and a tracing and cutting tool arranged to oppose the pattern and blank, substantially as set forth.

No. 41,381. Collar Button. (*Bouton de col.*)

David O. Parks, Brooklyn, New York, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. A collar button comprising a base, a hollow stem projecting from the base, a disc or plate secured to the hollow stem and held parallel with the base, and a detachable head plate secured to the outer end of the stem, substantially as described. 2nd. A collar button comprising a base, an outwardly extending stem secured to the base, a disc secured to the stem parallel with the base, a head plate having a hinged connection with the disc and adapted to swing into a position parallel with the disc, and a fastening device to secure the head plate to the outer end of the stem, substantially as described. 3rd. A collar button comprising a base, an outwardly extending stem secured thereto, a disc secured to the stem parallel with the base, a bent arm secured to the disc and extending outward parallel with the stem, a head plate hinged to the arm and adapted to swing opposite the outer end of the stem, and a fastening device to secure the head plate to the stem, substantially as described. 4th. A collar button comprising an outwardly extending hollow stem secured to the base and having a terminal transverse lip, a disc secured to the stem parallel with the base, an arm extending from the disc and nearly parallel with the stem, a head plate hinged to the arm and adapted to swing opposite the outer end of the stem, and a stud on the head plate adapted to enter the stem and having a notch therein to engage the lip of the stem, substantially as described.

No. 41,382. Hot Blast Stove. (*Appareil à air chaud.*)

George Washington McClure and Carl Ansler, both of Pittsburg, Pennsylvania, U.S.A., 24th December, 1892; 6 years.

Claim.—1st. A hot blast stove comprising an outer roofed shell, an inner apertured shell having a crown separated from the outer roof, valved passages leading into the inner shell, and valved passages leading from the space between the roof and crown, substantially as and for the purposes described. 2nd. A hot blast stove comprising an outer roofed shell, an inner concentric shell with a crown separated from the outer roof and having apertures in its sides, an open topped shell within the inner crowned shell, valved passages leading into the innermost shell, and valved passages leading from the space between the roof and crown, substantially as and for the purposes described. 3rd. A hot blast stove comprising an outer roofed shell, an inner shell having a crown, a series of apertures in the lower part of the inner shell, a higher series of apertures alternating therewith, valved passages leading into the inner shell, and valved passages leading from the space between the roof and crown, substantially as and for the purposes described. 4th. A hot blast stove comprising an outer roofed shell, an inner apertured shell having a crown separated from the outer roof, partitions in the flue between the shells and terminating above the apertures, valved passages leading into the inner shell, and valved passages leading from the space between the roof and crown, substantially as and for the purpose described. 5th. A hot blast stove comprising an outer roofed shell, a valved stack flue leading therefrom, an inner concentric shell having a separate crown, apertures in the wall of the inner shell, a combustion chamber within the inner shell, a hot blast outlet, an inlet for fuel leading thereto, and a cold blast outlet terminating in the space between the crown and roof, substantially as and for the purposes described.

No. 41,383. Steam Generator. (*Générateur de vapeur.*)

William John Ranton, Syracuse, New York, State of New York, U. S. A., 24th December, 1892; 6 years.

Claim.—1st. In a steam generator, the combination of an outer water containing shell A, having a fire passage C, opening inwardly from one extremity of its lower wall, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^1, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, substantially as and for the purpose set forth. 2nd. In a steam generator, the combination of an outer water containing shell A, having a fire passage C, opening inwardly from one extremity of its lower wall, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^1, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, and a combustion fluid inlet pipe L, discharging into the former end of said fire flue, substantially as described. 3rd. In a steam generator, the combination of an outer casing B, formed with a combustion chamber b, at one end of its base, and with a fire passage b^1, leading from said combustion chamber to the opposite end of its base, of an outer water containing shell A, having a fire passage C, opening inwardly from the extremity of its lower wall above the inner end of the fire passage, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^1, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, substantially as set forth. 4th. In a steam generator, the combination, with an outer casing B, formed with a combustion chamber b, at one end of its base and with a fire passage b^1, leading from said combustion chamber to the opposite end of its base, of an outer water containing shell A, having a fire passage C, opening inwardly from the extremity of its lower wall above the inner end of the fire passage, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^1, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, and a combustion fluid inlet pipe L, discharging into the former end of said fire flue, substantially as and for the purpose set forth. 5th. In a steam generator, the combination with an outer casing B, formed with a combustion chamber b, at one end of its base, and with a fire passage b^1, leading from said combustion chamber to the opposite end of its base; of an outer water containing shell A, having a fire passage b, opening inwardly from the extremity of its lower wall, above the inner end of the fire passage, a head a^1 at said end of the shell A, a head a at the other end of said shell A, formed with an opening a^3, and arranged in a plane considerably within the outer edge of said extremity of the shell, a smoke box K, a fire flue D, having one end mounted in the opening a^3, and having its other end provided with an opening D^2, registered with the passage C, said fire flue consisting of a pair of plates D^3, D^4, having substantially parallel control portions D^5, D^5, and rounded sides D^6, D^6, and having their longitudinal edges lapped upon each other, and rivets d^5 for securing said edges together, substantially as and for the purpose set forth. 6th. In a steam generator, the combination of an outer water containing shell A, formed with an opening A^2 in the rear end of its lower wall, and provided at its opposite ends with the heads a, a^1, the front heads a being provided with the central opening a^8, and being arranged in a plane considerably within the

outer edge of the shell A, a smoke box K, a fire flue D, having an opening D^2 in its rear end, and having its front end mounted in the opening a^3, said fire flue being composed of a pair of plates D^3, D^4, having substantially parallel central portions D^5, D^5, and rounded sides D^6, D^6, and having their longitudinal edges lapped upon each other, rivets d^5 for securing said edges together, a tube or fire passage b between the openings A^2, D^2, and water circulating tubes G between the portions D^5, D^5, of the first flue D, substantially as specified. 7th. In a steam generator, the combination of an outer water containing shell A, formed with an opening A^2 in the rear end of its lower wall, and provided at its opposite ends with the heads a, a^1, the front heads a being provided with a central opening a^3, and with man holes H, I, above and below said openings, and being arranged in a plane considerably within the outer edge of the shell A, plates h, i, for closing the man holes H, I, and means for temporarily holding the plates h, i in operative position, a smoke box K, a fire flue D, having an opening D^2 in its rear end, and having its front end mounted in the opening a^3, said fire flue being composed of a pair of plates D^3, D^4, having substantially parallel central portions D^5, D^5, and rounded sides D^6, D^6, and having their longitudinal edges lapped upon each other, rivets d^5 for securing said edges together, a tube or fire passage C between the openings A^2, D^2, and water circulating tubes G between the portions D^5, D^5, of the fire tube E, substantially as set forth. 8th. In a steam generator, the combination of an outer water containing shell A, having a fire passage C, opening inwardly from one extremity of its lower wall, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^2, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, a combustion fluid inlet pipe L, discharging into the former end of said fire flue, and a damper N, for regulating the passage of the combustion fluid through the pipe L, substantially as and for the purpose described. 9th. In a steam generator, the combination with an outer casing B, formed with a combustion chamber b, at one end of its base, and with a fire passage b^1, leading from said combustion chamber to the opposite end of its base, an outer water containing shell A, having a fire passage C, opening inwardly from the extremity of its lower wall above the inner end of the fire passage, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^2, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, a pipe O, extending upwardly above a portion of the top wall of the flue D, above the opening D^2, and a fusible plug O, at the upper end of the pipe O, substantially as and for the purpose set forth. 10th. In a steam generator, the combination of an outer water containing shell A, having a fire passage C, opening inwardly from one extremity of its lower wall, a lengthwise fire flue D, supported within the outer shell A, with one end arranged above the fire passage C, and formed with an opening D^2, registered therewith, and the other end arranged to discharge from the opposite extremity of the outer shell, a combustion fluid inlet pipe L, discharging into the former end of said fire flue, an air chamber M, aligned with the pipe L, and formed with an inlet opening m^2, and a damper n, having perforations m, substantially as described.

No. 41,384. Tool for Threading Bottle Necks.

(*Outil pour fileter les goulots de bouteilles.*)

Thomas T. McCoy, Pittsburg, Pennsylvania, U.S.A., 24th December, 1892; 6 years.

Claim. 1st. In a glass shaping tool, the combination of an internally threaded and rotatable ring, and outwardly movable fingers for pressing the glass against such ring, substantially as set forth. 2nd. In a glass shaping tool, the combination of an internally threaded and rotatable ring, outwardly movable fingers for pressing the glass against such ring, and movable jaws arranged to bear upon the neck below the portion to be threaded, substantially as set forth. 3rd. In a glass shaping tool, the combination of an internally threaded and rotatable ring, outwardly movable fingers for pressing the glass against such ring, and a lock for holding the ring as against rotation independent of the fingers, substantially as set forth. 4th. In a glass shaping tool, the combination of an internally threaded and rotatable ring provided with an inwardly projecting rim and outwardly movable fingers for pressing the glass against such ring, substantially as set forth. 5th. In a glass shaping tool, the combination of movable jaws, a supporting ring connected to said jaws, a forming ring loosely mounted in the supporting ring, a washer or annular plate attached to the forming ring and notched on its internal periphery, a pin for engaging the notches and operated by one of the jaws, and movable fingers operated by the jaws, substantially as set forth.

No. 41,385. Chicken Brooder. (*Incubateur.*)

Earl Barney, Schenectady, New York, U.S.A., 24th December, 1892; 6 years.

Claim. 1st. A brooder comprising a main coop or structure having communicating compartments, one serving as an exercising room and the other as a mother, an air inlet connected with the mother compartment and an air outlet opening from the exercising room, a chick supporting tray arranged within the mother, a heating chamber arranged beneath the tray, said chamber having an independent air inlet and outlet and being entirely separated from the mother, and a passage extending from the air inlet of the mother compartment between the lower side of the tray and upper closed wall of the heating chamber to a space between the rear end of the tray and the adjacent wall of the mother compartment, substantially as described. 2nd. A brooder comprising a main coop or structure having communicating compartments, one serving as an exercising room and having a suitable door therein, and the other as a brooder proper or mother, air inlets opening into the brooder proper, air outlets opening from the exercising room, a removable tray arranged within the brooder proper, a heating chamber formed in the lower portion of the brooder proper and entirely shut off from the same, an evaporating pan supported above the heating chamber and between it and the tray, suitable doors for the heating chamber and for the brooder proper, and independent air inlets and outlets for the heating chamber, substantially as described.

No. 41,386. Watchmaker's Tool. (*Outil d'horloger.*)

George W. Cameron, Poplar Bluff, Missouri, 28th December, 1892; 6 years.

Claim. 1st. The combination, with the tool handle and its fork B, having tubular bearings, of a sleeve K, held in the lower bearing, a spring sliding block and screw plug contained in said sleeve, of a sliding sleeve C, fitted in the upper bearing, a spring sliding block and screw threaded plug which are carried by such sleeve, the plug serving to adjust the tension of the spring without changing the position of the block, and the lever mechanism applied to the fork and serving to positively adjust the sliding sleeve and its contained parts up or down, as shown and described. 2nd. The combination, with the toole handle, its fork and a threaded sleeve K, held in the lower bearing, the jewel block spring and screw plug carried by this sleeve, and an eccentric plug applied to the latter for clamping it in place, of a sliding threaded sleeve C carried by the upper bearing, the jewel block and spring contained in such sleeve C, and a screw plug which serves to adjust the tension of the spring without changing the position of the jewel block, a lever mechanism applied to the handle and fork and adapted to positively adjust the sliding sleeve, and a set screw applied to said lever mechanism and serving as a stop to limit its downward movement, substantially as shown and described.

No. 41,387. Paper Feeding Machine.

(*Appareil pour fournir le papier aux presses à imprimer.*)

Robert Burnet, East Orange, New Jersey, U.S.A., 28th December, 1892; 6 years.

Claim. 1st. In an automatic paper feeder, the combination, with a support or table for the pile of sheets, and a device for engaging and carrying the sheets therefrom, located adjacent to the forward edge of said pile, of a feeding device located adjacent to the rear edge of said pile, and in position to engage the several upper sheets, to separate and move the same forward different degrees of nearness to the forwardly located feeding or carrying device, substantially as described and for the purpose set forth. 2nd. In an automatic paper feeder, the combination, with a support or table for the pile of sheets, and a friction feeding roll for engaging and carrying the sheets therefrom, located adjacent to the forward edge of the said pile, of a feeding device located adjacent to the rear edge of said pile, with its engaging surface or ends engaging the rear edge of the latter in the arc of a circle, to separate and move the several upper sheets forward different degrees of nearnes to the forwardly located feeding or carrying device, substantially as described and for the purpose set forth. 3rd. In an automatic paper feeder, the combination of a vertically moving support or table for carrying a pile of sheets, a feed or carrying roll or device located adjacent to the forward edge of the said pile, and a rotating feeding device, consisting of one or more arms supported on a rotating shaft, and provided with curved ends extending in a direction from their line of movement, located in a position to engage the rear edge of said pile, and separate and move the several upper sheets forward different degrees of nearness to the said carrying device, substantially as described and for the purpose set forth. 4th. In an automatic paper feeder, the combination, with a vertically moving table, and mechanism for operating the same comprising a reciprocating rod or shaft, means for operating the latter positively in one direction, and yieldingly in the opposite direction, and means connecting said rod or shaft and the said table, of a pivoted lever having one end extend into the path of the vertically moving table to be engaged thereby and operated to throw its opposite end into engagement with a notch or projection in said reciprocating rod or shaft, substantially as described and for the purpose set forth. 5th. In an automatic paper feeder, the combination, with a support or table for a pile of sheets, a feed roll or device located adjacent to the forward edge of said pile of sheets, and a rotating feeding device consisting of one or more arms, supported in a horizontally adjustable position on a rotating shaft, and adapted to engage the said sheets at the rear edge thereof, substantially as described and for the purposes set forth. 6th. In an automatic paper feeder, the combination, with a friction feeding roll, and a vertically movable table for supporting and carrying a pile of sheets upwardly, of a rotating feeding device adapted for engaging one edge of said pile to move the

sheets into position to be engaged by the friction roll, supported by a horizontally adjustable frame, a driving belt for operating said rotating feeding device, and a belt adjuster or lightner to allow for the adjustment of the rotating feeding device, substantially as and for the purpose set forth. 7th. In an automatic paper feeder, the combination with a friction feeding roll, and a vertically movable table for supporting and carrying a pile of shsets upwardly, of a feeding device consisting of a rotating shaft supported by a horizontally adjustable frame and provided with one or more arms thereon for engaging one edge of said pile to move the sheets into position to be engaged by the friction roll, substantially as and for the purpose set forth. 8th. In an automatic paper feeder, the combination with a support or table for a pile of sheets, a feed roll or device located adjacent to the forward edge of the pile of sheets, and a horizontally adjustable frame supported by the main supporting frame or part thereof and provided with a feeding device supported thereby adapted for engaging the rear edge of said pile of sheets, substantially as described and for the purpose set forth. 9th. In an automatic paper feeder, the combination with a friction feeding roll and a separator roll located beneath the same with their adjacent faces rotating in opposite directions, and a vertically movable table adapted to support and move a pile of sheets upwardly; of a feeding device, consisting of a rotating shaft carrying one or more arms, located adjacent to the rear edge of said pile for engaging the several upper sheets to separate and move the same forward different degrees of nearness to the said feeding and separating rolls, the friction feeding roll being rotated in a direction to draw the upper sheet forward from the pile, and the separator roll being rotated to push the under sheets backward, substantially as and for the purpose set forth. 10th. In an automatic paper feeder, the combination of a feeding roll or device, a vertically movable table for supporting and carrying a pile of sheets upwardly to be engaged by the said feeding roll or device, and having connection with a revolving drum or wheel to be operated thereby through the medium of a chain or other flexible connection, and mechanism for operating said drum, consisting of an operating shaft provided with a cam or eccentric thereon, a reciprocating rod operated by the latter and adapted to operate a pawl carried thereby to cause the same to engage with a ratchet wheel located on a vertical shaft to rotate the latter and communicate motion to the said rotating drum through the medium of connecting gearing, substantially as and for the purpose set forth. 11th. In an automatic paper feeder, the combination with a feed roll, of a vertically movable table adapted for supporting and carrying a pile of sheets upward to be engaged by the said feed roll, and operated by a revolving drum or wheel through the medium of a chain or other flexible connection, mechanism for operating said drum or wheel, consisting of a vertically arranged shaft rotated by the main operating shaft through the medium of connecting mechanism, and having connection with the said drum or wheel through the medium of connecting gearing, and a clutch for adjustably connecting or disconnecting the said drum and its operating mechanism, substantially as and for the purpose set forth. 12th. In an automatic paper feeder, the combination with a feeding device and a vertically movable table for supporting and carrying a pile of sheets upwardly to be engaged by aid feeding device, of an edge guide for said sheets, consisting of a supporting arm or hanger supported in a laterally adjustable position above the said table on a shaft forming part of the supporting frame, and provided with one or more downwardly hanging arms pivotally connected therewith, adapted to move outwardly from a vertical line when engaged by the upwardly moving table, substantially as described and for the purpose set forth. 13th. In an automatic paper feeder, the combination, with a vertically moving table adapted to support and move a pile of sheets upwardly, of a friction feeding roll and a separator roll located beneath the same with their adjacent faces rotating in opposite directions, the friction feeding roll being rotated in a direction to draw the upper sheet forward from the pile, and the separator roll being provided with a harder and smoother surface than the friction roll, and rotated in a direction to separate and push the under sheets backward, substantially as described and for the purpose set forth. 14th. In an automatic paper feeder, the combination with a vertically moving table having connection with a revolving drum or wheel, to be operated thereby through the medium of a chain or other flexible connection, of mechanism for operating said drum or wheel, consisting of an operating shaft provided with a cam or eccentric thereon, a reciprocating rod operated by the latter and adapted to operate a pawl carried thereby to cause the same to engage with a ratchet wheel located on a shaft to rotate the latter and communicate motion to the rotating drum through the medium of connecting gearing, and a pivoted lever operated by contact with the vertically moving table to engage said reciprocating rod to stop the same, and the connecting table operating mechanism, substantially as described and for the purpose set forth. 15th. In an automatic paper feeder, the combination with a feeding device and a vertically movable table for supporting and carrying a pile of sheets upwardly to be engaged by said feeding device, of an edge guide for said sheets, consisting of supporting arm or hanger, provided with one or more arms pivoted thereto, and supported in a laterally adjustable position above the said table on a shaft forming part of the supporting frame, by means of two hinged clamping jaws, adapted to be adjustably clamped together by a lever having a double cam surface operating on a corresponding surface on one of said jaws and having connection with the other jaw by a connecting pin or bolt, substantially as described and for the purpose set forth. 16th. In an automatic paper feeder, the combination of a feed roll or device, a vertically movable table operated by a revolving drum or wheel having connection therewith through the medium of a chain or other flexible connection, and mechanism for operating said drum or wheel, consisting of an adjusting and rotating shaft operated by the driving shaft through the medium of a reciprocating rod and connecting mechanism, and having connection with the said drum or wheel to communicate motion thereto through the medium of suitable gearing, substantially as described and for the purpose set forth.

No. 41,388. Buckle. (*Boucle.*)

George M. Aylsworth, Collingwood, Ontario, Canada, 28th December, 1892; 6 years.

Claim.—1st. The combination, with a buckle frame having side wings, a flat web plate between the wings, and a transverse pintle seated at its ends in the wings, of a keeper plate having a scroll and embracing said pintle, a spring on the pintle pressing on said scrolled end of the keeper plate, and a tongue projecting at a right angle from the keeper plate and entering a perforation in the web plate of the buckle frame, substantially as described. 2nd. The combination, with a buckle frame formed of sheet metal, having opposite wings and an intervening web plate, and a transverse pintle secured at its ends in the wings, of a keeper plate having a scrolled end embracing the pintle, coiled springs on the pintle between the wings and the scrolled end of the keeper plate, an integral loop connecting the springs and pressing on the keeper plate, the ends of the springs engaging the frame wings, and a tongue on the keeper plate adapted to penetrate a perforation in the web plate and enter a hole in a strap passed between the web plate and keeper plate, substantially as described.

No. 41,389. Stove Pipe. (*Tuyau de poêle.*)

William Arthur Kemp, Toronto, Ontario, Canada, 28th December, 1892; 6 years.

Claim.—1st. A stove pipe consisting of a blank having formed along each of its opposite meeting edges a fold, the fold along one of its meeting edges cut away at or near one end, and a notch formed in such cut away portion, into which notch enters the fold along the other opposite edge, the cut away portion of the said edge adapted to overlap the folded portion of the other edge, the said folded portions adapted to hook one into the other, substantially as described. 2nd. A stove pipe comprising a blank having formed along each of its opposite meeting edges a fold, which folds are adapted to hook one into the other, the fold along one of the opposite meeting edges having a depressed portion folded at or near one end, into which is adapted to sink the corresponding portion of the opposite fold when the said folds are put together, substantially as described. 3rd. A stove pipe comprising a blank having formed along each of its opposite meeting edges a fold, the said folds adapted to be hooked together, the fold along one of said edges cut away at or near one end, a notch formed in said cut away portion, the fold along the other edge and at the end opposite to the said notch having formed therein a depressed portion, into which is adapted to sink the corresponding portion of the opposite fold, the said cut away portion adapted to overlap the fold along the opposite edge, substantially as and for the purpose set forth. 4th. A stove pipe comprising a blank having formed along each of its opposite meeting edges a fold, a notch formed in one of the opposite meeting edges at or near one end, through which notch passes the opposite meeting edge, the folds along said meeting edges adapted to be hooked one into the other, and the said opposite meeting edges adapted to be slidden along each other to permit of the one of the opposite meeting edges being passed through the notch in the other opposite meeting edges, substantially as and for the purpose described.

No. 41,390. Kiln. (*Four.*)

William Johnson, Leeds, York, England, 28th December, 1892; 6 years.

Claim.—1st. The combination, with a continuous kiln consisting of parallel tunnels A^1, comprising a series of chambers, and a hot air flue N, arranged in the outer wall of said kiln, of the main central flue E, the by flues D, extending from either side of said main flue and terminating in recesses F, formed in the outer wall of each chamber for conveying off the products of combustion, and dampers J for closing said by flues, as set forth. 2nd. The combination, with a continuous kiln consisting of parallel and communicating tunnels A^1, comprising a series of chambers, and a hot air flue N, arranged in the outer wall of said kiln, and the main central flue E, of the by flues D, conveying off the products of combustion extending across the tunnel of the kiln from either side of said central flue, and arranged in an inclined direction relatively to the main flue, recesses F, formed in the outer side walls, and vertically operated dampers J, for closing said by flues, as and for the purpose specified. 3rd. In a kiln, the combination, with the continuous parallel tunnel A^1, the central flue E, the side recesses F, formed in the walls of said kiln, and flues D, connecting said recesses and the main flue from each side of the main flue, of the surrounding hot air flue N, located in the wall of the kiln near its top, and having lateral connections R, with the chambers of the kiln, and vertically operated dampers S for said lateral connections, as set forth.

No. 41,391. Glass Vessels and Method of Making Same. (*Verrerie et mode de fabrication.*)

William K. Elson, Martin's Ferry, Ohio, U.S.A., 28th December, 1892; 6 years.

Claim.—1st. An improved article of manufacture, consisting of a glass vessel having a pressed neck and blown body. 2nd. An improved process of making articles of glassware, which consists in pressing the neck in a separate mould, withdrawing the pressed neck from such mould and introducing it into a second mould, and in blowing the body of the article within the second mould, so as to weld it to the neck. 3rd. An improved process of making articles of glassware, which consists in pressing the neck in an inverted position with a flared lower portion, in placing such neck within another mould in an upright position, in blowing the body of the article within such second mould so as to effect a weld between the body and the flared portion of the neck, and the bringing the waste from such body up through the interior of the neck so as to be welded thereto, and finally in grinding and polishing the neck, substantially as described. 4th. An improved process of making articles of glassware, which consists in pressing the neck in an inverted position in introducing a pair of tongs E, substantially as described, within the neck, in transferring the neck to a second mould, and in leaving the tongs within the mould, whereby the tongs act as a shield, in introducing a blowing tube within the second mould, and blowing the body of the article so as to effect a weld between the body and the pressed neck, substantially as described.

No. 41,392. Game Counter. (*Marque de jeu.*)

Philip Hale, Denver, Colorado, U.S.A., 28th December, 1892; 6 years.

Claim.—In a game-counter, the combination of a back or support having slide strips therein bearing numerals thereon, a front plate over said strips having openings therein, and a transversely adjustable slide carried by said front plate and provided with a series of openings to align with the aforesaid openings, substantially as described.

No. 41,393. Folding Hay Rack. (*Ratelier à foin.*)

Eli White, Sodus, New York, U.S.A., 28th December, 1892; 6 years.

Claim.—1st. In a wagon rack, the side sections hinged to clamps, said clamps resting on the sideboards of the box and embracing their exterior and having members extending down in contact with and inside the box sides through its bottom, and means for fastening said members below the box, whereby the tendency of the load to spread the box laterally is resisted, substantially as set forth. 2nd. In a wagon rack, the side sections hinged to clamps, said clamps resting on the side boards of the box and embracing their exterior and having members extending down in contact with and inside the box through its bottom, and means for fastening said members below the box, whereby the tendency of the load to spread the box laterally is resisted, said side sections being made shorter than the box, substantially as set forth. 3rd. In a wagon rack, oppositely placed clamps fitting the sides of the wagon box, and having a U-shaped member extending below the bottom of the box, and a bolt passing through the sides of the box and within the U-shaped members of the clamp, whereby the box is bound together and the clamps are secured against vertical and sidewise movement on the same, substantially as set forth. 4th. In a wagon rack, oppositely placed clamps fitting the sides of the wagon box, and having a U-shaped member extending below the bottom of the box, and a bolt passing through the sides of the box and within the U-shaped members of the clamp, and braces 6, secured to said bolt and to the sides of the box, whereby the box is bound together and the clamps are secured against vertical and sidewise movement on the same, substantially as set forth. 5th. For use on a wagon box rack, the clamp adapted to fit the box side, having its inner member extended down and secured below the box bottom and having its outer member composed of two parts 11, combined, with an elbow pivoted between the upper ends of said parts and having an arm 12, between them, both the clamp and the elbow being adapted to bear on the outside of the box, substantially as set forth.

No. 41,394. Device for Cleaning Cisterns.

(*Appareil pour nettoyer les citernes.*)

Orren J. Searles, George F. Jackson and Frank M. Gustin, all of Fort Madison, Iowa, U.S.A., 28th December, 1892; 6 years.

Claim.—1st. The combination of the cylindrical shell, the bottom having an opening provided with an upwardly opening valve, a yoke, the legs of which extend through bearings on opposite sides of the head of the cylinder and are attached to opposite sides of the bottom, means for locking the cylinder and the bottom together, and a vertically sliding rod mounted in bearings upon the outer side of the cylinder and terminating at its upper end in a goose neck carrying a stopper or valve having a seat in the top of the cylinder, substantially as set forth. 2nd. In a device for cleaning cisterns, the combination of the yoke, the cylindrical shell mounted to slide upon the legs of said yoke, the bottom having a valved opening secured to the lower ends of said legs, a sleeve or ferrule at the upper end of said yoke having an L-shaped slot, a handle extending through the sleeve or ferrule and having a notch extending through the slot in the latter, a rod as 17, connecting said handle with the top of the cylinder, and a rod mounted slidingly upon the outer side of the cylinder and carrying a stopper or valve having a seat in the top of said cylinder, substantially as and for the purpose set forth. 3rd. In a device for cleaning cisterns, the combination with a shell or casing, the bottom of which has an opening provided with an upwardly opening valve and the top of which has an opening or valve seat, of a valve or stopper seated in the latter opening and mounted upon a vertically sliding rod which is mounted exteriorly upon the shell or casing and extends below the bottom of the latter, a yoke secured to the bottom and extending through bearings at the top of the cylinder, a ferrule at the upper end of said yoke, a handle extending through the said ferrule and adapted to be locked therein by a bayonet joint, and a rod, as 17, connecting said handle with the top of the cylinder, substantially as and for the purpose herein set forth.

No. 41,395. Air Cock. (*Robinet à air.*)

Ovide Parent, Montreal, Quebec, Canada, 28th December, 1892; 6 years.

Claim.—The combination of the casing in three parts, B F and L, the support M, the guide D, the floating ball K, the rod H, the opening E and G and the hole O, substantially as and for the purpose set forth.

No. 41,396. Sulky. (*Désobligeante.*)

Sterling Elliott, Newton, Massachusetts, U.S.A., 28th December, 1892; 6 years.

Claim.—1st. A trotting sulky provided with a frame, seat, shafts or pole, with wheels less in diameter than the distance between the shaft and the ground, substantially as set forth. 2nd. The combination in a trotting sulky of a frame, shaft or pole and seat, and wheels less in diameter than the distance between the shafts and the ground, and provided with elastic tires, substantially as described. 3rd. The combination, with a frame, shafts or pole, and seat of a sulky, of wheels less in diameter than the distance between the shaft and the ground, and provided with pneumatic tires, substantially as described. 4th. In a sulky, the seat, shaft and axle having axle spindles, combined with wheels, and wheel supports depending from said axle spindles, substantially as described. 5th. In a sulky, the seat, shafts and axle having axle spindles a^1, combined with wheels and forks supporting them depending from the axle spindles a^1, substantially as described. 6th. In a sulky, the seat, shafts and axle having axle spindles a^1, combined with wheels and forks supporting them, and sockets or frames to which the arms of said forks are connected, said sockets being constructed and arranged to be held in position on the said axle spindles a^1, substantially as described. 7th. In a sulky, the seat, shafts and axle having spindles a^1, combined with wheels and forks supporting them depending from the axle spindles a^1, and means, substantially as described, for restraining said forks from rotation on said axle spindle, substantially as described. 8th. The dependant wheel, supports, frames or axle, combined with the shafts or pole and braces w, substantially as set forth.

No. 41,397. Wire Fence Rail.

(*Traverse pour clôtures en fil de fer.*)

Othneil Preston, Hornellsville, New York, U.S.A., 28th December, 1892; 6 years.

Claim.—1st. As a new article of manufacture, a wire fence rail composed of four wires, two exterior and two interior, the interior wires being alternately united or twisted with each other and with the exterior wires to form a single rail having hexagonal and semi-hexagonal meshes or openings, substantially as and for the purpose described. 2nd. A wire fence rail composed of the wires A and A^1, parallel with each other, in combination with the wires B and B^1, wound around each other at regular intervals in the space between the wires A and A^1, thence carried diagonally outward to the outer wires and back between the intervals, and intertwined with the exterior wires A and A^1 at the points of contact, whereby the reticulations formed by the meshes are hexagonal and semi-hexigonal in form and the rail thereby braced against vertical strain, substantially as described.

No. 41,398. Adjustable Seat for Stools, &c.

(*Siège mobile pour bancs, etc.*)

George John Waldvogel, Toledo, Ohio, U.S.A., 28th December, 1892; 6 years.

Claim. 1st. In vertically adjustable seats for stools and chairs, a tubular standard formed with annular recesses or grooves, a seat, a telescopic tubular seat section secured thereto, spring actuated dogs in the tubular seat section adapted to normally engage in the annular recesses of the tubular standard, and a lever for withdrawing the dogs to allow of raising or lowering the seat. 2nd. In adjustable seats for stools and chairs, a base portion, a tubular standard in the same, having annular recesses, a seat section having a tubular telescopic section, a casing on the lower portion of said section, dogs loosely secured in the casing and means for operating the dogs to retract or project the same, to engage the recesses to hold the seat in adjustment or allow of adjusting the same. 3rd. In ad-

justable seats for stools and chairs, a loose portion, a tubular standard therein having annular recesses, a seat section having an annular support, a tubular telescopic section secured in the support, a casing on the lower portion of said section, a rod journalled in the tubular section, journalled at the top in the annular support, and at the bottom in the casing, dogs loosely secured in the casing, a casting on the rod having projections to engage the dogs, a lever to operate the rods to withdraw the dogs, and a spring to project the same.

No. 41,399. Journal Bearing. (*Coussinet de tourillon.*)

Charles E. Stanfield, Truro, Nova Scotia, Canada, 28th December, 1892; 6 years.

Claim.—1st. The combination in the running gear of a railroad car, of the axle B, the balls *b*, the rings *c* and *c*, substantially as and for the purpose herinbefore set forth. 2nd. In the running gear of a railroad car, the combination of the box *a*, the rings *c* and *c*, and the balls *b*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination in a railroad car, of the rings *c* and *c*, and the balls *b*, substantially as and for the purpose hereinbefore set forth. 4th. In the running gear of a railroad car, the combination of the cap *d*, and the axle B, substantially as and for the purpose hereinbefore set forth.

No. 41,400. Art of and Apparatus for Crowning Floor Joints. (*Art et appareil pour le couronnement des joints de plancher.*)

John Friedrichs, St. Louis, Missouri, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. The method herein described for crowning floor joists, which consists in subjecting the same to a deflecting strain, and levelling one surface while so subjected, substantially as and for the purpose described. 2nd. The method herein described for crowning floor joists, which consists in supporting the same at their ends, and planing, or otherwise levelling, the upper surfaces of the same, substantially as and for the purposes described. 3rd. In a machine for crowning floor joists, the combination with a levelling cutter, of a supporting and carrying platform, and means for deflecting the stock while it is being operated on by the cutter, substantially as and for the purposes described. 4th. In a machine for crowning floor joists, the combination with the cutter of a supporting and carrying platform, and means supported directly by and carried with the platform, by which the joists are supported at their ends only, substantially as and for the purposes described. 5th. In a machine for crowning floor joists, the combination with an adjustable cutter, of a supporting and carrying platform, provided with means for supporting the stock away from the platform, thereby permitting the joists to be deflected while being cut, substantially as and for the purposes described. 6th. As a new article of manufacture, a crowned floor joist, bellied on one side, said bellied portion being formed by planing, or otherwise levelling, one surface of the joist while it is being deflected from the normal, substantially as and for the purposes described.

No. 41,401. Stopper for Bottles, &c.

(*Bouchon de bouteilles, etc.*)

Carl Hanisch, Seesen a Harz, Prussia, German Empire, 29th December, 1892; 6 years.

Claim.—1st. A stopper for bottles, jars and other similar vessels, consisting of a cap *d*, having two wings *l*, *l*, and two points *s*, *s*, engaging with two shaped slots formed in the substance of the neck or upper part of the vessel, constructed substantially as hereinbefore described, and as illustrated by the accompanying drawings. 2nd. A stopper for bottles, jars and other similar vessels, consisting of a cap *d*, having two wings *l*, *l*, and two points *s*, *s*, engaging with two L-shaped slots formed in the substance of the neck or upper part of the vessel, and a soft elastic or compressible substance between the cap and the mouth of the vessel, constructed substantially as hereinbefore described, and as illustrated by the accompanying drawings.

No. 41,402. Method of Extracting Gold and Silver from Ore. (*Méthode d'extraire l'or et l'argent des minerais.*)

Henry Parkes, Dulwich, Surrey, England, John C. Montgomerie, Water of Ayr, and The Tam O'Shanter Hone Works, Dalmore, Stair, County of Ayr, Scotland, 29th December, 1892; 6 years.

Claim.—1st. The herein described method of extracting gold and silver from ores or compounds containing the same, consisting in treating the ore with cyanide of potassium in the presence of oxygen under pressure. 2nd. The herein described process for extracting gold and silver from ores or compounds containing the same, by an uninterrupted operation consisting in treating the ore with cyanide of potassium in the presence of oxygen under pressure and subjecting the same to agitation, the ore being subsequently filtered and washed and the precious metals recovered from the liquor by precipitation or other known means.

No. 41,403. Window Ventilator.

(*Ventilateur pour croisées.*)

George Wallace Greig, Chicago, Illinois, U. S. A., 29th December, 1892; 6 years.

Claim.—1st. In a store or show window, a ventilating board having air openings in its edge, arranged immediately adjacent the surface and above the lower edge of the glass, and a cap for holding the upper edge of the glass provided with air openings allowing the passage of air from the surface of the glass over and in contact with its edge whereby a movement of the admitted external air along and immediately in contact with the surface of the glass is permitted, substantially as and for the purpose explained. 2nd. In a store or show window, a ventilating board having air openings in its edge, arranged immediately adjacent the surface and above the lower edge of the glass, a strip adjustably secured to said ventilating board to regulate the flow of air through said openings, and a cap for holding the upper edge of the glass, provided with air openings allowing the passage of air from the surface of the glass over and in contact with its edge, whereby a movement of the admitted external air along and immediately in contact with the surface of the glass is permitted, substantially as and for the purpose explained.

No. 41,404. Gas Stove. (*Poêle à gaz.*)

Thomas Batty, Colchester, Essex, England, 29th December, 1892; 6 years.

Claim.—1st. The construction of an atmospheric gas stove of globular or other shape, easily attached like an ordinary globe to any gas fitting, and having a regenerative expansion chamber placed above and in contact with the burners, for the purpose of heating and warming rooms, substantially as herein described and shown upon the drawings. 2nd. The application of the same mode of construction to other gas fires, and to all kinds of gas heating and cooking stoves, by placing a regenerative expansion chamber in contact with and above the burners, substantially as herein described and shown on the drawings.

No. 41,405. Wood Working Machine.

(*Machine à travailler le bois.*)

Stephen Hurteau, Montreal, Quebec, Canada, 29th December, 1892; 6 years.

Claim.—1st. In a wood working machine, the combination of the legs A and B, bed plate C, pedal F, bolt E, connecting rods H H, shaft G, pulleys T o^1 and o^2, and strap r^1 with the movable chuck end c^2, made as shown in the drawings, centre *c* provided with the pulley c^4, emery wheel c^6, and strap *o*, the whole forming a lathe, substantially as described and for the purposes set forth. 2nd. In a wood working machine, the combination of the legs A and B, bed plate C, pedal F, bolt E, connecting rods H H, shaft G, pulleys T, o^1 and o^2, and strap r^1, with strap O, pulley *l*, table L, planer l^4, circular saw l^5, and bolt l^6, substantially as described and for the purposes set forth. 3rd. In a wood working machine, the combination of the legs A and B, bed plate C, pedal F, bolt E, connecting rod's H H, shaft G, pulley J, and arm V, with the pulleys p^8 and p^9, connecting rod p^4, pieces *p* and p^1, guides p^2 and p^3, saw P, levers R and r^5, fulcrumed to piece r^1 joined to arm V, rod r^4, lever r^7, U-piece r^6, hinged table M, bellows *a*, pieces a^2 and a^1, and rubber tube a^3, the whole forming a jig saw, substantially as described, and for the purposes set forth. 4th. In a wood working machine, the combination of the legs A and B, bed plate C, pedal F, bolt E, connecting rods H H, shaft G, pulley K, strap X, and arm V, with the pulleys w^6 and w^7, strap w^5, pulley w^8, U-frame T hinged at *t*, wheels *w*, w^1 and w^2, band saw W, hinged table M, spring ketches t^1, adjusting device composed of the screw w^{17}, frame w^{11}, guides w^{12} and w^{13}, and set screws w^{14}, the whole forming a band saw, substantially as described and for the purposes set forth. 5th. In a wood working machine, the combination of the legs A and B, bed plate C, pedal F, bolt E, connecting rods H H, shaft G, pulleys K, *x* and x^1, and strap X, with the pulleys x^4, and x^5, set screw x^6, strap x^3, pulley *z*, spindle Z, having the annular square grooves *y*, frame Y, wheel S, stopper s^3, handle s^2, sand papering disc z^1, tool holder *q*, for insertion of boring tool, shaper, etc., and hinged table M, substantially as described and for the purposes set forth. 6th. In a wood carving machine, the combination of a bed plate on two braced legs, with a lathe, circular saw and planer, jig saw, band saw and boring device, sand papering device and shaper, substantially as described and for the purposes set forth.

No. 41,406. Barrel. (*Baril.*)

John J. Magee, London, Ontario, Canada, 29th December, 1892; 6 years.

Claim.—1st. In combination with the body A, of a barrel or keg, the interior hoop or hoops D, substantially as shown and described, and for the purpose specified. 2nd. In combination with the body A, of a barrel or keg, the lining C, and interior hoops D, substantially as shown and described and for the purpose specified. 3rd. The body A, the outside hoops B, heads F, and hoops E and D^1, in combination with the lining C, and hoops D, substantially as shown and described and for the purpose specified.

No. 41,407. Bulletin Board. (*Tablette de bulletin.*)

Albert J. Taplin, Chicaco, Illinois, U.S.A., 29th December, 1892; 12 years.

Claim.—1st. A bulletin board having a series of uniform parallel grooves B, in the front service, and slips D, fitting removably to slide into said grooves, whereby said strips are retained independently and adjustably, and capable of removal and consecutive arrangement, as set forth. 2nd. A bulletin board having one or more columns of uniform T-shaped parallel grooves B in the front, and adapted to receive slips D, adjustably, as and for the purpose set forth.

No. 41,408. Shield for Trousers.

(*Plastron pour pantalons.*)

John H. Prutzman, Plankinton, South Dakota, U.S.A., 29th December, 1892; 6 years.

Claim.—As an improved article of manufacture, a shield for trousers, adapted to be applied at the lower portion of the fly, and consisting of a heart-shaped piece of moisture proof material having an opening between the oppositely located duplicate portions, provided with an upper converged portion, and the device entire provided with an edge binding of tape, substantially as described.

No. 41,409. Freezer for Ice Cream.

(*Congélateur de crême.*)

John E. Newhouse, Magnetic Springs, Ohio, U. S. A., 29th December, 1892; 6 years.

Claim.—1st. In an ice cream freezer, the combination, with the outer casing and the inner freezing chamber, the latter having a curved bottom and the end walls of the chamber and casing having vertical slots terminating at their lower ends in bearings, said chamber and casing combining to form an intermediate ice space and provided with a discharge, of a hollow freezing cylinder provided at one end with a hollow axle and at its opposite end with an axle, a frame comprising opposite side and end bars mounted on the axles and adapted to revolve, beaters extending from the frame, and means for rotating the frame in one direction and the cylinder in the opposite direction, substantially as specified. 2nd. In an ice cream freezer, the combination, with the outer casing and the inner freezing chamber, the latter having a curved bottom and the end walls of the chamber and casing having vertical slots terminating at their lower ends in bearings, said chamber and casing combining to form an intermediate ice space and provided with a discharge, of a hollow freezing cylinder provided at one end with a hollow axle and at its opposite end with an axle, a frame comprising opposite side and end bars, mounted on the axles, a sleeve extending from one end of the frame and receiving loosely the slotted axle, pulleys and belts for driving them in opposite directions, substantially as specified. 3rd. In an ice cream feezer, the combination, with the outer casing comprising opposite slotted end walls, a curved connecting bottom, an inner casing located in the outer casing and provided in the bottom with slotted end walls, and with a discharge communicating with that of the inner casing, of a hollow cylinder having opposite axles extending from its ends, one of said axles being hollow, a beater frame loosely mounted on the axles, means for operating the frame and cylinder in opposite directions, a tray surmounting the freezing chamber and provided with a series of perforations, and a cover for the tray, substantially as specified. 4th. In an ice cream freezer, the combination, with the outer casing and the inner freezing chamber, the same having a discharge and forming an intermediate ice space, the end walls of the casing and chamber being slotted and having their edges connected, of a hollow freezing cylinder having opposite axles, one of which is hollow, mounted in the slots, means for revolving the cylinder, and opposite blocks having their edges grooved to embrace the edges of the slots of the end walls, and having their lower ends recessed to form half bearings, substantially as specified. 5th. In an ice cream freezer, the combination, with the outer casing, the inner freezing chamber, the same having a discharge, and a superimposed distributing device, the end walls of the casing and chamber being provided with bearings, of a hollow freezing cylinder having axles, one of which is hollow, a rectangular frame, the end bars of which are provided with bearing openings for the reception of the axles, means for rotating the cylinder and frame in opposite directions, and inclined blades or paddles, a series of which extend inwardly from one of the side bars of the frame and terminate adjacent to the surface of the cylinder, a second series of which extend upwardly from the remaining side bar of the frame, and extend adjacent to the curved inner surface of the refrigerating chamber, substantially as specified.

No. 41,410. Journal Box. (*Boîte de tourillon.*)

John Z. Nyquist, Clinton, Iowa, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. A journal box having its base or bed plate and its cap plate provided with parallel contacting ears provided with registering or intersecting bolt openings, the openings in one member being elongated to provide for adjustment, substantially as specified. 2nd. A journal box having its base or bed plate and its cap plate provided with parallel ears arranged to lie in contact and provided with inclined intersecting slots, said slots being engaged in pairs by through bolts, substantially as specified. 3rd. In a journal box, the combination, with a base or bed plate provided with perpendicular ears having inclined slots, of a cap plate provided with lateral ears in contact with the ears upon the bed plate and having slots inclined to intersect the beforementioned slots and bolts engaging said intersecting slots, substantially as specified. 4th. In a journal box, the members provided with parallel ears adapted to lie in contact and having oppositely inclined slots which register with each other at different points, according to the proximity of the members, substantially as specified. 5th. A journal box having independent members provided with parallel ears having oppositely inclined slots engaged by adjusting bolts, substantially as specified.

No. 41,411. Handle for Saws. (*Manche de scies.*)

Edward W. Miller, Toronto, Ontario, Canada, 27th December, 1892; 6 years.

Claim.—1st. In a detachable saw handle, the sleeve nut having a hook formed on its side and adapted to engage a hole in a saw blade, substantially as shown and described. 2nd. In a detachable saw handle, the stud or rest pins secured in the handle and having grooves in their heads arranged in continuation of one another and the handle, substantially as shown and described. 3rd. In a detachable saw handle, the tension rod having a T-head at one end and threaded at its opposite end, substantially as shown and described. 4th. In a detachable saw handle, the combination of the tension rod having a T-head at one end and threaded at its opposite end, and the sleeve nut tapped or internally threaded to fit on said tension rod and a hook formed on its side, said hook being an integral part of said nut, substantially as shown and described. 5th. In a detachable saw handle, the combination of the T-headed tension rod having a thread thereon as specified, the sleeve nut adapted to fit the threaded end of said tension rod and having a hook thereon as specified, and the stud or rest pins having ground heads to receive the end of the saw blade, substantially as shown and described.

No. 41,412. Furnace for Metallurgical Operations.

(*Fourneau pour les opérations métallurgiques.*)

John Nicholas Lanth, St. Louis, Missouri, U.S.A., 29th December, 1892; 6 years.

Claim.—A furnace for metallurgical operations, constructed as herein described, with a fire chamber, a hearth for the metal, a bridge wall interposed between the fire chamber and the hearth, a deflecting wall at the rear, an exit to the stack below the rear deflecting wall, and a roof inclined upward from the front wall of the fire chamber to the rear deflecting wall, whereby the gases of combustion are carried freely over the bridge and through a combustion chamber of constantly increasing area to the rear of the furnace and by contact with the rear deflecting wall, are returned and more thoroughly mingled with the air and consumed before passing to the stack, as explained.

No. 41,413. Machine for Removing Lint from Cotton Seed. (*Machine pour enlever la bourre de coton des graines du coton.*)

Jefferson M. Gardner, Nashville, Tennessee, U.S.A., 29th December, 1892; 6 years.

Claim.—A delinting machine, comprising a series of discs or wheels of emery, or of some other suitable substance, arranged upon a shaft, and a series of projecting arms mounted contiguous to the discs, so arranged that the arms in revolving pass between the discs, the arms being arranged in a chamber into which the disks project, substantially as described. 2nd. A delinting machine, comprising a series of discs, of emery or of some other suitable substance, mounted upon a revoluble shaft, and a series of arms spirally arranged upon a shaft mounted contiguous to the discs, and so arranged that the arms project between the discs, substantially as described. 3rd. A machine for delinting cotton seed, comprising a series of discs of emery or of some other suitable substance, two series of spiral arms suitably mounted and arranged in such position that their arms project between the discs, the arms of the different series being oppositely arranged, whereby means for conveying the cotton seed in opposite directions is provided, substantially as described. 4th. A cotton seed delinter, comprising a series of discs, of emery or the like, mounted upon a revolving shaft, two chambers arranged one above the other, and so arranged that each chamber is entered by each disc of the series, a shaft mounted in each chamber and provided with spirally arranged arms passing between the discs the arms in each chamber being oppositely arranged, one chamber being provided with an inlet opening and the other with an outlet opening, and a passage between the chambers, whereby the seed may pass from one to the other, substantially as described. 5th. A cotton seed delinting maching, comprising a series of discs of emery or of some other suitable substance, a shaft provided with arms projecting between the discs and an exhaust fan placed in the casing with the discs, whereby the lint adhering to the discs, is removed, substantially as described. 6th. A cotton seed delinting machine, comprising a series of discs of emery mounted upon a revoluble shaft, a chamber for containing seed arranged contiguous to the discs, openings through which the discs project into the chamber, and a shaft mounted in the chamber and provided with a series of

arms projecting between the discs, the side of the chamber through which the discs project, being formed by ribs, arranged on each side of each disc, a suitable distance from the disc to allow lint to be carried between the two, and at the same time to prevent passage of the cotton seed, substantially as described. 7th. A cotton seed delinting machine, comprising a series of discs, of emery or of some other suitable substance, mounted upon a revoluble shaft, a chamber for containing the cotton seed, and into which the discs project, a hollow shaft mounted in the chamber and provided with a series of projecting arms, and with a series of openings through which air is permitted to pass to the chamber, and a suction fan arranged adjacent to the chamber, substantially as described.

No. 41,414. Machine for Sawing Staves.

(*Machine à scier les douelles.*)

William Merrill, Saginaw, Michigan, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. In a stave sawing machine, the combination, with a band saw and means for carrying and for operating the saw, of a circular rotary table having its periphery in proximity to the side of the saw, means for securing a series of stave bolts to the upper surface of its outer rim, and mechanism for imparting motion to the table, substantially as set forth. 2nd. In a machine for sawing staves, the combination, with the band saw and means for carrying and operating the saw, a circular horizontal table, and means for supporting the table with its periphery in proximity to the side of the cutting portion of the saw, and provided on the upper surface of its outer rim with a reries of spaces to receive the stave bolts, a series of clamps above the said spaces, and mechanism for operating the clamps to impinge upon the surface of the stave bolts, substantially as set forth. 3rd. In a machine for sawing staves, the combination with a band saw, and means for carrying and imparting motion to the saw, a rotary horizontal table, and means for supporting the table with its periphery in proximity to the cutting portion of the saw, and provided on its rim with a series of spaces to receive the bolts, of the curved clamps across the said spaces, and provided on their outer edges with downwardly projecting teeth and at their ends with downwardly turned portions for guiding and supporting the clamps, and means for automatically operating the clamps to impinge upon the stave bolts and to release the same, substantially as and for the purpose set forth. 4th. The combination in a stave sawing machine with a band saw and means for carrying and imparting motion to the saw, a rotary table carrying on its outer rim a series of stave bolts with their edges projecting over its peripheral edge, devices for clamping the bolts to the table, means for automatically releasing the clamps at a predetermined point, of a curved gauge piece permanently secured outside of the table opposite the said clamp releasing mechanism, and devices for pushing the bolt outwardly against the said gauge piece while released, substantially as set forth. 5th. The combination in a stave sawing machine, of the rotary horizontal table supported by its centre upon a hollow journal, and provided with a circular rim for carrying a series of stave bolts, and provided with means for clamping the bolts to the table with their outer edges projecting over the peripherial edge thereof, of a band saw carried upon pulleys above and below the table, and with the upwardly moving portion of the saw passed through the said hollow journal, and with the downwardly moving portion of the saw in close proximity to the peripherial edge of the table, substantially as set forth. 6th. The combination in a stave sawing machine, of the band saw and mechanism for supporting and operating the saw, a rotary table with its periphery in close proximity to the cutting portion of the saw, and provided on its outer rim with a series of spaces for carrying stave bolts, a series of clamps for securing the bolts to the table, a gauge piece secured in a fixed position outside of the periphery of the table, mechanism for operating the clamp to release the bolt when opposite said gauge piece, and devices for moving the released bolt against the gauge piece, substantially as set forth. 7th. The combination in a stave sawing machine, of the band saw and mechanism for supporting and operating the saw, a horizontal rotary table, supported by its centre and with its rim in proximity to the cutting side of the saw, and provided with devices for clamping a series of stave bolts with their edges projecting beyond the peripherial line of the table, a gauge piece outside of the table for regulating the projection of the bolts, and devices for automatically releasing each bolt when opposite the said gauge piece, of a roller adjustably supported between the gauge piece and the axis of the table, and means for actuating the roller against the inner side of the bolt for the purpose set forth, substantially as described.

No. 41,415. Damper for the Tubes of Boilers.

(*Clé de tubes de chaudières.*)

Jules Ferdinand Theophile Schwabb, called Van Hecke, Paris, France, 29th December, 1892; 6 years.

Claim.—In an apparatus for regulating or controlling the passage of the heated gases in the tubes of locomotive or other steam boilers, (1) the combination of an oscillating front plate with means of adjusting the same, (2) the combination of a hinged counter plate with a slide plate and draw chain so as to allow the lower part of the apparatus to be closed, (3) the combination of a metal plate hinged at the base of the smoke box, whereby the movement of the heated gases is reversed, (4) the forming of the front plate of perforated metal, all substantially as above described.

No. 41,416. Revolving Fortification for Coast Defence. (*Fortification tournante pour la défense des frontières.*)

Andrew D. Huff, Joseph W. Ellis and Michael Hattenbach, all of Denver, Colorado, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. A revolving fort having a tapering and converging roof formed of an inner layer of boards, a steel sheathing above said inner layer, layers of railroad iron above said sheating, and an outer steel sheathing, substantially as shown and described. 2nd. In a revolving fort, a tapering and converging roof consisting of an inner layer of boards, a layer of sheet steel, railroad iron locked together, and an outer steel sheathing supported against inward strain by iron girders 14, and braces 15 and 16, extending from the floor, substantially as described and shown by the drawings. 3rd. A revolving fort having a floor supported by tapering beams extending from a central block located centrally of said floor, rollers 8 and 5, on the under side of said floor and block, in combination with the inner pier 6, and the outer wall 7, and mechanism whereby the fort is revolved, all as set forth. 4th. A revolving fort having a tapering and converging roof formed of inner layers of boards, a steel sheathing above said inner layer, layers of railroad iron above said sheathing, and a protective armor extending divergingly from the line of port holes into the ground, as set forth. 5th. The combination with a revolving fort of the recessed block 3, located centrally of and beneath the floor of the fort roller 5, on said block, foundation 6, located beneath the block and having the pivot 4 thereon, adapted to enter the recess in the block, roller 8 on said floor, the outer foundation 7, having the rack 20 thereon, pinion 21, and gearing mechanism as described, adapted to be operated above the floor to revolve the fort, all substantially as described.

No. 41,417. Mechanical Movement.

(*Mouvement méanique.*)

Jesse Morningstar, and John W. Winzeler, both of Archibald, Ohio, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. In a mechanical movement, the combination, with a drive shaft having a circular peripherally grooved cam wheel thereon at an angle thereto, a circular strap in said groove a rock shaft at an angle to the drive shaft and having a fork at its rear end pivoted to opposite sides of the strap, and a crank arm at the opposite end of said rock shaft, of a reciprocating cutter bar, and a link connecting said cutter bar with said crank arm, substantially as set forth. 2nd. In a mechanical movement, the combination, with a driving shaft, of a circular cam wheel secured on said driving shaft and set at an angle thereto, a circular strap engaging a cam groove in the rim of said wheel, trunnions formed diametrically opposite each other on said strap, a shaft mounted to turn and provided with a fork engaging said trunnions, and a frame in which said second named shaft is mounted to turn, said frame being pivoted on the first named shaft, substantially as shown and described. 3rd. In a mechanical movement, the combination, with a driving shaft, of a circular cam wheel secured on said driving shaft and set at an angle thereto, a circular strap engaging a cam groove in the rim of said wheel, trunnions formed diametrically opposite each other on said strap, a shaft mounted to turn and provided with a fork engaging said trunnions, a frame in which said second named shaft is mounted to turn, said frame being pivoted on the first named shaft, a knife frame fulcrumed on said second named shaft and provided with a knife bar, and a crank arm hold on said second named shaft and pivotally connected with said knife bar, substantially as shown and described.

No. 41,418. Cut Off. (*Detente.*)

William A. Smith, assignee of William W. Dutton, both of Lima, Ohio, U.S.A., 29th December, 1892; 6 years.

Claim.—1st. In a rain water cut off, the main supply and converging pipes and pivoted cut off, arranged relatively to the same, so that said cut off abuts against the lower portion of the supply pipe, a combined handle and pivot at right angles with the cut off, and a link carried by the projecting end of the handle and adapted to engage at its lower end with the free ends of springs *e*, *e* the opposite ends of said springs being rigidly secured to the converging sections below the cut off, so that the free ends of the springs will be below the pivots of the cut off, substantiaily as set forth. 2nd. In a rain water cut off, the combination of the main and converging pipes and pivoted cut off, arranged relatively to the same, combined handle and pivot at right angles to the cut off, and a link carried by the projecting end of the handle and adapted to engage at its lower end with the free ends of springs *e*, *e*, looped and rigidly secured to the converging sections so as to exert at all times a downward pull upon the link and the handle, substantially as set forth. 3rd. The combination, with a rain water cut off, of a pivoted plate working therein, a spring secured on the side of the cut off below one of the pivots, the latter being extended to form a handle, and a

link connected to said handle and engaging the spring to retain the plate, substantiallyas set forth. 4th, The combination, in a cut off, of main and branch sections, a cut off plate pivoted as described and having one of its pivots extended to form a crank, springs *c c*, secured to said branch section, the same being looped as shown and provided with free bent ends, which are adjacently located or crossed, and a link perforated for engagement with the ends of the springs and with the crank, substantially as set forth.

No. 41,419. Umbrella Frame. (*Monture de parapluie.*)

Ducan Pike, assignee of William H. Rodden both of Toronto, Ontario, Canada, 29th December, 1892; 6 years.

Claim.—1st. An umbrella frame, consisting of an apex wheel comprised of two sections, one section of which is provided with an internal groove or recess, and a series of radial slots extending inwardly from the periphery of said section, the other section consisting of a cap to close the open end of the first section, substantially as described. 2nd. An umbrella frame, consisting of an apex wheel comprised of two sections, one section of which is provided with an internal groove or recess, and a series of radial slots extending inwardly from the periphery of said section, the other section consisting of a cap to close the open end of the first section, in combination with the ribs and pivotal ring and a stretcher for each rib, substantially as described. 3rd. In an umbrella frame, in combination, with the ribs and stretchers, the apex and sliding wheels, each of which is comprised of two sections, one of said sections being provided with an internal groove or recess into which is placed the pivotal ring for the ribs or stretchers, as the case may be, a series of radial slots extending inwardly from the periphery of said section through which pass the ribs or stretchers, a stop to bear upon the pivotal ring to hold it in place, and a cap over said section serving as a shield to prevent the eyes of the ribs or stretchers and the pivotal ring interfering with the surrounding parts, substantially as described. 4th. In an umbrella frame, in combination, with the ribs or stretchers, of an apex and a sliding wheel, each of said wheels comprised of two sections, one of said sections provided with an internal groove or recess in which is placed the pivotal ring, a series of radial slots extending inwardly from the periphery through which pass the ribs or stretchers, as the case may be, lugs between said slots, said lugs bent inward to bear uponthe pivotal ring and securely hold it in place, the second section consisting of a cap having formed in its inner side a groove or channel into which enters the ends of the lugs between the radial slots, substantially as set forth. 5th. In combination, with the frame of an umbrella, a holder for securing the ends of the ribs consisting of a shell, comprised of an inner and an outer wall, the inner face of the inner wall screw threaded to engage with the threaded portion of the stick or metallic surrounding plate, and the outer wall arranged to collect and hold the ends of the ribs of the frame, substantially as set forth.

No. 41,420. Silicate Compound. (*Composé de silicate.*)

Marc Wahram Beylikgy, New York, State of New York, U. S. A., 29th December, 1892; 6 years.

Claim.—The herein described alkaline magnesian silicate solution, in which the silicate consists of seven equivalents of pentasilicate of soda combined with two equivalents of monosilicate of magnesia.

No. 41,421. Valve. (*Soupape.*)

Henry Clark Sergeant, New York City, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. The combination, with the cylinder of a reciprocating engine having a longitudinal opening for valve tappets, and a piston in said cylinder having inclined surfaces or shoulders which face each other, of a valve having tappets which enter said opening, and fixed stops outside of said tappets against which the said tappets are held by the piston when the valve has completed its movement in either direction, substantially as herein set forth. 2nd. The combination, with the cylinder of a reciprocating engine having in it a longitudinal opening for valve tappets, of an oscillating valve having its face approximately radial to the axis of said cylinder, and having tappets situated within said opening, and a seat plate for said valve partly covering said opening, and the tappets within it to constitute stops for the tappets to control the movement of the valve, substantially as herein set forth. 3rd. The combination with the cylinder having the tappet open *a*, the angular seat plate C, D, having the opening *f*, opposite the said tappet opening *a*, but partly overlapping said opening to form tappet stops *g*, *g*, and the oscillating valve G, having its axis of oscillation within said tappet opening, having tappets *j*, *j*', behind the so-formed stops, and having its face *k*, perpendicular to its axis of oscillation, and projecting through the said opening *f*, in the seat plate, and in contact with the corresponding seat *h* on said plate, substantially as herein set forth. 4th. The three winged oscillating tappet valve having one wing, which constitutes the valve face, narrower or thinner in a direction parallel with the axis of oscillation than the other two wings, which constitute the tappets, substantially as and for the purpose herein set forth.

No. 41,422. Bath Tub. (*Baignoire.*)

George Booth, Toronto, Ontario, Canada, 30th December, 1892; 6 years.

Claim. A bath tub composed of a sheet metal outer casing having an inner casing of copper, aluminium or other light flexible material, and a lining of asbestos or other non-conducting material placed between the two casings, substantially as and for the purpose specified

No. 41,423. Lock. (*Serrure.*)

Frederick Page Cobham and Fred E. Windsor, both of Warren, Pennsylvania, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. In a lock, the combination with a spring bolt, of a revolving barrel, having a slot at one side for the reception of a key, and a key provided with a projection adapted to engage the bolt, substantially as described. 2nd. In a lock, the combination with a spring bolt, of the slotted barrel, and the tumbler adapted to engage the slot of the barrel, substantially as described. 3rd. In a lock, the combination with the bolt, of the slotted barrel, of the tumbler adapted to engage the barrel, and the tumbler adapted to engage the bolt, substantially as described. 4th. In a lock, the combination with a spring bolt, of the slotted barrel, the tumbler having arms extending on opposite side of the barrel, said arms having projections, one adapted to engage the slot of the barrel, and the other adapted to engage a recess therein, substantially as described. 5th. In a lock, the combination with a main frame and side plates, of a bolt, a barrel provided with an annular groove, and a tumbler provided with arms having inward projections, adapted to travel in said groove, when the barrel is rotated, substantially as described. 6th. In a lock, the combination, with a main frame and side plates, of a bolt, a barrel provided with an annular groove, and with a recess therein, a tumbler provided with arms having inward projections, adapted to travel in said groove when the barrel is rotated, and a spring adapted to force one of said arms into the key slot of the barrel, and the other arm adapted to engage the recess of the said groove, substantially as described.

No. 41,424. Electric Elevated Railway.
(*Chemin de fer aérien électrique.*)

The National Unicycle Elevated Railway Company, East St. Louis, Illinois, assignee of E. M. Turner, L. A. Brown, and G. L. Van Beek, all of St. Louis, Missouri, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. A rail plate, substantially as herein described, having a web and rails formed integral with its edges. 2nd. The combination of upper and lower cords, inclined traces and tension posts, socketed at one end and threaded at the opposite end, and adapted to be elongated by revolution, substantially as described. 3rd. In elevated roads, upper and lower cords and inclined bridges, in combination with tension posts, adapted to be elongated and shortened by revolution, and wedges adapted to be spread apart by elongation of said tension post, substantially as specified. 4th. In elevated railroads, the rail plate having apertures near its terminals, and head blocks provided with depending hooks or lugs adapted to engage said apertures in the plate, in combination with the upper and lower cords, tension posts and inclined braces, substantially as described. 5th. The combination with the main rail of its supports, of the inclined braces, a tension device acting upon said braces, and foot pieces and guides for the lower ends of the braces, substantially as described. 6th. A three rail elevated railway structure, having a bare trolley wire arranged parallel with one of its rails, in combination with operative connections, substantially as described. 7th. A car for elevated roads having the weight thereof carried by a yielding support vertically movable and rotatable relative to the car body, substantially as described. 8th. A motor truck, for three-rail elevated railways, comprising a series of cross beams, a main supporting wheel mounted to project above said cross beams and ride upon the main rail, and framework forming pockets, depending from said cross beams, and an electric motor mounted in one or both of said pockets and operatively geared to the shaft or axle of said supporting wheel and adapted to propel the truck, substantially as described. 9th. A motor truck having a main supporting wheel and one or more guide wheels mounted upon vertical shafts pivoted at their upper ends, substantially as described. 10th. A trolley wheel for three-rail electric railways, attached to the truck of a car and adapted to ride upon the upper side of the bare trolley wire, substantially as described. 11th. In a three-rail elevated railway, a truck having a single supporting wheel and safety rollers 54, mounted on said truck directly above the location of the main rail, and one of said rollers on either side of said supporting wheel and normally out of contact with said rail, substantially as described.

No. 41, 25. Cleaner for Boiler Tubes.
(*Nettoyeur de tubes de chaudières.*)

John Mountain Dunn, Toronto, Ontario, Canada, 30th December, 1892; 6 years.

Claim. 1st. The combination, with the covered spring blades A attached to or forming part of the disc B, and having the tapered split sleeve F formed within it, of the rod C having secured to its outer end the backing frame D, which moves within the tapered

split sleeve F, and the following frame G secured in position on the rod C, as and for the purpose specified. 2nd. The combination, with the curved spring blades A attached to or forming part of the disc B, and having the tapered split sleeve F, provided with ribs E formed within it, of the rod C, having secured to its outer end the backing frame D, comprised of the forward disc d, having notches e and rear disc d^1, joined together by the connecting rods d^{11}, which moves within the tapered split sleeve F, and is held in position by the ribs E, along which the notches e pass, and the following frame G screwed on to the threaded end of the rod C and the rod H, as and for the purpose specified. 3rd. The combination, with the curved spring blades A attached to or forming part of the disc B, one blade having flaps a designed to fit and be adjustable within recesses a^1 of the opposite blade, and both blades having a tapered split sleeve F, of the rod C, having secured to its outer end the backing frame D, which moves within the tapered split sleeve F, and the following frame G secured in position on the rod C, as and for the purpose specified.

No. 41,426. Means for Distinguishing Vessels in Fogs. (*Moyen de distinguer les vaisseaux dans la brume.*)

Wolfred Nelson, New York, State of New York, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. In a marine vessel, means provided and arranged at or near, or just above, the "Plimsoll's" or load line for throwing light outwardly and horizontally therefrom, substantially as and for the purposes specified. 2nd. In a marine vessel, means provided and arranged at or near the "Plimsoll's" or load line thereof for throwing light outwardly and horizontally therefrom, and also for observation and for receiving light from other vessels, substantially as shown and described.

No. 41,427. Method of and Means for Making Paper Belting. (*Methode et moyen de fabrication des courroies en papier.*)

Adolf L. Lounerberg, Stockholm, Sweden, 30th December, 1892; 18 years.

Claim.—1st. Beltings made of a number of paper bands laid one upon another, and pasted together by means of some adhesive, made insusceptible of moisture by adding to the adhesive alum, chromate of potash, chromic acid, sugar of lead, or some other matter suitable to render the glue insusceptible of moisture. 2nd. Proceeding at the manufacture of beltings, consisting in pasting paper bands of wanted width together to suitable thickness by means of an adhesive, rendered insusceptible of moisture by adding to it alum, chromate of potash, chromic acid, sugar of lead, or some other matter suitable to make the glue insusceptible of moisture.

No. 41,428. Preserving Compound for Wood and Iron. (*Composition pour la conservation du bois et du fer.*)

Robert Augustus Cheseborough, New York, State of New York, U.S.A., 30th December, 1892; 6 years.

Claim.—A coating of ozocerite applied to wood or iron to be imbedded or buried in the ground to preserve the imbedded or buried portions against impairment by the action of the earth, and fluids contained therein, substantially as set forth.

No. 41,429. Combined Hot Air Pipe and Air Flue.

(*Tuyau et tube à air chaud combinés.*)

Ernest A. Eversman and Daniel Wagner, both of Toledo, Ohio, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. A hot air pipe formed with inner and outer walls, the inner wall being bent at right angles, thence in line with the pipe, thence at right angles to the bent part of the pipe, and perforated, and then in line with the pipe, and the outer wall bent at right angles upon the same plane as the right angled portion 6, and thence parallel with and embracing the end and two sides of the portion 7, and the outer end of the pipe provided with spacing collar, having perforations in line with the perforations in the right angled portion 6, substantially as and for the purpose specified. 2nd. A hot air pipe formed of an inner and outer wall, one of which is extended beyond the other, and a piece of metal arranged between the inner and outer wall, with its end bent over and embracing the ends of the said inner and outer walls, with one portion extending parallel and in contact with the outer wall, and thence bent at right angles, forming a recess for the reception of the rib upon the adjacent end of and entering section of the pipe, the diaphragm thus formed being perforated, substantially as shown and described. 3rd. A hot air pipe, formed at one end with a perforated right angled portion, and having the inner and outer walls extended in line with the pipe, and united, and the outer end provided with a perforated spacing collar, arranged between the inner and outer walls of the pipe, with its ends embracing the ends of said inner and outer walls, as set forth. 4th. The combination with a hot air pipe, having inner and outer walls united and bent at one end to form a transverse wall, which is perforated, and a rib extending in line with the pipe beyond said transverse portion, within the line of the outer wall, of an adjoining section provided at the adjacent end with a spacing collar, embracing the inner and outer walls, and formed with a perforated diaphragm, and an interior recess to receive and hold the rib on the end of the first named section of pipe. 5th. A combined hot air pipe and air flue composed of sections, a sheet metal wall spaced to form an outer passage, said sections being crimped and fitting into one another, and at their ends bent to form oppositely extending portions, having perforations between the walls for the passage of air in the air flue, an opening in the air flue for admission of air, and a normally closed closure arranged across the same, with means for opening the closure from the furnace room, or the apartments above, as and for the purpose set forth.

No. 41,430. Apparatus for Heating Railway Cars.

(*Appareil de chauffage des chars.*)

The Consolidated Car Heating Company, Albany, New York, U.S.A., assignee of James Finney McElroy, of Albany aforesaid, 30th December, 1892; 6 years.

Claim.—1st. A railway car heating system, consisting of a steam supplying pipe connected with the locomotive, a return pipe conducting the water of condensation from the car to the locomotive, a drum provided with heating surface, connections between the drum and the steam supplying pipe and the return pipe, a water circulating system provided with a stove containing a circulating coil, piping about the car connected with said coil, an expansion chamber communicating with the coil and also with the piping about the car, the water of circulation passing through the drum provided with the heating surface, a pipe connecting the upper portion of the expansion chamber with the pipe connecting the drum containing the heating surface with the return pipe, substantially as described and for the purpose set forth. 2nd. A system for heating railway cars, consisting of a steam supplying pipe connected with the locomotive, a return pipe to carry the water of condensation back to the locomotive, a drum having a surface heated by means of the steam passing through the steam supplying pipe, which is connected with said drum, a water circulating system which is connected with said drum, and which is provided with a stove containing a circulating coil, an expansion chamber connected with said coil and with piping in the car, the upper portion of said expansion chamber communicating with the return pipe, substantially as described and for the purpose set forth. 3rd. In a system for heating railway cars, the combination of a stove, a water circulating coil therein, an expansion chamber connected with said coil, piping within the car connected with said coil and also with said expansion chamber, a drum containing a heated surface connected with the piping in the car, a steam supplying pipe connected with said drum, a return pipe connected with said drum, through which return pipe the water of condensation is pumped back to the locomotive, a pipe connecting the upper portion of the expansion chamber with the return pipe, substantially as described and for the purpose set forth. 4th. In a car heating system, the combination, with a system of water circulating pipes within the car, of a suitable radiator in contact with said circulating system, mechanism for supplying said radiator with steam as a primary means of heating said circulating system, mechanism for returning the water of condensation from the steam supplying system, with a pipe connecting the upper portion of the expansion chamber of said water circulating system with the system for returning the water of condensation from the steam supplying system, substantially as described and for the purpose set forth.

No. 41,431. Waggon Spring. (*Resort de wagon.*)

John Henry Sinale, St. Thomas, Ontario, Canada, 30th December, 1892; 6 years.

Claim.—1st. The combination in a waggon spring of the semi-elliptic springs A and B, and the relieving spring C, with the spring bar D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of two or more semi elliptic springs and a relieving spring, with a spring bar, the whole being securely held together at their points of junction, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the semi-elliptic spring A and B, having a relieving spring C, with the spring bar D, provided with adjustable lugs or plates E, E, substantially as and for the purpose hereinbefore set forth.

No. 41,432. Electric Tire. (*Bandage électrique.*)

The Gendron Manufacturing Company, Toronto, Ontario, assignee of Peter Gendron, Toledo, Ohio, 30th December, 1892; 6 years.

Claim.—1st. The combination with a tubular tire of an interior looped reinforcing spring, substantially as described. 2nd. The combination with a tubular tire of an interior looped reinforcing spring spirally arranged, substantially as described. 3rd. The combination of an elastic tubular tire, of an interior reinforcing spiral spring spirally arranged, substantially as described. 4th. The combination with an elastic tubular tire of an interior looped reinforcing spring spirally arranged, having its coils capable of independent movement, substantially as described. 5th. The combination with an elastic tubular tire, composed of the rubber portions a, and canvas portion b, of the spiral spring d, spirally arranged within said tire, and a covering E for said spring, substantially as described.

No. 41,433. Recording Compass. (*Compas enregistreur.*)

The Townsend Marine Invention Company, Baltimore, Maryland, assignee of John J. Townsend, Portsmouth, Virginia, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. The combination with a casing having a slit, of a vertical shaft carrying a magnectic needle, and an opaque disc consisting of a diaphanous spiral line forming but a single turn, and intersecting the plane of the slit, substantially as described. 2nd. The combination with a case having a slit, of a magnetic needle, and a screen covering said slit and adapted to be moved by the needle, said screen consisting of a sheet of glass or other transparent material having an opaque coating, a portion of said coating being removed in a line intersecting the plane of the slit, substantially as described. 3rd. The combination with a case having a slit, of a vertical shaft carrying a magnetic needle, and a glass disc blackened on one side, the opaque coating being removed in a spiral line, substantially as described. 4th. The combination with a case having a slit, of a vertical shaft carrying a magnetic needle, and an opaque disc having a diaphanous spiral line forming but a single turn, with its ends falling short of the same radial line by an amount equal to the width of the slit, substantially as described. 5th. A recording compass comprising a suitable case for the compass needle, and a removable dark box for containing a sensitized surface to be affected by the movements of the compass needle, substantially as described. 6th. The combination with the case E, containing the shaft and compass needle, of the shallow box adapted to fit up against the top of the case above the needle, substantially as described. 7th. A recording compass comprising the case E, the removable box K having an opening in its top, the slide k adapted to close said opening, and provided with a rack, and the shaft k^1 carrying a pinion meshing with said rack, substantially as described. 8th. A recording compass, comprising the box K having an opening in its top, the screen k for closing said opening, the rock shaft m^1 having rock arms m m^3, the roller M journalled in the arms m, and the spring m^2 bearing against the arm m^3, substantially as described. 9th. A recording compass, comprising the case E, the box K removable therefrom and containing the feed roll N, whose axle carries the cog wheel T outside of the box K, the clock work O contained in a frame secured to the case E, and a train of gears adapted to connect the clock work and the cog wheel T when the box is placed in the case, substantially as described. 10th. A recording compass comprising the case E, the box K removable therefrom and containing the winding drum L, a pinion l on the axle of the winding drum and outside of the box, a drum Q journalled in fixed bearings in the case E, a weighted cord wound around the drum and gearing connected with the drum and adapted to mesh with the pinion l when the box K is placed in the case, substantially as described. 11th. A recording compass, comprising the case E, the removable box containing the feed roll N provided with a cog wheel T outside of the box, the clock work having a gear wheel o, and a train of gears connecting the gear wheel o and the cog wheel T, said train being mounted on a frame adapted to be swung clear of the box K when the latter is to be removed from the case, substantially as described. 12th. In a recording compass, the combination with the casing containing a slit, of the magnetic needle secured to the vertical spindle, the disc H mounted on the spindle in close proximity to the slit in the casing and containing the spiral y which makes substantially a complete turn, and is thereby adapted to intersect the plane of the slit at every position of the needle, a sensitized strip arranged to travel at one side of the spindle, and a motor for moving the strip, substantially as described. 13th. In a recording compass, the combination with the casing having in its top D the slit x, of the spindle G passing below the top D and having the y spiral making substantially a complete turn, and intersecting the plane of the slit x, the traversing sensitized strip arranged below the top D at one side of the spindle, and a motor for moving the strip, substantially as described. 14th. A recording compass comprising the casing having the slit x, the dark box arranged below the top D, the spindle arranged at one side of the dark box and carrying the disc H, above the top of the casing, and a long magnetic needle secured to the spindle and arranged to swing below the dark box, substantially as described. 15th. The combination with the casing, having the slotted top D, of the magnetic needle F, secured upon the spindle G, the conical step bearing g, and the adjustable conical bearing g^1, for the spindle, the disc H, secured to the spindle just above the top D, the dark box immediately below the top D, at one side of the spindle, and means for moving a sensitized strip in the dark box, substantially as described. 16th. A recording compass, comprising in combination with the magnetic needle, a screen having a slot, and a disc having a spiral y, forming but a single turn, and intersecting the plane of the slot, its ends lying nearly in the same radial line, and both on the same side of the centre of the disc, substantially as described. 17th. A recording compass, comprising a case having a bevelled recess in the under side of its top, and a slit at the summit of the recess, a movable screen controlling the passage of light through the slit, a sensitized strip travelling below the slit, and a suitable device for pressing said strip into the recess, substantially as described. 18th. A recording compass, comprising a magnetic needle, a disc moved thereby and containing the spiral y, a sensitized surface, a motor arranged to move said surface under the disc, and a time recording device adapted to mark upon the sensitized surface regular intervals of time, substantially as described. 19th. An apparatus for recording graphically the courses, time and rates of speed of a vessel, consisting of a magnetic needle, a clock, a submerged device offering a resistance to its passage through the water, three movable screens connecting respectively with the needle, the clock, and the submerged device, and a sensitized surface travelling below the screens, substantially as described. 20th. A speed recorder for vessels, consisting of the combination with a casing having a slit, of a slotted slide movable below the slit, a drag connected with said slide, a sensitized surface below the slide, and suitable means for moving the sensitized surface, substantially as described. 21st. A speed and course recorder for vessels, comprising a magnetic needle, an opaque disc moved thereby and containing a spiral y, an opaque slotted slide, a tension device and a floating drag both connected with said slide, an opaque screen having one or more slots arranged to coact with the disc and slide, and a motor arranged to move a sensitized sheet beneath the disc, slide and screen, substantially as described.

No. 41,434. Polishing Machine. (*Machine à polir.*)

Henry Frost, Cohoes, New York, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. The combination, with the suspended pivoted frame, of the actuating pulley travelling longitudinally of a shaft carried by said frame, and the roll operated by belt directly from the said pulley, as set forth. 2nd. The combination, with the suspended frame pivoted between its front and rear ends, of the actuating pulley carried thereby, means for revolving the said pulley, and the roll supported by belts passed over the actuating pulley and revolved by the same belts, substantially as specified. 3rd. The combination, with the swinging frame, of the grooved actuating pulley, the roll, and the belts arranged in grooves in the pulley and in the roll, as set forth. 4th. The combination, with the pivoted suspended frame, of the endwise movable actuating pulley carried by a shaft on said frame, the roll and the belts connecting the pulley and roll, substantially as specified. 5th. The combination, with the pivoted suspended frame, of the weights at the rear end thereof, the actuating pulley at the front end and movable endwise upon its shaft, and the roll supported and driven by belts passed around the actuating pulley, substantially as specified. 6th. The combination, with the hangers formed with arms extended outward and downward, of the drive shaft journalled in the hangers, the frame pivoted in the arms, the cone pulleys and belts connecting them, the grooved actuating pulley carried by a shaft on the pivoted frame, the roll, and the belts connecting the pulley and roll and supporting the latter, substantially as specified. 7th. The combination, with the shaft having longitudinal grooves, of the pulley having at its end bevelled wheels travelling in said grooves, substantially as specified.

No. 41,435. Armature for Dynamos.

(*Armature de dynamo.*)

Barron Douglas Southard, Chicago, Illinois, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. In an armature of the class described, the combination, with suitable supporting devices, of a series of separate longitudinal sections, a series of coils of wire mounted upon these sections and wound parallel to the axis of rotation, and portions rigid with the sections projecting outside of the coils of wire and adapted to retain them in place against centrifugal force, substantially as described. 2nd. In a device of the class described, a ring or disc armature composed of a series of separable sections, a series of coils of wire mounted upon these sections, and a series of tongues rigid with the sections projecting between the coils and the field magnets, whereby the coils are retained in place and prevented from striking the field magnets, substantially as described.

No. 41,436. Type Composing Machine.

(*Machine à composer.*)

John Gustafson, Rockaway, New Jersey, U.S.A., 30th December, 1892; 6 years.

Claim.—1st. In a composing machine, the combination with devices for turning the type on its longitudinal axis, of an actuating lever, pivoted in proximity to the type receptacle, so as to be readily operated in the act of depositing type, substantially as described. 2nd. In a composing machine, the combination of a receptacle for type, and an actuating lever pivoted adjacent to said receptacle in position to be struck by the hand in the act of carrying a type to said receptacle, substantially as described. 3rd. In a composing machine, the combination of a receptacle for type, feeding devices and an actuating lever pivoted adjacent to said receptacle and having two branches, substantially as described. 4th. The combination of the feeding devices, the receptacle, a pivoted gate closing the receptacle on the side towards which the type is to be fed, and a lug or cam for opening said gate as the feeding devices advance, substantially as described. 5th. The combination of the feed slide or carrier having fingers for advancing the type, a guide pin carried by said slide, and a fixed ledge or sill provided with guide ways in which said pin travels, the return guide way being adapted to deflect the feed slide and its fingers out of the path of the type, substantially as described. 6th. The combination with the reciprocatory

feed slide or carrier provided with a spring guide pin, of a fixed sill having a direct and return guide groove, which grooves meet at their extremities with their bottoms in different planes, forming steps to switch the guide pin from one groove to the other, substantially as described. 7th. In a composing machine, the combination of a tripper or trippers for acting upon the type, and an intermittently acting feed for carrying the type, constructed and operated so that the type comes to rest just in front of each tripper, substantially as described. 8th. In a composing machine, the combination with a series of trippers for acting successively upon the type, of a series of feed fingers and means such as specified for actuating said fingers, to carry the type by successive movements past the several trippers, substantially as described. 9th. In a type setting machine, the combination with the type feeding devices, of three trippers arranged in series for acting successively upon the type, substantially as described. 10th. The combination with type feeding devices, of a series of trippers, each composed of a narrow tooth rigidly attached to a yielding support and projecting into the path of the type in line with one of the nicks, substantially as described. 11th. In a composing machine, the combination of a hopper or receptacle, a feed slide or carrier provided with a series of feeding fingers, tripping teeth each projecting from a yielding support into the path of the type, and a hand lever connected with and actuating said feed slide or carrier for feeding the type by successive movements past the several trippers, substantially as described. 12th. The combination of the trippers carried by a stationary support, the type feeding devices, and a plate upon which the type rest while being carried past the trippers, said plate being detachably secured to said stationary support and adjustably vertically thereon, substantially as described. 13th. The combination with type feeding devices, of a series of trippers comprising each a tooth projecting into the path of the type from a yielding support, the tooth of the last tripper of the series being adjustably secured to its support so that the extent of its projection may be varied, substantially as described. 14th. The combination of the composing stick, the rule, the lever for holding the line of type against the rule, the bell hammer, a dog or catch for engaging a notch on said hammer, connections for raising the hammer when said lever is swung into the path of the type for tripping said dog or catch and releasing the hammer, substantially as described.

No. 41,437. Wrench. (*Clé à écrou.*)

Daniel R. Porter, Chelsea, and Francis M. Bardwell, Boston, both in Massachusetts, U.S.A., 30th December, 1892; 6 years.

Claim.—The herein described wrench, comprising a handle or lever having a fixed jaw, the ears projecting from said handle or lever, the parallel extensions formed with said ears, having shoulders at their points of conjunction forming inner bearings, and shoulders at their outer edges of said ears forming outer bearings, in combination with a movable jaw having a screw threaded shank and an adjusting nut engaging the shank and encircling said parallel extensions and held by said inner and outer shoulders, as set forth.

No. 41,438. Process of and Apparatus for Electrically Reproducing Uneven, Irregular, or Undulating Surfaces. (*Procédé et appareil pour reproduire par l'électricité des surfaces inégales, irrégulières ou onduleuses.*)

Noah Steiner Amstutz, Cleveland, Ohio, U. S. A., 30th December, 1892; 6 years.

Claim.—1st. The method of reproducing bas relief, intaglios and the like surfaces, consisting in running a tracing point in contact with the surface to be produced and communicating the variable vibrations of said point to a reproducing point or device by means of an electric current, substantially as described. 2nd. The method of transmitting the configuration of a given surface from one point to another, which consists in causing a tracing point to be vibrated, by and according to the undulations of the surface to be reproduced, and communicating the said undulation by means of an electric current to another tracing point or device working upon another surface, substantially as described. 3rd. The method of reproducing surfaces having variable elevations, the same consisting in moving the subject to be reproduced back and forth beneath a tracing point, and communicating the up and down movements of said point by an electric current to a reproducing point or device, arranged over a surface in which the undulations of the original are faithfully reproduced by moving said material or work back and forth beneath the reproducing point or device by an electric current in unison with the original work, substantially as described. 4th. The method of duplicating uneven surfaces, the same consisting in causing a tracing point to travel back and forth in approximate paths over an undulating surface, and causing a delineation of said surface to be made on another surface by a reproducing point actuated by a current of electricity, varying in strength with the varying elevations and depressions of the original surface, substantially as described. 5th. The method herein described, consisting in reproducing an undulating surface on a body of plastic material having a substantially even surface by transmitting the undulations of the original surface through a suitable reproducing point, arranged to penetrate said plastic surface to greater or less depth and width, governed by the varying strength of the electric current, substantially as described. 6th. The method herein described of working electrically from one surface to another, which consists in employing a suitable point for each surface, and controlling one of said points electrically through an interposed graduated resistance, substantially as described. 7th. In an electrical transmitting system, a subject having variable elevations on its surface, and a tracing point actuated by said elevations, substantially as described. 8th. In an electrical transmitting system, a subject with an irregular surface and a tracing point actuated by said subject, in combination with a plate having a reproducing point actuated electrically through the movements of the tracing point, substantially as described. 9th. In an electrical transmitting system, two plates and a movable point for each plate, with electrical connections whereby one point is actuated by the variable movements of the other, substantially as described. 10th. In an electrical transmitting system, a subject having an irregular or uneven surface, and a tracing point to work in contact therewith, in combination with a reproducing point, and electrical connections providing an undulating current for actuating the reproducing point, substantially as described. 11th. In an electrical transmitting system, a subject having a support provided with mechanism for moving it in different directions, a tracing point pivoted to work up and down over said plate, and electrical connections whereby said mechanism is reversed, substantially as described. 12th. In an electrical transmitting system, a carrier for a subject provided with longitudinal and transverse ways, mechanism to move the carrier in said ways, a tracing point supported on an arm and having a spring to keep the point in working position, and electrical connections controlling the movements of said mechanism, substantially as described. 13th. In an electrical transmitting system, a suitable support for a subject having an irregular surface and an arm provided with a tracing point, and adapted to work up and down over the subject, substantially as described. 14th. In an electrical transmitting system, separate stations connected electrically, one of said stations having a subject or pattern with an irregular surface, and a tracing point actuated by said surface, and another station having a reproducing point actuated electrically, substantially as described. 15th. In an electrical transmitting system, a sending station having a tracing point, operated by an uneven surface, over which said point is adapted to travel, in combination with a receiving station having a reproducing point to interpret said irregular surface, and electrical connections between said stations provided with means to make the strength of the current correspond to the irregularities of the surface to be reproduced, substantially as described. 16th. In an electrical transmitting system, sending and receiving stations electrically connected, and a series of graduated resistances in said connections, substantially as described. 17th. In an electrical transmitting system, a tracing point adapted to vibrate, and a point to reproduce said vibrations on a suitable surface, in combination with electrical connections provided with varying resistances and distinct contact points, substantially as described. 18th. In an electrical transmitting system, a tracing point actuated by an irregular or undulating surface, and an arm supporting said point, with an electrical contact point on said arm to close a circuit, and electrically control the propelling power of the local apparatus, substantially as described. 19th. In an electrical transmitting system, a frame holding a subject to be reproduced, having ribs or beads on which the tracing point is adapted to ride, with said tracing point, whereby the frame is reversed through electrical connections, substantially as described. 20th. In an electrical transmitting system, a sending station and a receiving station, each provided with suitable mechanism, and electrical connections between said stations whereby the said mechanism at both stations is simultaneously reversed, substantially as described. 21st. In an electrical transmitting system, a receiving station provided with a plate of plastic or like soft material having an uneven surface and a tool to work from said surface downward in lines varying in depth and width whereby a figure, picture, or the like is produced in relief on the said surface, and electrical connections with a sending station for actuating said tool, substantially as described. 22nd. In an electrical transmitting system, a sending station having a subject with arbitrary elevations on its surface, and a tracing point actuated by said elevations, in combination with a receiving station, having mechanism to interpret and reproduce the movements of the actuating tracing point, substantially as described.

No. 41,439. Type-writing Machine. (*Clavigraphe.*)

Andley Engleman Hornsberger, Staunton, Virginia, U.S.A., 30th December, 1892; 6 years.

Claim.—The combination, with the type wheel journalled in the frame A, provided with a series of types on a segment of its peripheral surface and with a series of peripheral notches arranged in the same relation as the types and disposed on the diametrically opposite face of said wheel, a partially rotatable shaft, intermediate gear connections between said shaft and the type wheel, the key levers, the variable connections between said levers and the rotatable shaft, a swinging detent, intermediate connections between said detent and the key levers, whereby said detent will be brought into engagement with any predetermined notch in the type wheel to limit the forward throw of such wheel, said detent rotatable shaft and type wheel being all operated by a single movement of the key levers to act substantially in the manner and for the purpose described. 2nd. In a writing machine, a type wheel provided on one

segment of its surface with types, a series of notches formed in an approximately diametrically opposite segment of such wheel corresponding in number and relation with the said types, a rock shaft journalled independent of said wheel, intermediate gearing between said shaft and the wheel key levers for rocking said shaft through different degrees of movement, and a pawl or detent adapted to engage any of the notches in the type wheel to limit the forward rotation of said wheel, said pawl connected with and operated by the movement of any of the key levers, substantially as and for the purpose described. 3rd. In a writing machine, a word type wheel and a letter type wheel provided on a segment of their surface with types. and with notches on another segment thereof, corresponding in number and relation with said types, rock shaft, intermediate gearing between said shafts and type wheels, said type wheels journalled independently of each other, key levers by which to rock either of said shafts through different portions of its movement, a pawl or detent adapted to engage any of the notches in either of said type wheels, said pawl connected with and operated by the key levers, substantially as and for the purpose described. 4th. The combination, with the partially rotatable type wheel, the rock shaft F, and the intermediate gearing between said shaft and type wheel, of the key levers arranged in banks, the intermediate connections between said levers and type wheels, said connections consisting of a series of arms journalled on and projected from said rock shaft F, said arms having pivoted connections with said key levers, said pivotal connections arranged at different points forward of the shaft F, whereby the degrees of rotation of said shaft will be varied by the movement of the various key levers, substantially as and for the purpose described. 5th. The combination, with a shaft or bearing supported in the frame of the machine, a word type wheel journalled thereon, operating in a fixed vertical plane, of the letter type wheel journalled on the said support, operating in a vertical plane and adapted for adjustment towards or from the word wheel, and means for shifting said letter wheel, substantially as and for the purpose described. 6th. The combination, with key levers journalled on a common axis, a rock shaft T, journalled parallel to said lever axis, a connection between said levers and shaft, whereby said shaft T is rocked at the movement of any of the key levers, of a shaft 11, journalled at right angles to the shaft T, a spacer wheel journalled on said shaft 11, to revolve therewith, a reciprocating carriage operated by said wheel, and a clutch gear mechanism between said shafts T and 11, whereby a continuous rotation of the shaft 11 is obtained by the rocking movement of the shaft T, all arranged substantially as and for the purpose described. 7th. The combination, with the type wheels, the bed plate provided with the openings X, X^2, the rocking shaft T, connected with and operated by the key levers, said shaft provided with rearwardly extending arms and connections between said arms and the bar 36, whereby said arm is depressed at each movement of the key levers and shaft T, substantially as and for the purpose described. 8th. In a type-writing machine, essentially as described, the combination, with a carriage consisting of a rectangular frame provided with the paper feed rollers at its rear end and a paper guide arranged in front of said rollers, of the bed plate provided with the openings X, X^1, and the curved paper guide secured to one of the standards of the machine at the front edge of the bed plate, substantially as shown and described. 9th. The combination, with the spacer wheel provided with fingers extending horizontally from the inner face of said wheel, or a rock shaft 61, a lifting finger connected to said shaft, adapted to engage the fingers on the spacer wheel and the spacer levers connected to said rock shaft, said levers adapted to rock said shaft to different portions of its movement, substantially as shown and described. 10th. The combination, with the carriage having a rack bar, of the shaft 11, spacer wheel 10 journalled thereon, provided with peripheral cogs or teeth adapted to engage said rack bar, and with lateral fingers of the same number as and arranged in aligment with the said cogs, connections between the said wheel and the key levers, and an independent rock shaft having spacing key levers connected thereto, said shaft connected with the lateral fingers of said spacer wheel, all arranged whereby said wheel is operated by the movement of the regular key levers or by the independent spacing levers, substantially as and for the purpose described. 11th. The combination, with the partially rotatable type wheel, the rock shaft connected therewith as shown, the key levers connected with said shaft to operate it as described, of the impression bar journalled for vertical movement over the type wheel provided with a winged arm disposed normally over said wheel, a standard having a tripping device at its upper end engaging the free end of said impression bar, a connection between said tripper and the key levers, whereby said impression bar is raised by the tripper and allowed to fall by gravity as the tripper is disengaged from the said bar, all arranged substantially as and for the purpose described. 12th. The combination with the type wheel, the rock shaft F, intermediate gearing between said shaft and the type wheel, said rock shaft provided with a series of projections *j* arranged longitudinally thereon and in different vertical planes, of a series of arms H, loosely journalled on said rock shaft, each provided with a lateral projection *h*, engaging the adjacent projection *j*, on the shaft F, and a series of key levers journalled on a common axis, their rear ends connected with the outer ends of the arms H, all arranged substantially as and for the purpose described. 13th. A type-writing machine, comprising partially rotatable type wheel, a rock shaft gear therewith, a series of type levers, intermediate connections between said levers and the rock shaft F, said levers journalled on a common axis a spacer wheel mounted on a rotatable shaft journalled in the frame, a carriage engaging said wheel, intermediate mechanism between said space wheel shaft and the key levers, whereby said shaft is rotated, an impression bar having a vertical movement over the type wheel, and intermediate connections between said bar and the key levers, all arranged whereby the operation of any one of the key levers will operate the several parts set forth, substantially as and for the purpose described. 14th. The combination with the key levers journalled on a common shaft, a rock shaft T, journalled in the frame above said lever shaft, forwardly projecting arms loosely journalled thereon, provided with lateral projections adapted to engage radial projections on the rock shaft T, connecting arms between said arms and the type levers, a bevel gear mounted on said shaft, of a shaft 13 journalled in the frame at right angles to the rock shaft, a ribbon spool mounted thereon, a second shaft 11 parallel to the shaft 13, provided with a ribbon spool and a roller adapted to support one end of the carriage, said spools carrying the ribbon, a spacer wheel mounted on the shaft 11, adapted to engage the carriage, a ratchet formed on the shaft, a clutch collar engaging said ratchet having a bevel rear engaging the bevel gear on the rock shaft T, all arranged substantially as and for the purpose described.

No. 41,440. Corn Popper. (*Papier d'orge.*)

Andrew B. Olson, Kansas City, Missouri, U.S.A., 30th December, 1892; 18 years.

Claim.—1st. A corn popper, consisting of a case having a suitable discharge opening, and an interior perforated conveyor having a terminating cornuted chute, substantially as and for the purpose described. 2nd. A corn popper, consisting of a case having a suitable discharge opening, an interior perforated conveyor, and a chute at the terminal of said conveyor, substantially as and for the purpose described. 3rd. A corn popper, consisting of a case having a suitable discharge opening, an interior convoluted perforated conveyor, and a chute at the terminal of said convoluted conveyor, substantially as and for the purpose described. 4th. In a corn popper, the revoluble case having a suitable discharge opening near the axis of said case, and an exterior screen composed of fine mesh, forming the sides of said case, and an interior convoluted screen composed of coarse mesh, having a cornuted terminal portion inclined in the direction of said discharge, opening substantially as and for the purpose described. 5th. In a corn popper, a revoluble case having heads, and an exterior and interior conveyor, consisting of a single convoluted mesh, one portion of said conveyor having fine screen, and the other coarse, and one of said parts movable in respect to the other, within the compass of the exterior screen, substantially as and for the purpose described. 6th. In corn poppers, a revoluble case having a transverse discharge opening near the axis of said case, and exterior screen having fine mesh composing the sides of said case, and having a transverse discharge, opening a cornuted chute opposite said discharge opening near the axis of said case, and an interior convoluted conveyor, having coarse mesh communicating with said discharge opening, and with said cornuted chute, substantially as and for the purpose described. 7th. In a corn popper, a revoluble case having heads and a transverse discharge opening in one of said heads, and exterior screen composing the sides of said case having fine mesh, a chute opposite said discharge opening in side of said head, and a convoluted perforated conveyor, having coarse mesh connected with said heads, having one end connected with said chute, and the other movable toward the axis of said case, substantially as and for the purpose described. 8th. In a corn popper, a revoluble case having heads, and a transverse discharge opening in one of said heads, and sides to said case having concentric parts, and a discharge opening between said parts, and an interior convoluted perforate conveyor in communication with one of said concentric parts, and one end of said conveyor movable towards the axis of said case, and a catch supporting said movable end, substantially as and for the purpose described. 9th In a corn popper, consisting of a revoluble case having heads, and a transverse feed opening in one of said heads, and sides to said case, the combination of telescopic cups, having the bottom of one of said cups connected with one of said heads, and having a feed opening registering with the feed opening in said head, substantially as and for the purpose described. 10th. In a corn popper, consisting of a revoluble case having heads, and a transverse feed opening in one of said heads, and a screen composing the sides of said case, the combination of telescopic cups having registering supply openings in the sides of said cups, and a feed opening in the bottom of one of said cups, registering with the feed opening in said head, substantially as and for the purpose described.

No. 41,441. File for Letters and Bills. (*Serre-papier.*)

Charles H. Aherns, Doon, and William O. Gottwals, Ottawa, both in Ontario, Canada, 31st December, 1892; 6 years.

Claim. -1st. In a bill file, the combination with the paper holding pins, and the arches, of hinged points connected with the arches and adapted to rest against the ends of the pins, substantially as set forth. 2nd. In a bill file, the combination with the paper holding

pins, of a rock shaft, arches mounted thereon, hinged points connected with the ends of said arches, and means for holding the rock shaft in position, all substantially as set forth. 3rd. In a bill file, the combination with the paper holding pins, of a rock shaft, carrying arches adapted to co-operate with the said pins, projections on said rock shaft, and a cam latch adapted to engage said projections to hold the arches in proper relation to the pins, substantially as set forth. 4th. In a bill file, the combination with the paper holding pin C, of a reinforcing pin K, substantially as set forth. 5th. The combination with a letter bill file having paper holding pins, arches, a metal base and a back board, of the herein described compressor for holding the papers flatly pressed against the back board, said compressor consisting of the bar N, arranged upon the rivets M, which pass through the slotted holes *n*, in said bar, to be moved against the paper holding pins C, by means of the eccentric face of the cam O, moving about a centre fixed to the material forming the compressor by which means the bar N of the same is caused to touch and press the pins C, and retain the compressor flatly down upon the papers resisting on the back board of the file through the contact of the bar N, with the pins, all substantially as as set forth.

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

2814. GASTON GUIGNARD, 2nd and 3rd six years of No. 40,493, from the 1st day of October, 1892. Improvements in Industrial Process for Manufacturing and preserving Pure yeast, 2nd December, 1892.

2815. JAMES P. LEE, 2nd five years of No. 28,166, from the 9th day of December, 1892. Improvements in and relating to Magazine and other Fire Arms, 2nd December, 1892.

2816. GUSTAVUS COOK, 2nd five years of No. 28,172, from the 13th day of December, 1892. Improvements in Spirit Levels, 3rd December, 1892.

2817. JAMES L. O'CONNOR, 2nd five years of No. 28,135, from the 3rd day of December, 1892. Improvements in Check Books, 3rd December, 1892.

2818. JAMES L. O'CONNOR, 2nd five years of No. 28,136, from the 3rd day of December, 1892. Improvements in Manifold Copying Books, 3rd December, 1892.

2819. WILLIAM F. SHEDD, 3rd five years of No. 25,241, from the 27th day of October, 1896. Improvements in Farm Fences, 5th December, 1892.

2820. LACHLAN E. McKINNON, 3rd five years of No. 15,118, from the 7th day of December, 1892. Improvements in Vehicle Dashes, 5th December, 1892.

2821. JEROD TYLER, 2nd five years of No. 28,284, from the 3rd day of January, 1893. Improvements in Car Heaters, 5th December, 1892.

2822. LUCIEN GAULARD, 2nd five years of No. 28,266, from the 13th day of December, 1892. Improvements in a System of Electric Distribution, 7th December, 1892.

2823. JAMES GRESHAM, 2nd five years of No. 28,496, from the 7th day of February, 1893. Improvements in Apparatus for applying Sand to the Driving Wheels of Locomotives, 9th December, 1892.

2824. PIERRE LATOUR, 2nd five years of No. 28,224, from the 22nd day of December, 1892. Improvements in Electric Lamp Supports, 9th December, 1892.

2825. THE LANTERN GLOBE COMPANY (assignees), 2nd five years of No. 28,149, from the 9th day of December, 1892. Improvements in Lantern Globes, Chimneys, etc., 9th December, 1892.

2826. ALBERT L. BLACKMAN, 2nd five years of No. 28,286, from the 3rd day of January, 1893. Improvements in Canal Locks and in the Method of and Apparatus for Regulating the Same, 9th December, 1892.

2827. THOMAS SHAW, 2nd five years of No. 28,222, from the 22nd day of December, 1892. Improvements in Apparatus for Automatically Testing Mine Gases, 9th December, 1892.

2828. THE GAS ENGINE AND POWER COMPANY (assignees), 2nd five years of No. 28,447, from the 2nd day of February, 1893. Improvements in Gas Engines, 12th December, 1892.

2829. GEORGE J. ATKINS, 2nd five years of No. 28,212, from the 20th day of December, 1892. Improved Means and Apparatus for the Separation of Gold and other Metals from their Ores, 15th December, 1892.

2830. CHARLES H. LAND, 2nd five years of No. 28,217, from the 20th day of December, 1892. Improvements in the Filling of Decayed Teeth, 15th December, 1892.

2831. THOMAS MANLEY, 2nd five years of No. 28,275, from the 3rd day of January, 1893. Improvements in Lath, Bolt and Picket Sawing Machines, 16th December, 1892.

2832. THOMAS BUCHANAN, 2nd five years of No. 28,230, from the 24th day of December, 1892. Improvements in Spark Arresters, 17th December, 1892.

2833. JOHN W. DOWD and STEPHEN D. FISHER, 2nd and 3rd five years of No. 28,188, from the 17th day of December, 1892. Improvements in Hot Air Furnaces, 17th December, 1892.

2834. ISAAC A. KERR, 2nd and 3rd five years of No. 28,213, from the 20th day of December, 1892. Improvements in Slat Weaving Machines, 19th December, 1892.

2835. ISAAC A. KERR, 2nd and 3rd five years of No. 28,214, from the 20th day of December, 1892. Improvements in Ventilated Barrels, Cases and other Ventilated Vessels, 19th December, 1892.

2836. LOUIS McCARTHY, 2nd and 3rd five years of No. 38,754, from the 20th day of April, 1892. Improvements in Insulators, 21st December, 1892.

2837. WILLIAM H. CURTIS, 2nd five years of No. 28,228, from the 22nd day of December, 1892. Improvements in Dust Collectors, 21st December, 1892.

2838. THE CASSEL GOLD EXTRACTING COMPANY (assignee), 2nd five years of No. 28,471, from the 6th day of February, 1893. Improvements in obtaining Gold and Silver from Ores and other Compounds, 21st December, 1892.

2839. FRANCIS R. BEAL, 2nd five years of No. 28,229, from the 22nd day of December, 1892. Improvements on Tension Joints for School Seats, 21st December, 1892.

2840. CALVIN A. CAMPBELL, 2nd five years of No. 28,221, from the 22nd day of December, 1892. Improvements in Paper Files, 22nd December, 1892.

2841. WILLIAM BUCK, 2nd five years of No. 28,390, from the 19th day of January, 1893. Improvements in Grates for Ranges and Stoves, 24th December, 1892.

2842. THE ESTEY MANUFACTURING COMPANY (assignee), 2nd and 3rd five years of No. 31,570, from the 10th day of June, 1894. Improvements on Bureaus, 24th December, 1892.

2843. THE ESTEY MANUFACTURING COMPANY (assignee), 2nd and 3rd five years of No. 31,682, from the 26th day of June, 1894. Improvements on Furniture Drawers, 24th December, 1892.

2844. THE ESTEY MANUFACTURING COMPANY (assignees), 2nd and 3rd five years of No. 31,696, from the 2nd day of July, 1894. Improvements on Bureaus, 24th December, 1892.

2845. JOSEPH A. MUMFORD, 2nd five years of No. 28,237, from the 27th day of December, 1892. Improvements in Steam Boilers, 27th December, 1892.

2846. JOSEPH A. MUMFORD, 2nd five years of No. 28,238, from the 27th day of December, 1892. Improvements in Shingle Sawing Machines, 27th December, 1892.

2847. J. HERSCHEL WETHEY, 2nd five years of No. 33,937, from the 4th day of April, 1893. Compound for Mince Pies, 29th December, 1892.

TRADE MARKS.

Registered during the month of December, 1892, at the Department of Agriculture—Copyright and Trade Mark Branch.

4483. JOSHUA THOMPSON, of Lévis, Que. Flour, 1st December, 1892.

4484. JOSHUA THOMPSON, of Lévis, Que. Flour, 1st December, 1892.

4485. H. H. WARNER & CO. of Rochester, N.Y., U.S.A. Baking Powder, 1st December, 1892.

4486. FRANCIS C. RENNER, of New Midway, Maryland, U. S. A Medicinal Preparation, 2nd December, 1892.

4487. JEAN H. LARKIN, of Toronto, Ont. Tea, 3rd December, 1892.

4488. ROBERT RAMSAY SLAVEN, of Orillia, Ont. Pills, 3rd December, 1892.

4489. JAMES CHADWICK & BRO., Ld., of Eagley Mills, near Bolton, Lancashire, England. Sewing Cotton, 3rd December, 1892.

4490. DEUTZ & GELDERMANN, d'Ay, Marne, France. Vins de Champagne, 6 decembre, 1892.

4491. JOHN MONTGOMERIE, of 361 Dunbarton Road, Partick, Lanarkshire, Scotland. Preparation of Celery or other esculent roots and seeds to be used as a substitute for Coffee, 7th December, 1892.

4492. SHIRK & SNIDER, of Bridgeport, Ont. Flour, 9th December, 1892.

4493. S. DAVIS, SONS & GOODBODY, Limited, of Dublin, Ireland. Tea, 10th December, 1892.

4494. THE WROUGHT IRON RANGE COMPANY, of St. Louis, Missouri, U.S.A. Ranges and Stoves, 10th December, 1892.

4495. JAMES A. OGILVY, Senior, JAMES A. OGILVY, Junior, and JOHN OGILVY, of Montreal, Que., trading as JAMES A. OGILVY & SONS. General Trade Mark, 10th December, 1892.

4496. THE ROYAL PULP AND PAPER CO., Ld., of East Angus, Compton Co., Que. Paper, 13th December, 1892.

4497. FRANCOIS CORMOND, of Montreal, Que. A Bleaching Preparation known as Eau de Javelle, 13th December, 1892.

4498. S. DAVIS & SONS, of Montreal, Que. Cigars, Cigarettes and Tobaccos, 14th December, 1892.

4499. THOMAS ANDERSON GREGG, of Toronto, Ont. A Newspaper, 15th December, 1892.

4500. EDWIN BOND, of Peterborough, Ont. Hams, Bacon and Lard, 16th December, 1892.

4501. THOMAS MYERS, SARAH ANN MYERS and FREDERIC FENTON MYERS, of Toronto, Ont., trading as MYERS & CO. Dip for destroying Ticks and Vermin on Sheep and other animals, 17th December, 1892.

4502. THE E. S. BURNHAM COMPANY, of the State of West Virginia, doing business in the City and State of New York, U. S. A. Clam Bouillon, 19th December, 1892.

4503. THE STRAIGHT FIVE CIGAR CO., of Montreal, Que. Cigars, Cigarettes and Tobaccos, 20th December, 1892.

4504. WILLIAM ROGERS, of Hartford, Connecticut, U.S.A. Table Implements, such as Knives, Forks, Spoons, &c., 20th December, 1892.

4505. JOSEPH LEBEAU, of Montreal, Que. Stove Polish, 20th December, 1892.

4506.
4507.
4508.
4509.
4510. BENJAMIN BROOKE & COMPANY, of Philadelphia, Pennsylvania, U.S.A. Soap, 21st December, 1892.

4511. N. K. FAIRBANK & COMPANY, of Chicago, Illinois, U.S.A. Detergent and Cleansing Powders, known as Washing Powder, 21st December, 1892.

4512. N. K. FAIRBANK & COMPANY, of Chicago, Illinois, U.S.A. Soaps and Washing Powders for family use, 21st December, 1892.

4513. CHARLES W. EMAN and JACOB S. POWLEY, of Toronto, Ont. Medicine, 22nd December, 1892.

4514. JULES PICOT, of Paris, France. A Cleansing Preparation or Lye Product, 27th December, 1892.

4515. JAMES LUNHAM GRANT, of Liverpool, England, doing business in Ingersoll, Ont., Canada. Cured Pork, Bacon and Hams, 27th December, 1892.

COPYRIGHTS

Entered during the month of December, 1892, at the Department of Agriculture—

Copyright and Trade Mark Branch.

6720. THE MONTREAL SUPPLY COMPANY CONTRACT No. ——— Henry W. Loeb, Montreal, Que., 3rd December, 1892.

6721. THE MONTREAL SUPPLY COMPANY CONTRACT No. ——— (French Version.) Henry W. Loeb, Montreal, Que., 3rd December, 1892.

6722. THE NEED OF MINSTRELSY, AND OTHER SERMONS. Memorial Volume of the late Rev. E. A. Stafford, D.D., LL.D., with introduction by Rev. D. G. Sutherland, D.D., LL.B. Wm. Briggs (Book Steward of the Methodist Book and Publishing House), Toronto, Ont., 5th December, 1892.

6723. INSURANCE EXPIRY BOOK. Byron E. Bechtel, Waterloo, Ont., 6th December, 1892.

6724. JUBILÉ SACERDOTAL DE S. E. LE CARDINAL TASCHEREAU—NOCES D'OR DE LA SOCIETE ST. JEAN-BAPTISTE, 1842-1892. (Livre.) M. l'Abbé Charles Octave Gagnon, Québec, Qué., 7 decembre, 1892.

6725. GOLDMAN'S INSTANTANEOUS INDEX. Henry Goldman, Montreal, Que, 7th December, 1892.

6726. FOUR RESPONSES TO THE COMMANDMENTS. Composed by W. H. Medley, Barriefield, Ont., 7th December, 1892.

6727. POEMS: LYRICAL AND DRAMATIC. By John Henry Brown, Ottawa, Ont., 7th December, 1892.

6728. PHOTOGRAPHIE DE LA MAQUETTE DU MONUMENT DE MAISONNEUVE projeté sur le carré de la Place d'Armes, Montreal. Joseph Michel Chalifoux, Montréal, Qué., 10 decembre, 1892.

6729. COME HOME. Song for Baritone or Contralto. Words by Mrs. Hemans, Music by Thos. H. Mason. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 14th December, 1892.

6730. OUT OF SIGHT LANCERS. By E. E. Farringer. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 14th December, 1892.

6731. THE STAR ALMANAC, 1893. Hugh Graham, Montreal, Que., 14th December, 1892.

6732. DIPLOME DU TIERS ORDRE DE LA PENITENCE. Joseph Wilbrod Perron, Ptre., Québec, Qué., 15 decembre, 1892.

6733. ONTARIO PRACTICE REPORTS, VOLUME XIV. By T. T. Rolph, Barrister-at-Law and Reporter to the Court. J. F. Smith, Q.C., Editor. The Law Society of Upper Canada, Toronto, Ont, 15th December, 1892.

6734. A WONDER WEB OF STORIES. By Margaret Ridley Charlton and Caroline Augusta Fraser. F. E. Grafton & Sons, Montreal, Que., 16th December, 1892.

6735. CONVERSE WITH THE KING. By Rev. W. H. Porter, M.A., Brantford, Ont., 17th December, 1892.

6736. ADVERTISING CHART *re* "THE EVENING TIMES," Hamilton, Ontario. Herbert Ellsworth, Hamilton, Ont., 17th December, 1892.

6737. PSYCHE POLKA. For Piano. By Mrs. Frank Mackelcan. I. Suckling & Sons, Toronto, Ont., 19th December, 1892.

6738. BELL TELEPHONE COMPANY OF CANADA, LIMITED, EASTERN EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, NOVEMBER, 1892. The Bell Telephone Company of Canada, Ld., Montreal, Que., 19th December, 1892.

6739. LJODMÆLI (1866-1892), eftir Jon Olafsson. (Book.) Jon Olafsson, Winnipeg, Man., 20th December, 1892.

6740. LOVING HEARTS. (Wenn zwei sich lieben.) Melodie von Adolfi Czibulka. Op. 210. Augener & Co., London, England, 20th December 1892.

6741. MENUET À L'ANTIQUE. En Mi bémol. Pour piano, par Anton Strelezki. Augener & Co., London, England, 20th December, 1892.

6742. VIENNESE HUMOUR. (Wiener Gemuthlichkeit.) Polka Française, pour piano, von Adolfi Czibulka. Augener & Co., London, England, 20th December, 1892.

6743. VALSE BRILLANTE. By Moritz Moskowski. Augener & Co., London, England, 20th December, 1892.

6744. HAPPY MOMENTS WALTZ. Par Leonard Gautier. J. B. Cramer & Co., London, England, 21st December, 1892.

6745. AVE MARIA in B Flat. Solo for Soprano or Tenor, by J. A. Fowler. I. Suckling & Sons, Toronto, Ont., 21st December, 1892.

6746. SOUVENIR MEDAL STEAMSHIP "BEAVER," 1835. Chas. W. McCain, Vancouver, B.C., 21st December, 1892.

6747. GRETCHEN SCHOTTISCHE. By W. H. Hargraft. Whaley, Royce & Co., Toronto, Ont., 24th December, 1892.

6748. RECIPE FOR GROWING GOOD POTATOES. (Circular.) Elias Meek, Freeport, Ont., 24th December, 1892.

6749. CONNECTING LINKS. By David Lionel Palmer, Montreal, Que., 27th December, 1892.

6750. INSURANCE EYE OPENERS No. 1—"HOW TO GET AT A MAN." By Chas. St. Morris, Vancouver, B.C., 27th December, 1892.

6751. HOME HEALTH HINTS. (Book.) Scott & Bowne, New York, N.Y., U.S.A., 28th December, 1892.

6752. HAPPY HEARTS LANCERS. By Nellie S. Smith. Whaley, Royce & Co., Toronto, Ont., 29th December, 1892.

6753. THE FLIGHT OF YEARS. Words by Frederic E. Weatherly, Music by Frederic Bevan. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 29th December, 1892.

6754. LETTRES DU P. F. X. DUPLESIS de la Compagnie de Jesus. Accompagnées d'une Notice Bigraphique et d'Annotations. Par J. Edmond Roy, Levis, Que., 29 décembre, 1892.

6755. THE SILENT REMINDER, 1893. Miss Jessie Gourlay, London, Ont., 30th December, 1892.

6756. INSPIRATION WALTZ. By John A. Sims, Toronto, Ont., 30th December, 1892.

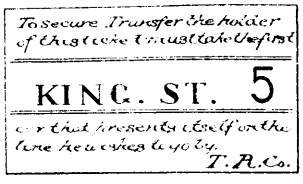
6757. BANKS AND BANKING. By J. J. Gormully, Q.C., and R. V. Sinclair, Barrister-at-Law. Second Edition. Ottawa, Ont., 30th December, 1892.

6758. RULES FOR ARDRI; or, THE PARLOUR GAME OF FOOT BALL. Frederick Thomas Butler, Toronto, Ont., 31st December, 1892.

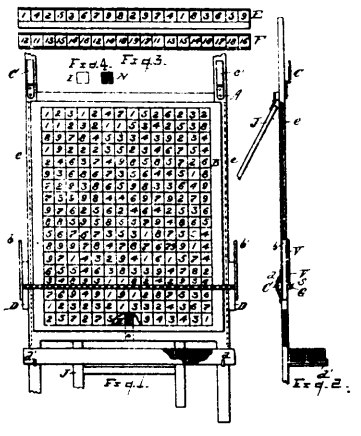
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

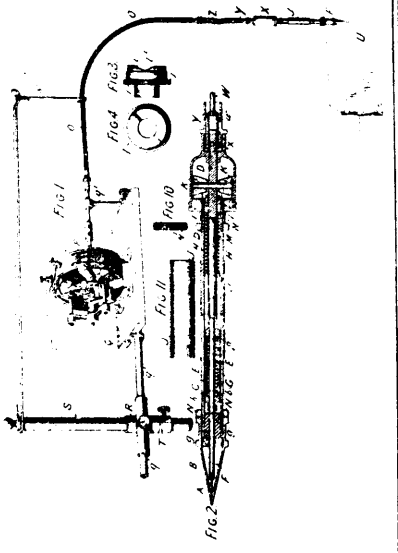
Vol. XX. DECEMBER, 1892. No. 12.



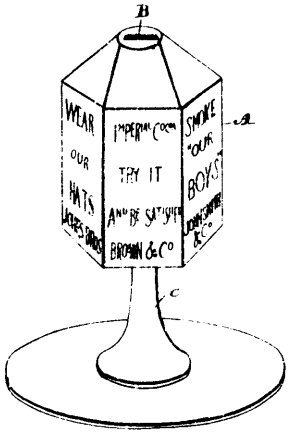
41124 Maclean's Transfer Ticket.



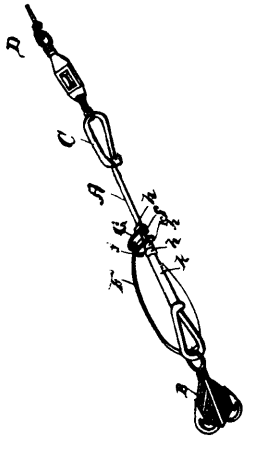
41125 Evert's Adjustable Number Device.



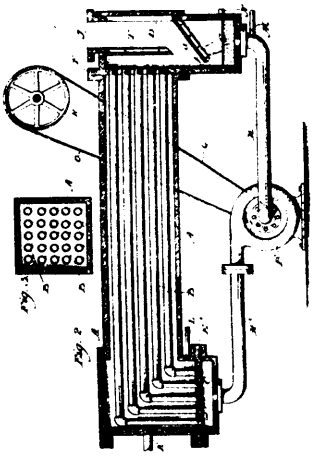
41127 Phillips' Pen.



41128 Camvin and White's Toy Bank Advertising Device.

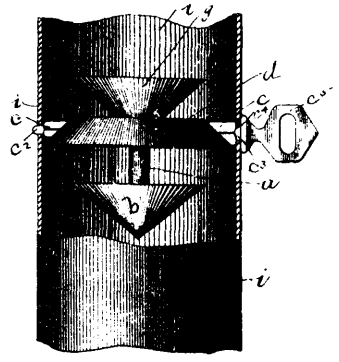


41129 Pflueger's Spoon Bait.

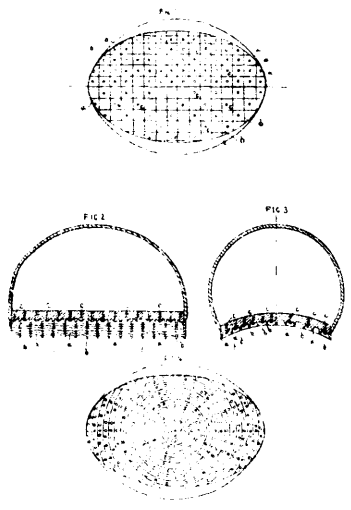


41130 Cooper's Method of and Apparatus for Evaporating Liquids.

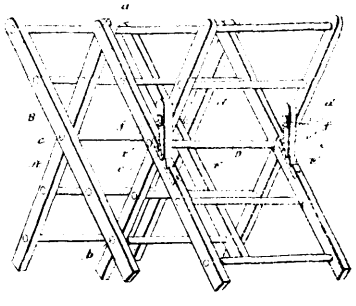
41131 Larkin's Hair Pin.



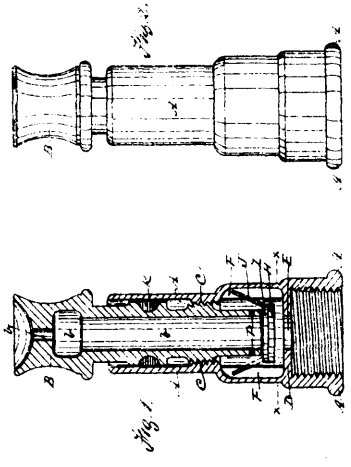
41132 Couch's Damper.



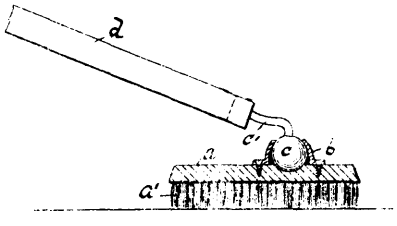
41133 Taylor's Artificial Sponge.



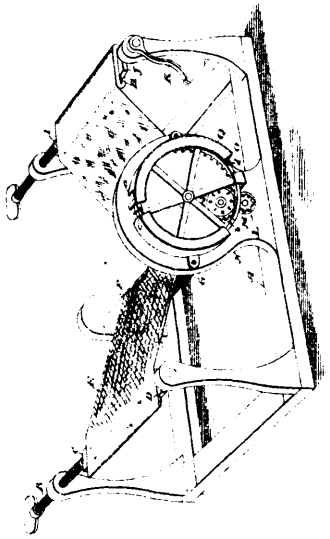
41134 North's Clothes Drier.



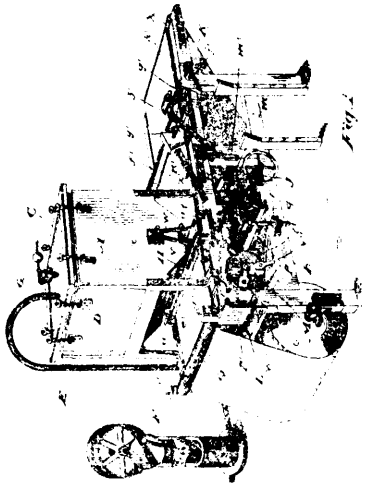
41135 Carroll's Hose Nozzle.



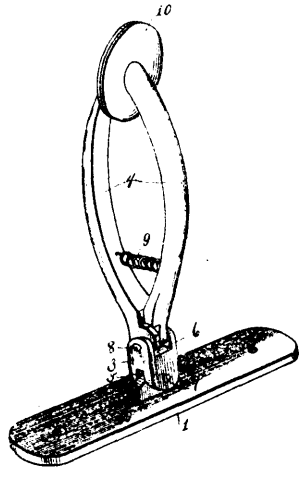
41136 Blanchard's Scrubbing Brush.



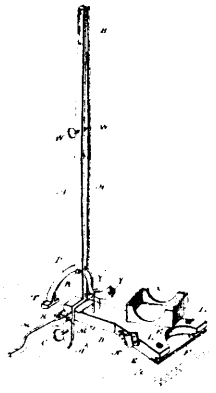
41137 Edmand's Blocking and Measuring Device.



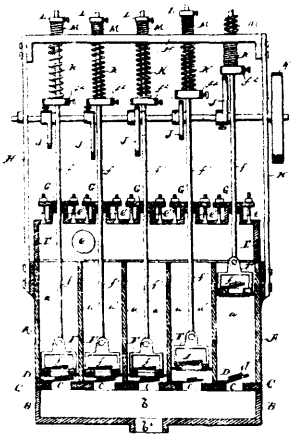
41138 Robertson's Machine for making Candy-drops.



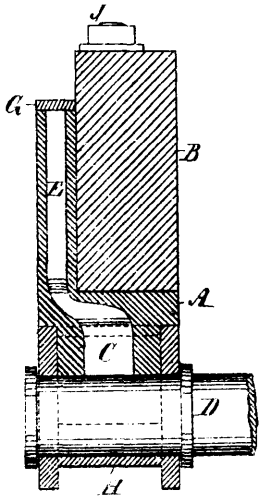
41139 Hamble's Clamp for Bed Clothes.



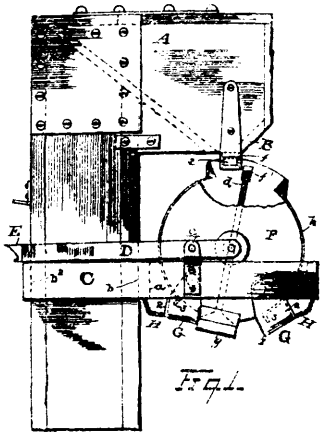
41140 Zauner's Floor Clamp.



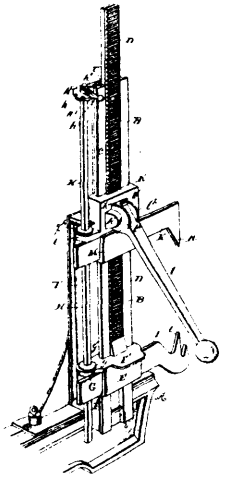
41141 Dykes' Pump.



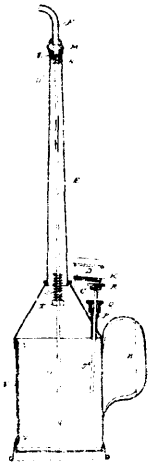
41142 Fergie's Car Axle Lubricating Box.



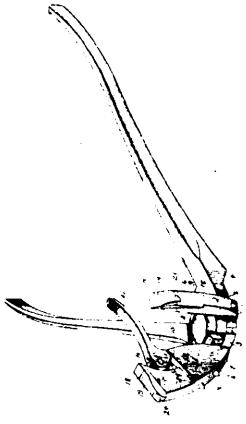
41144 Henry's Meter.



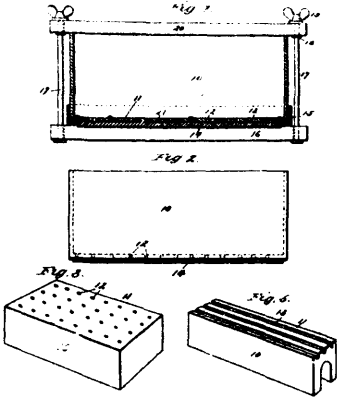
41145 Hanna's Saw Mill Dog.



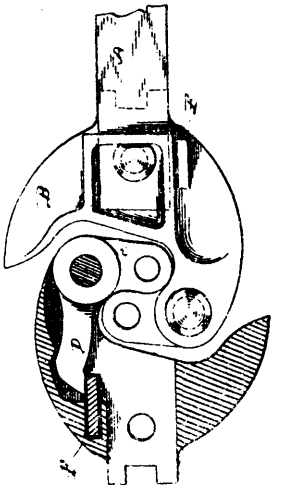
41146 Dunlap's Oil Can.



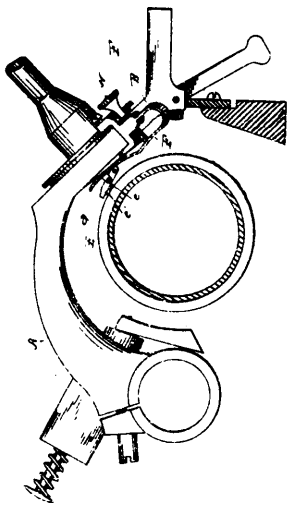
41147 Gallant's Combination Fence Tool.



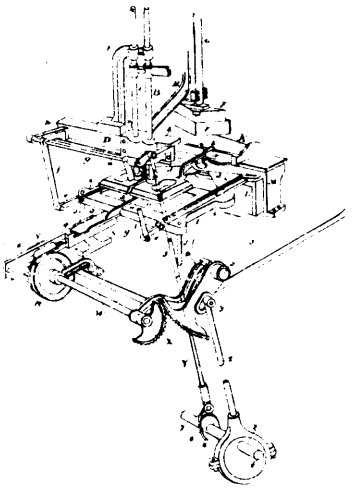
41148 Wolfe's Electrotype and Stereotype Blocks.



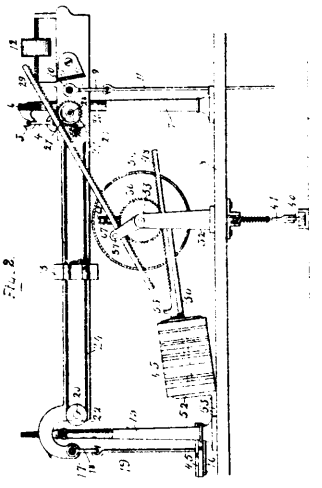
41149 Fox's Car Coupler.



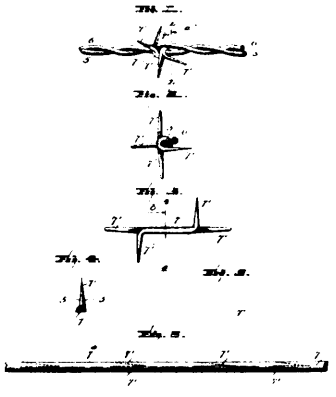
41150 Glass' Phonographic Attachment.



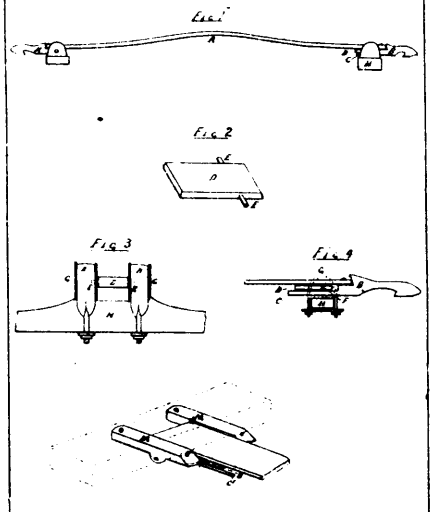
41151 Bouvier's Envelope Machine.



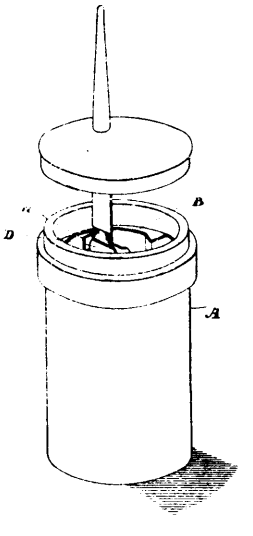
41152 McFarlane's Weighing Scales, Recorder and Register.



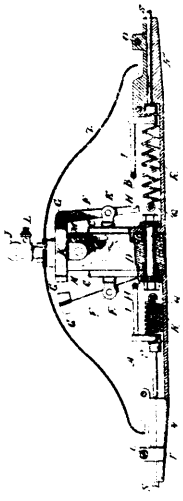
41153 Curtis' Barbed Wire.



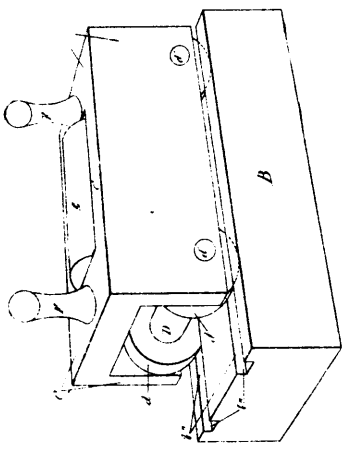
41154 Robb's Mode of attaching Vehicle springs.



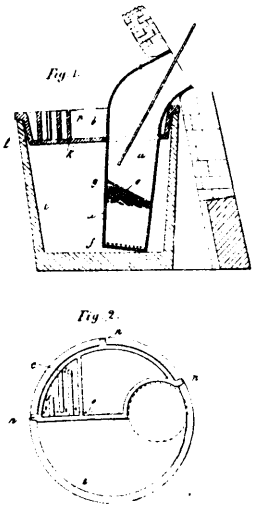
41155 Aikins' Device for removing surplus mucilage from a brush.



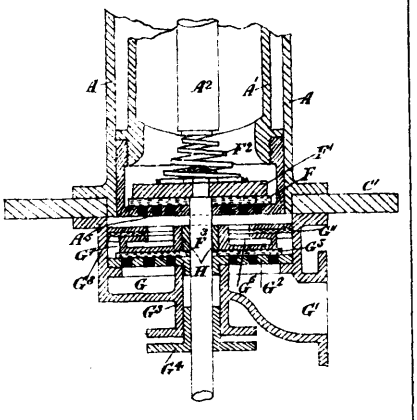
41156 Johnston's Disconnector for overhead conductors.



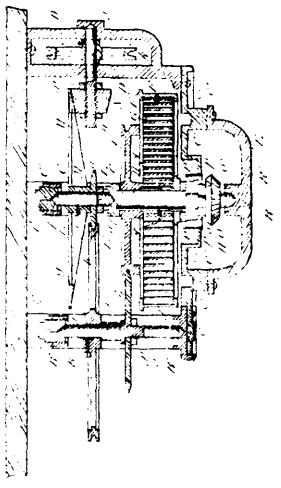
41157 Kirk's Arm and Wrist Rests.



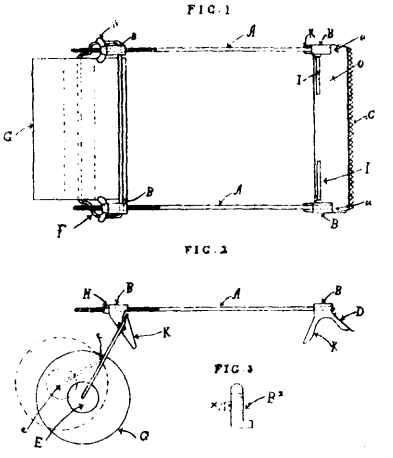
41158 Epstein's Filtering Tube.



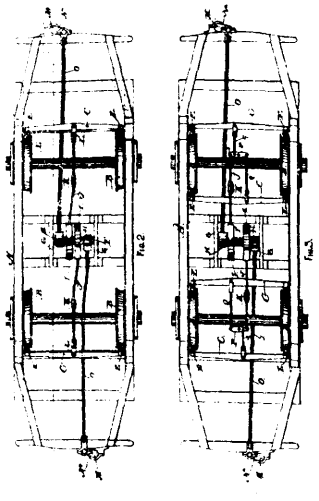
41159 Goodlet's Machine for compressing and accumulating Air and Water.



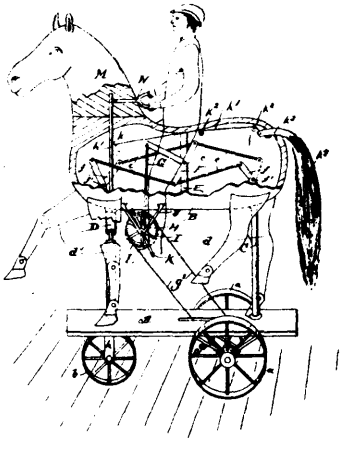
41160 Reed's Spring Motor.



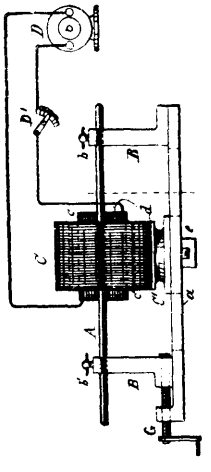
41161 Bullock's Telephone Paper Rack.



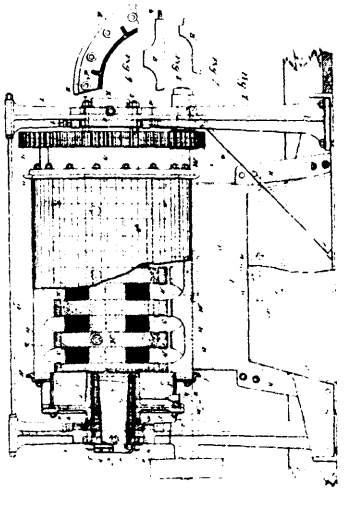
41162 Zimmermann and Stiles' Car Brake.



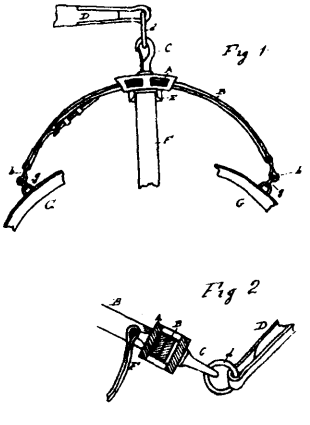
41163 Snyder's Toy.



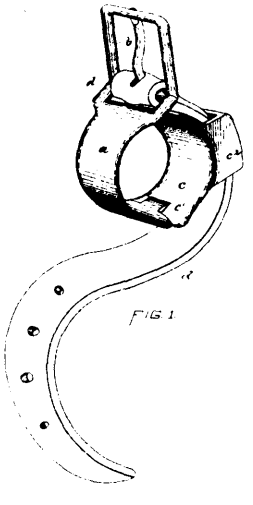
41164 Dewey's Method of Electrically Welding Metals.



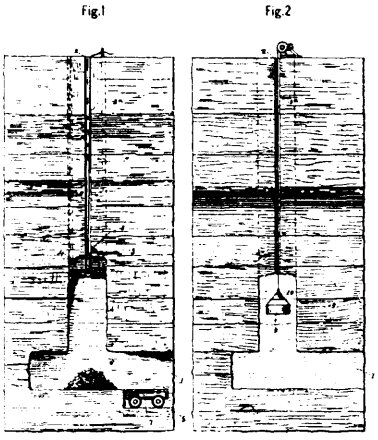
41165 Wenstrom's Magnetic Separator.



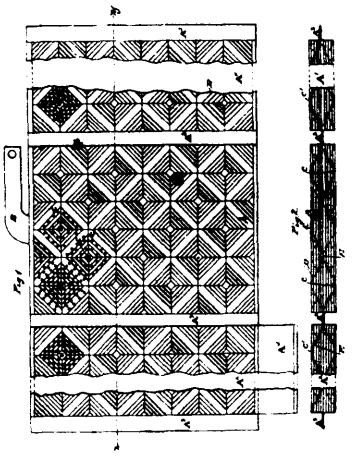
41166 Macrae's Harness.



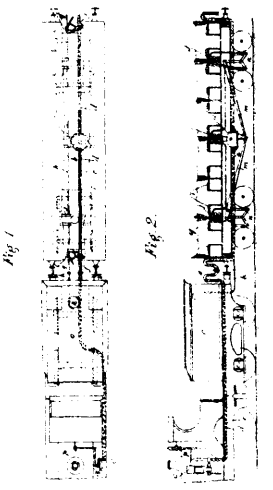
41167 Porter's Thill Tug.



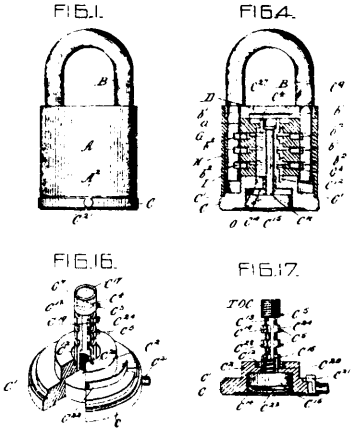
41168 **Long's Process of Excavating Shafts through rock.**



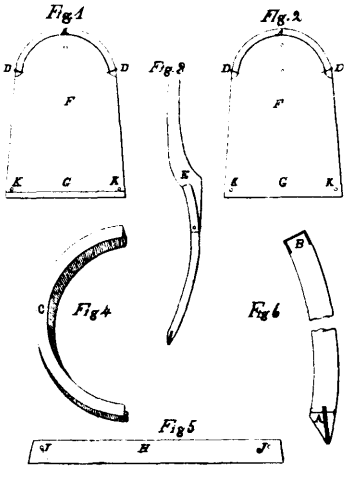
41169 **Hartmann's Storage Battery.**



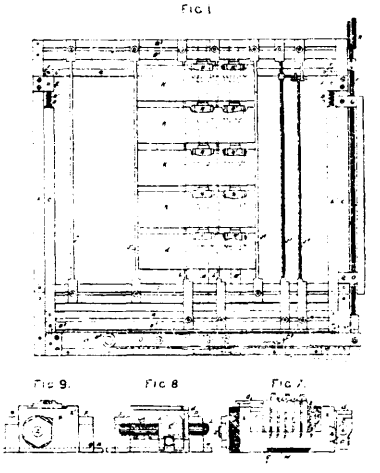
41170 **Lapraik's Heating Apparatus for Railway Cars.**



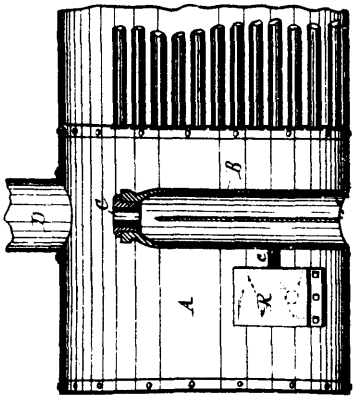
41171 **Daniels' Combination Lock.**



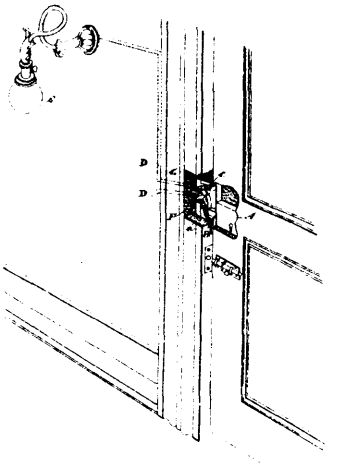
41772 **Lemieux's Shovel.**



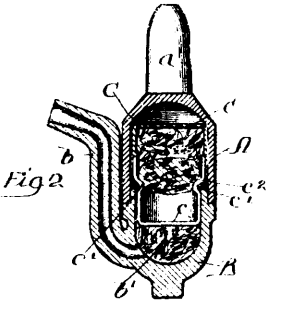
41174 **Smith's Numbering and Cheque Printing Machine.**



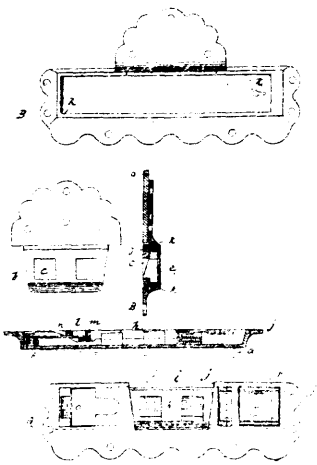
41175 **Hartigan's Exhaust Pipe for Locomotives**



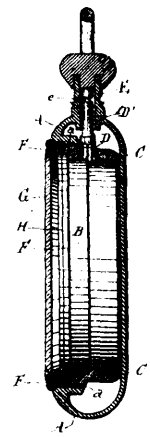
41176 **Green's Door Lock Switch for Electric Lights.**



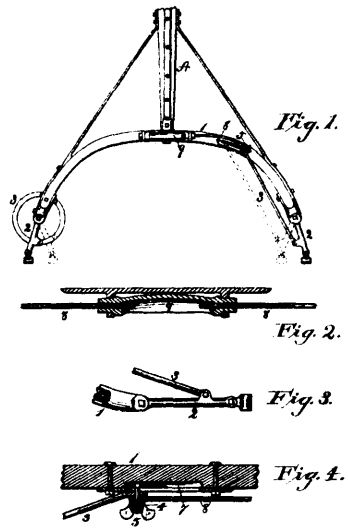
41177 **Sencenbaugh's Inhaler and Medicator.**



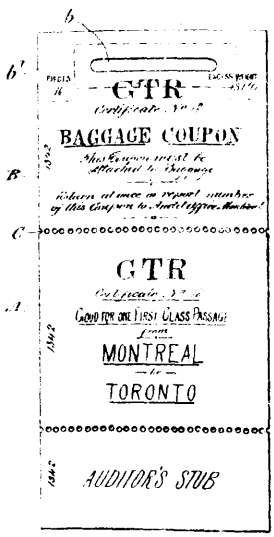
41178 Jones' Trunk Fastener.



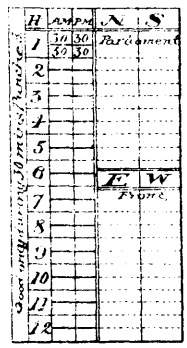
41179 Borgel's Watch Case.



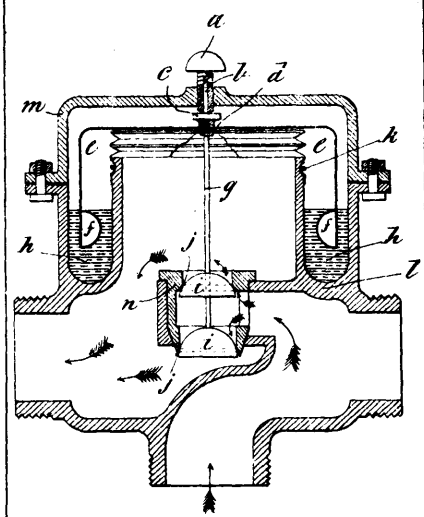
41180 Pike's Vehicle Pole.



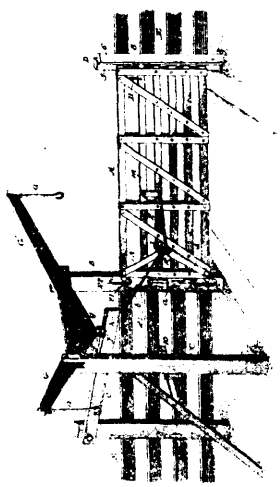
41181 Martin's Fare and Baggage Checking System.



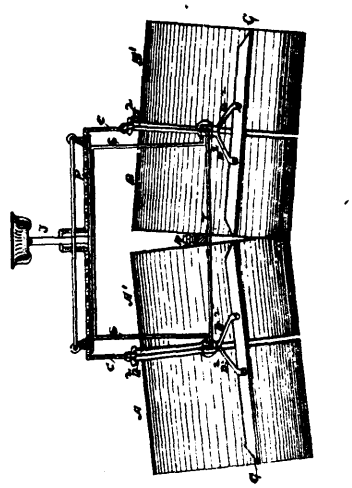
41182 Boeckh's Transfer Ticket.



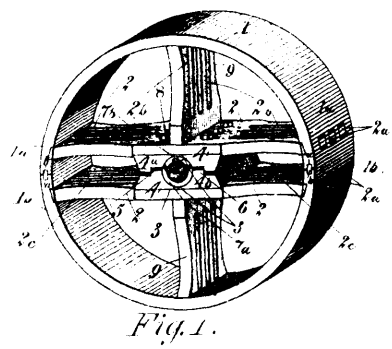
41183 Love's Gas Regulator.



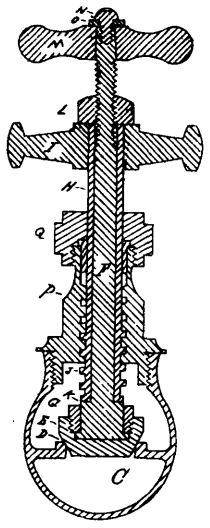
41184 White's Gate.



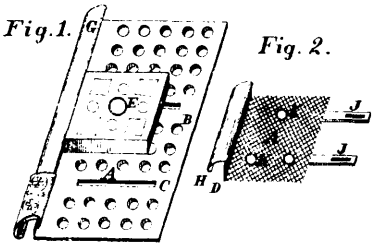
41185 Grant's Land Roller



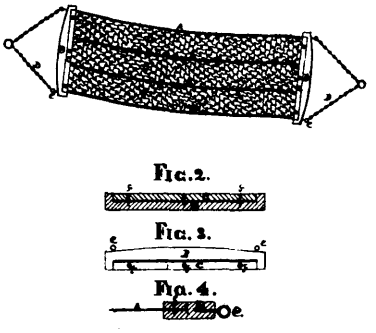
41186 Standish and Reid's Pulley.



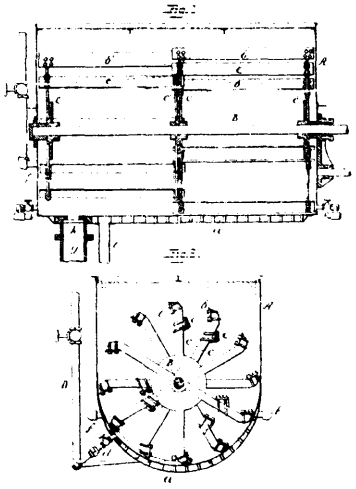
41187 Tower's Globe Valve.



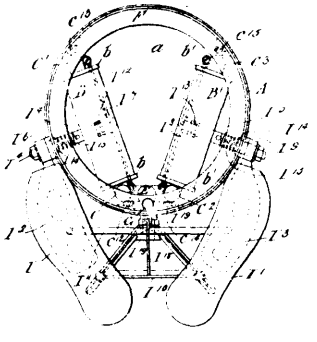
41188 Marsh's Frame or Tiles,



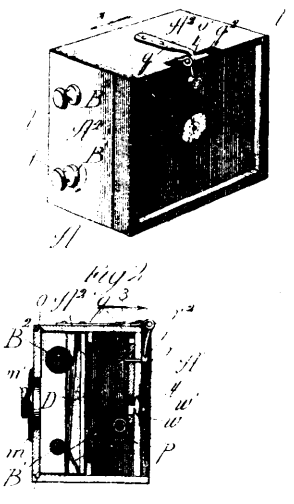
41189 Johnston's Hammock.



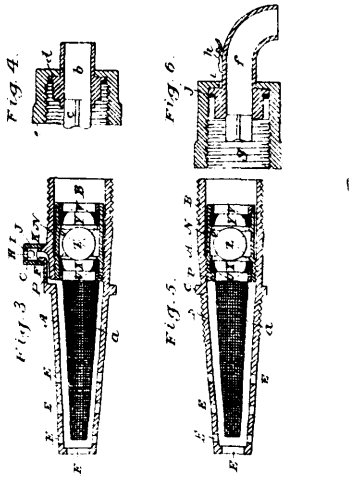
41190 Billings' Method of making Beer.



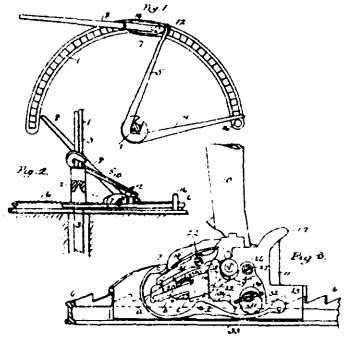
41191 Noble and Brown's Pump.



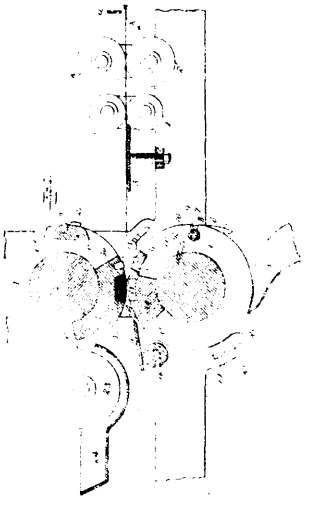
41192 Esmond's Camera and Graphoscope.



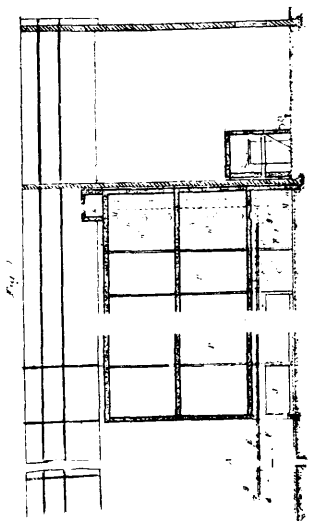
41193 Bacon's Tapping Cock and Valve.



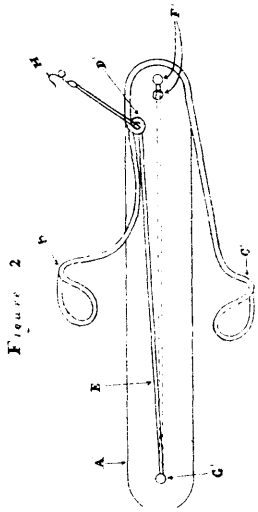
41194 Forgie's Wrench.



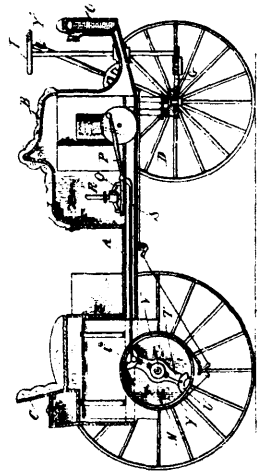
41195 West's Paper Bag Making Machine.



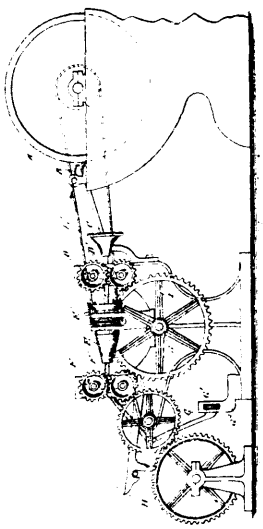
41196 Kesketh and Marcet's Refrigerator.



41197 Bullock's Vest Shield.



41198 Marshall's Steam Vehicle.



41199 Harley's Wool Carding Machine.

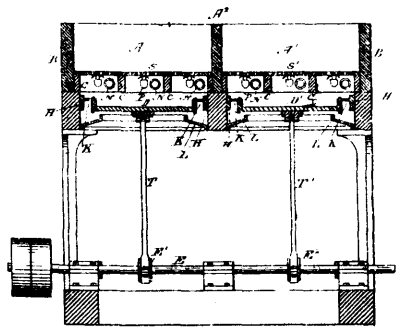
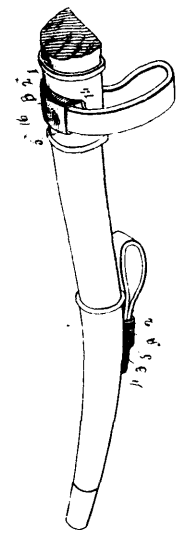
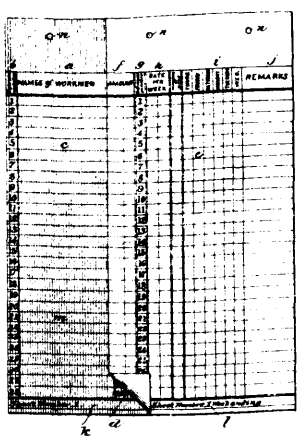


Fig. 1

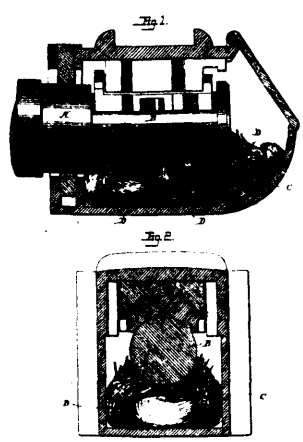
41200 Foster's Pulp Screening Machine.



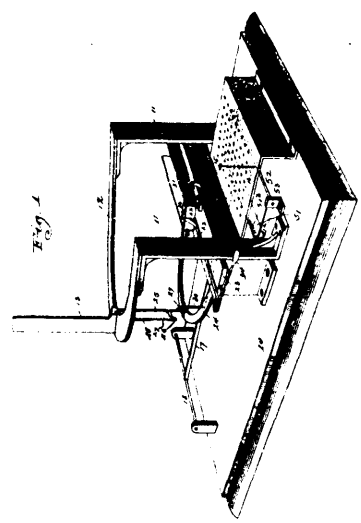
41201 Schnarr's Fastener for Thill Loops.



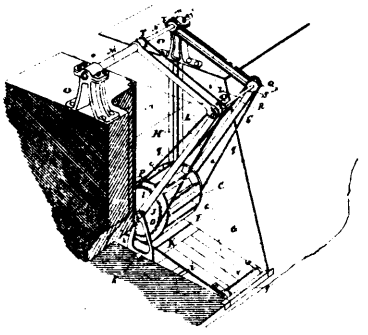
41202 Scattergood's Time Record Book.



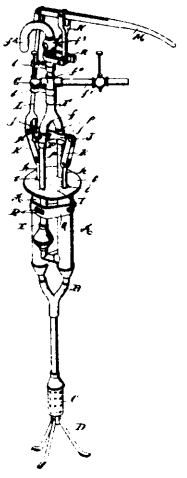
41203 Edgar and Thomas' Method of Lubricating the Journals of Railway Cars.



41204 Odell's Type Setting Machine.

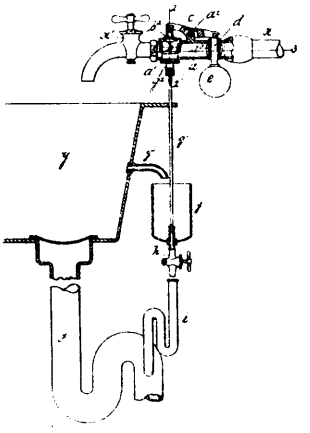


41205 Porter's Tidal Motive Power.

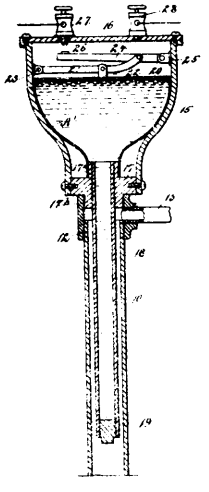


41206 Smith's Pump.

Fig. 1.



41207 Knox's Overflow Cut-off.



41208 Rodgers' Water Indicator for Boilers.

Fig. 1.

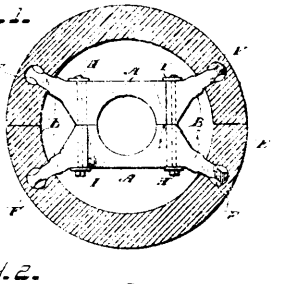
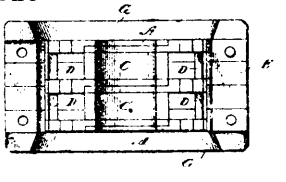
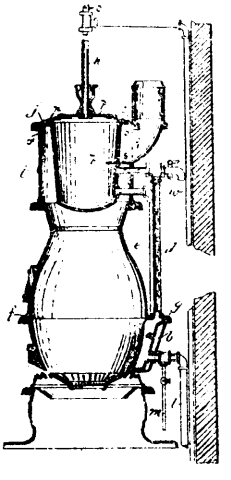


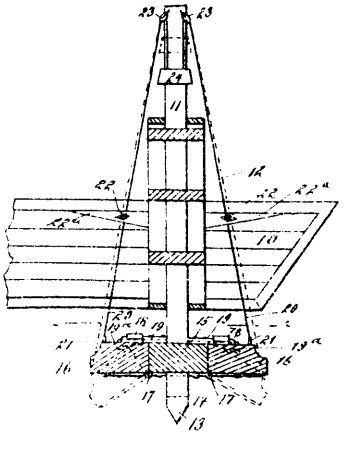
Fig. 2.



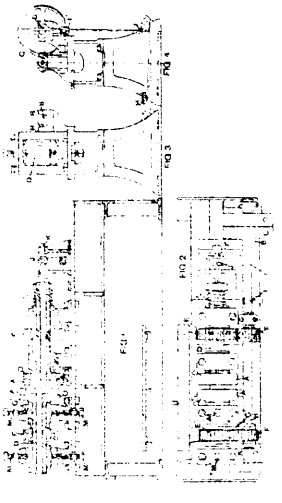
41209 Gilbert's Pulley.



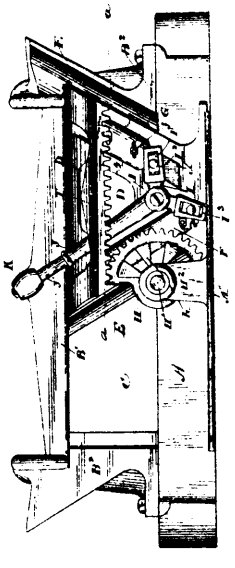
41210 Brewer's Hot Water Attachment for Stoves.



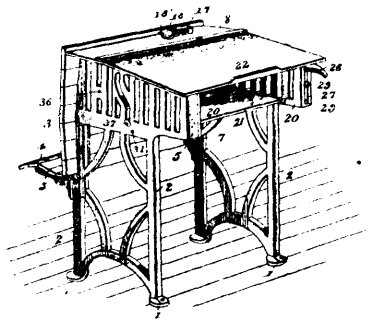
41211 Pike and McDairmid's Foot for Dredge Anchors.



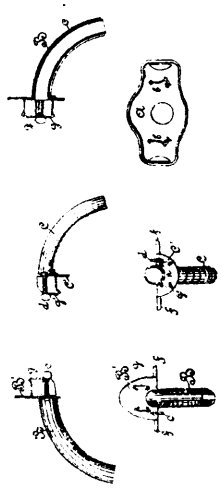
41212 Fairbairn and Well's Apparatus for Forging Screws by Rolling.



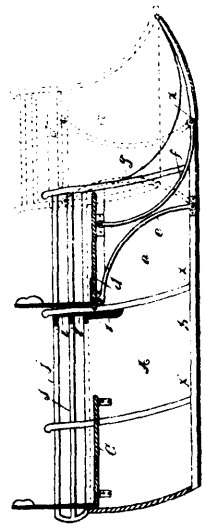
41213 Meracher's Wood Trimming Machine.



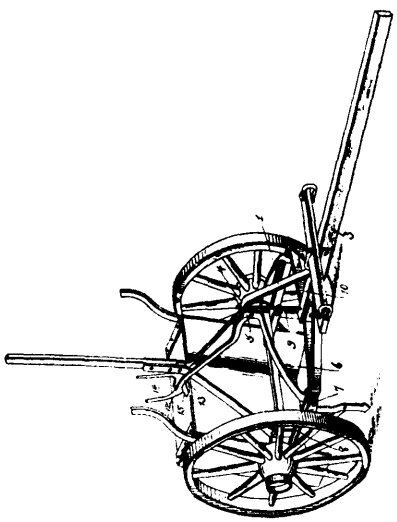
41214 Barnes' School Desk.



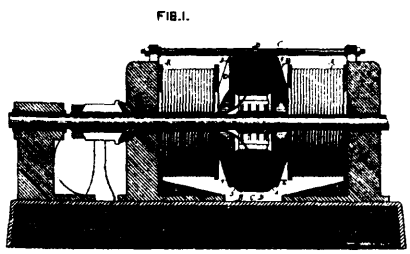
41215 Hartstein's New Canules for Tracheotomy.



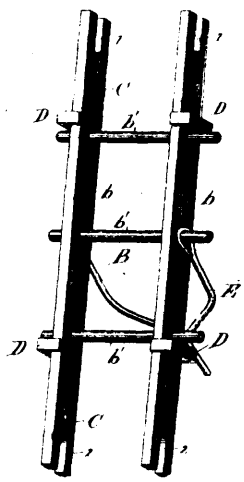
41216 Wells and Morrill's Carriage.



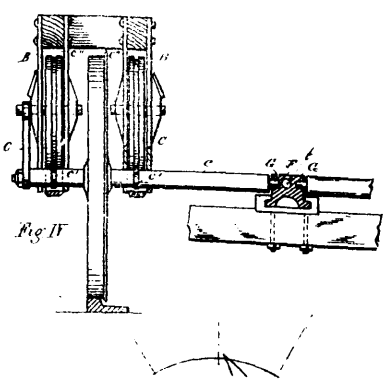
41217 Broadfoot's Wheeled Scraper.



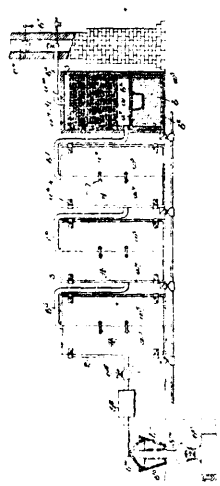
41218 Short's Armature for Dynamo Electric Machines.



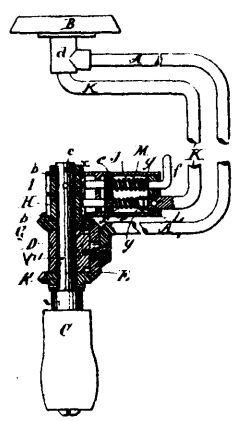
41219 Strumbert's Sectional Extension Ladder.



41220 Crook's Motor.

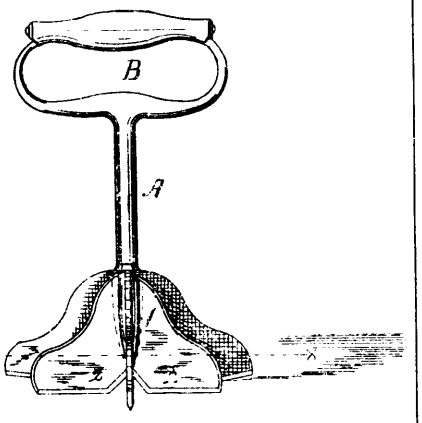


41221 Morris and Bailey's Apparatus for Producing Lead Carbonate.

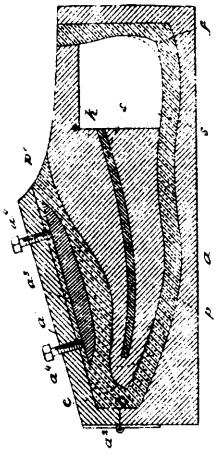


41223 Alden's Bit Stocks

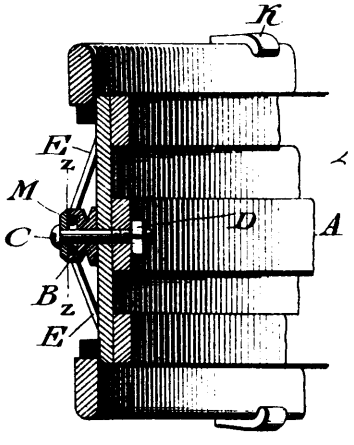
41224 Hilts' Pipe Wrench.



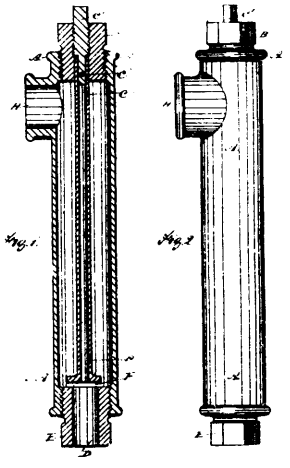
41225 Allen's Chopping Knife.



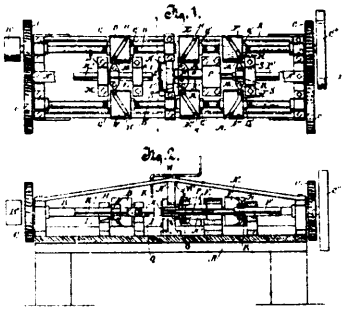
41226 Willey's Method of and Means for making Individual Casts and Patterns therefor.



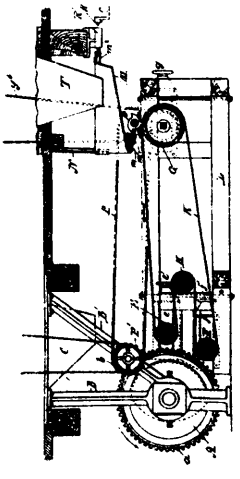
41227 Soistmann and Pepper's Drum.



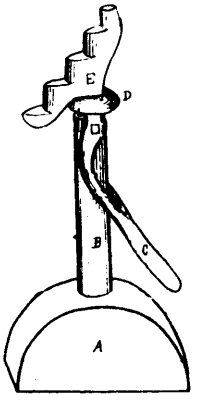
41229 Clark's Steam Trap.



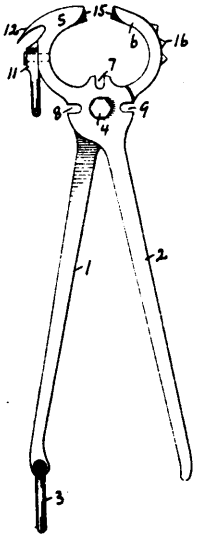
41230 Altmann and Maxwell's Nut Shearing and Punching Machine.



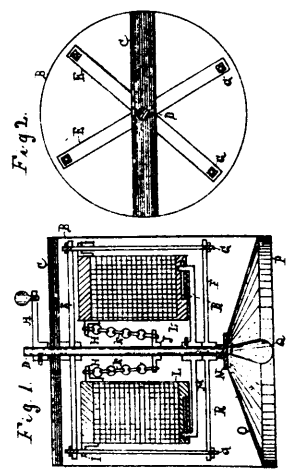
41231 Wenstrom's Apparatus for Feeding to Magnetic Separators.



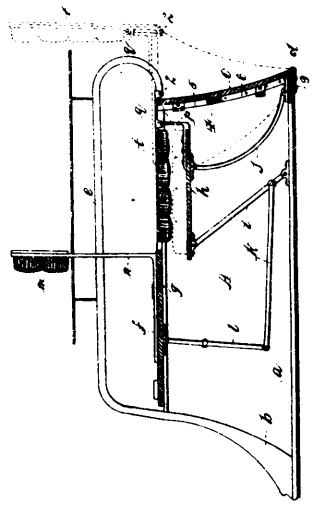
41232 Bell's Vehicle Jack.



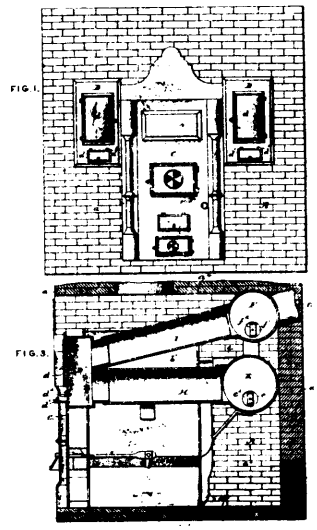
41233 Heard's Fence tool.



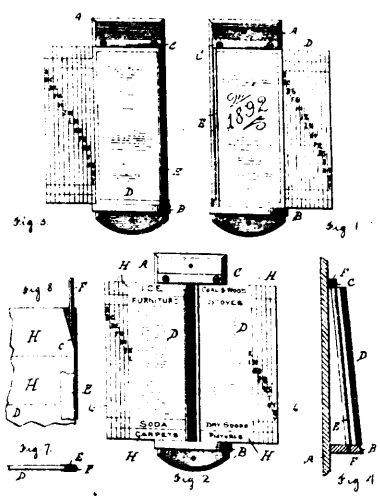
41234 Bayless' Honey Extractor.



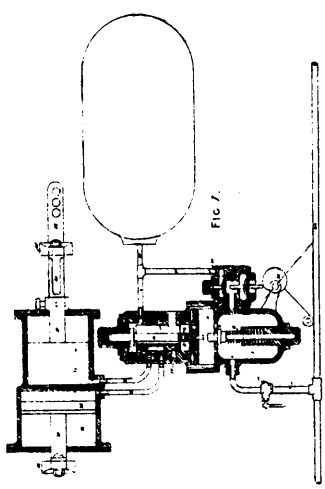
41235 Wells' Carriage.



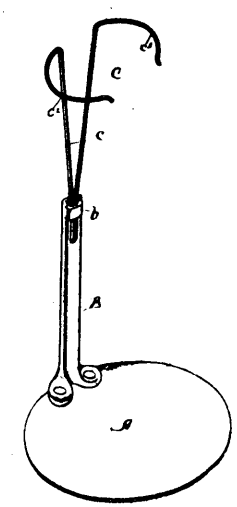
41236 Scates' Furnace.



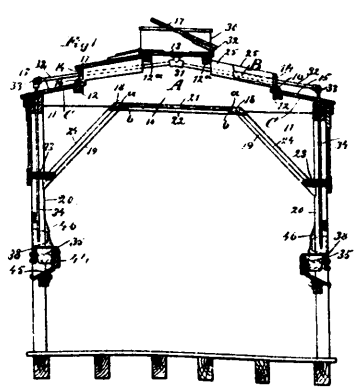
41237 Bacon's Index.



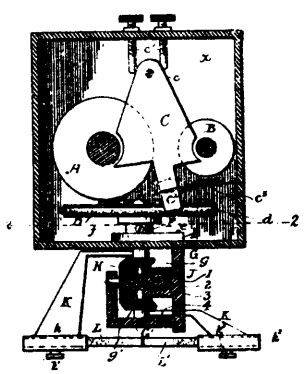
41238 Shaw's Brake.



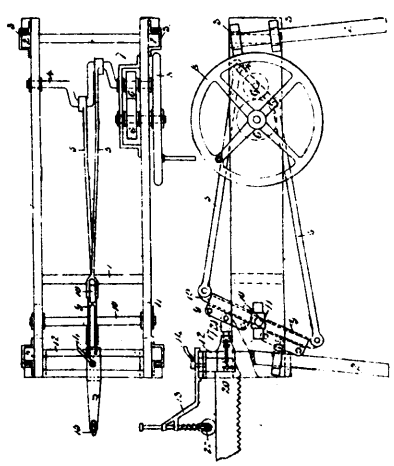
41239 Willcox's Doll support.



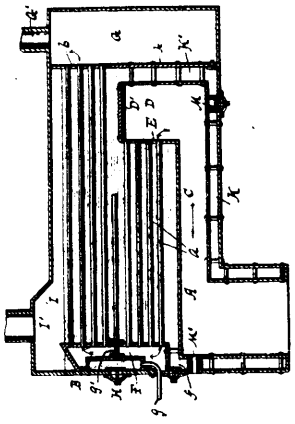
41240 Canda's Cattle Car.



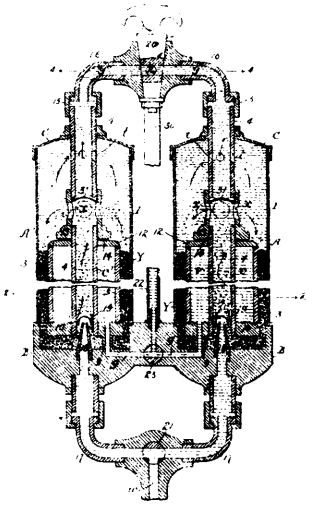
41241 Buchanan's Arc Lamps.



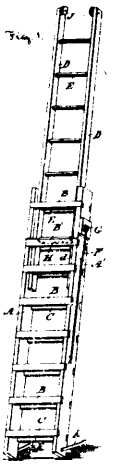
41242 Olsen's Wood Sawing Machine.



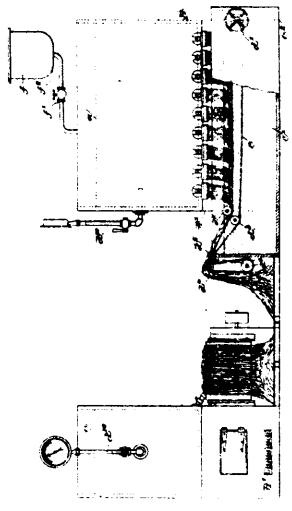
41243 Lester's Locomotive Boiler.



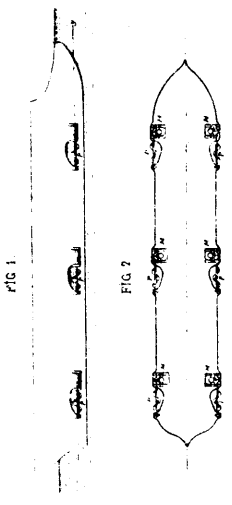
41244 McDonald's Method of Cleaning Filtering Surfaces.



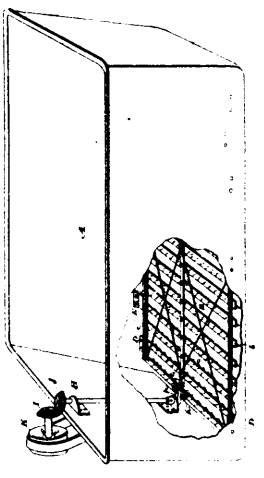
41245 Cross' Extension Ladder.



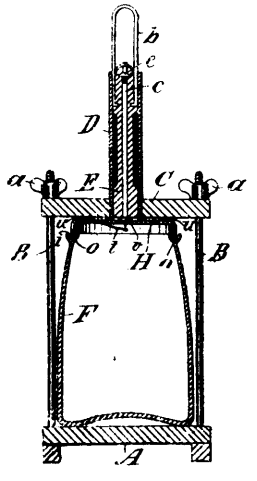
41246 Morris' Apparatus for making Lead Fibre.



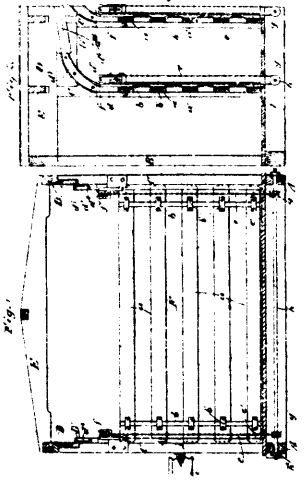
41247 Merritt's Propeller.



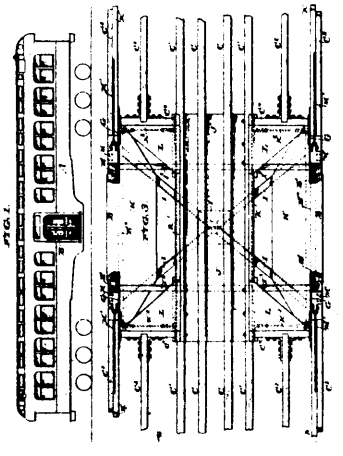
41248 McLellan's Agitator for Mixed Paints.



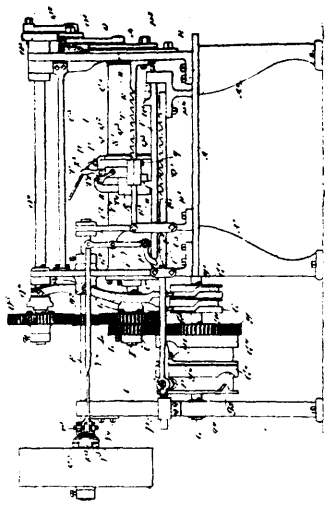
41249 Isler's Fruit Cleaning Device.



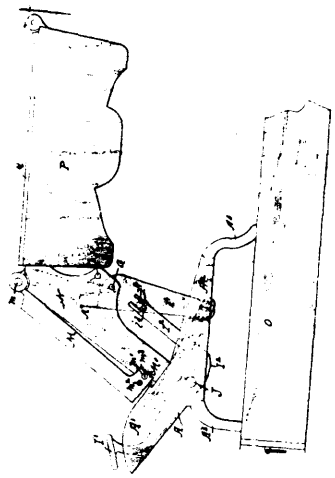
41250 Cauda's Cattle Car.



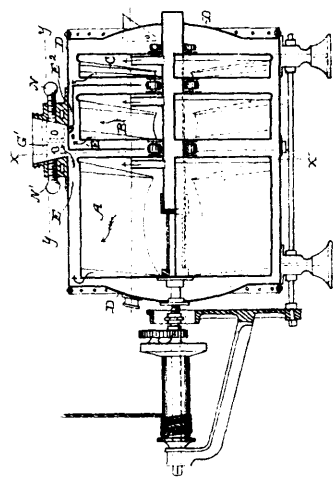
41251 Farmer's Railway Car.



41252 Fairman's Machine for making Stove Pipe Elbows.

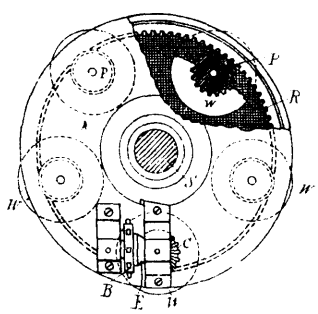


41253 Adams' Money Changer.

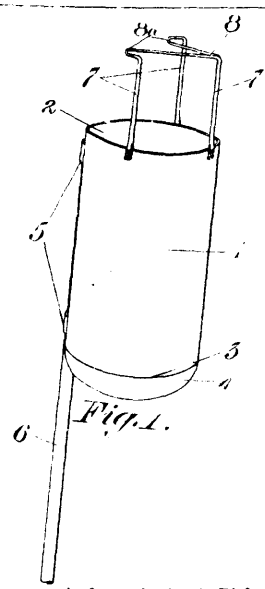


41254 Badlam's Air Supplying Device for Gas Machines.

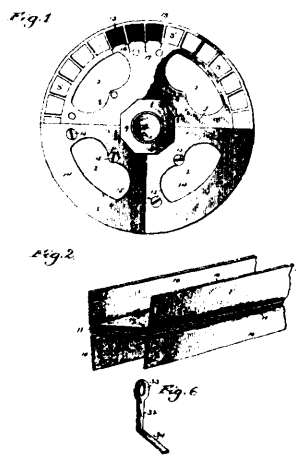
Fig. 2.



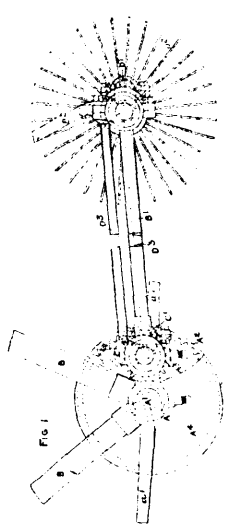
41256 Hadstate and Martin's Numbering Machine.



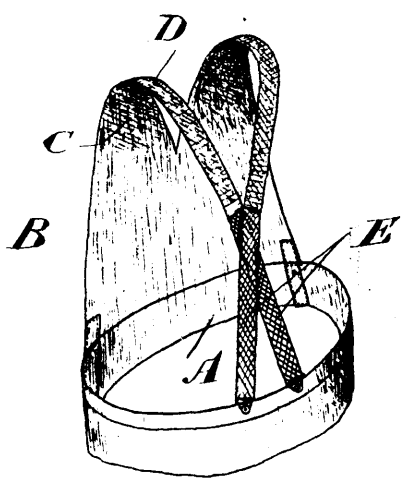
41257 Anderson's Apple Picker.



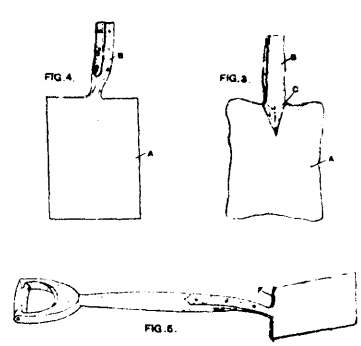
41258 McLaughlin's Armature for Electric Motors.



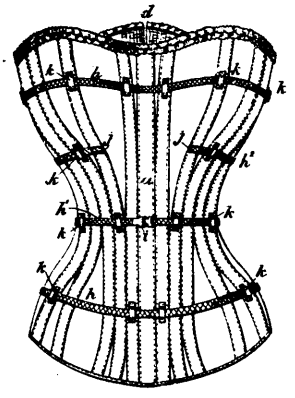
41259 Battersby's Bicycle, &c.



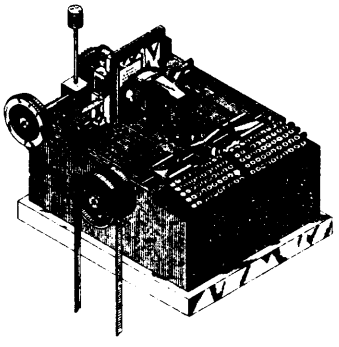
41260 Latham's Overall.



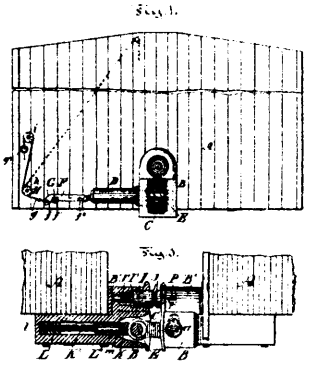
41261 Caldwell's Spade or Shovel.



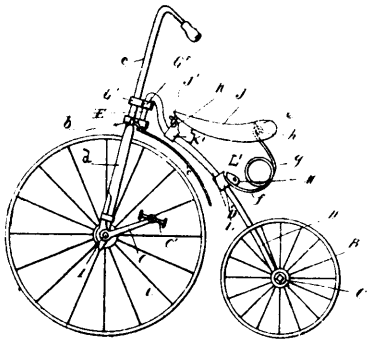
41262 Rothschild's Corset.



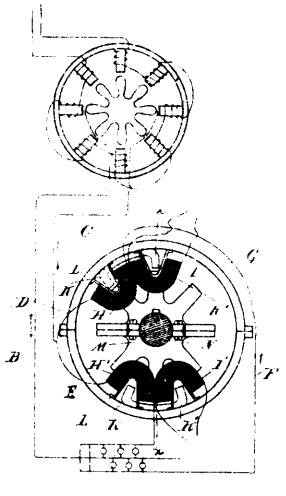
41263 Heath and Verdin's Typographic Machine.



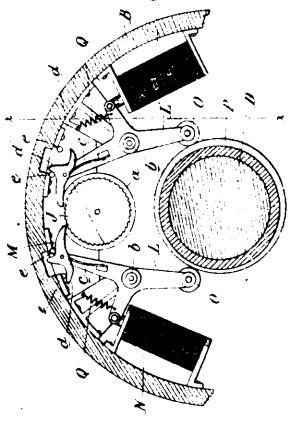
41264 Well's Car Coupler.



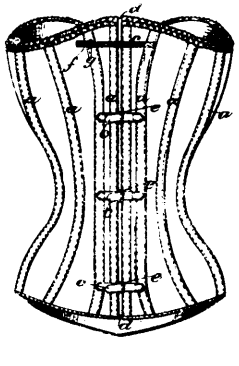
41265 Gendron's Velocipede.



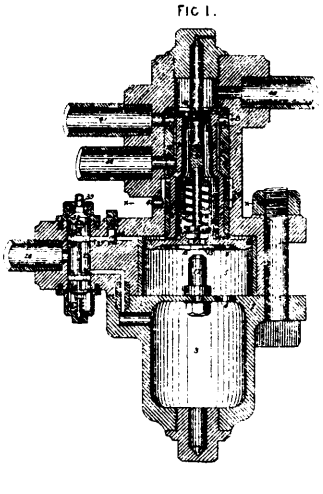
41266 McElroy's Current Director.



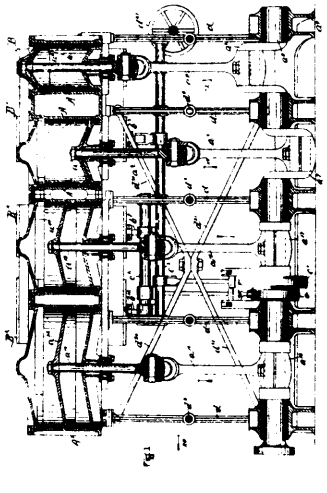
41267 McElroy's Current Regulator.



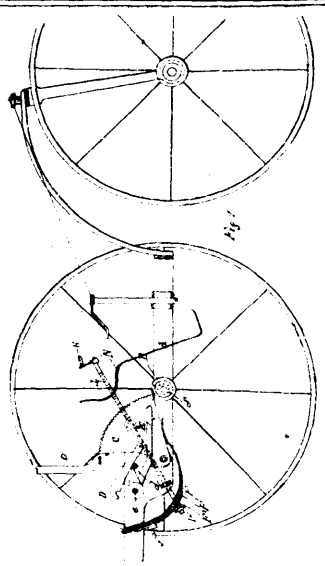
41268 Rothschild's Corset.



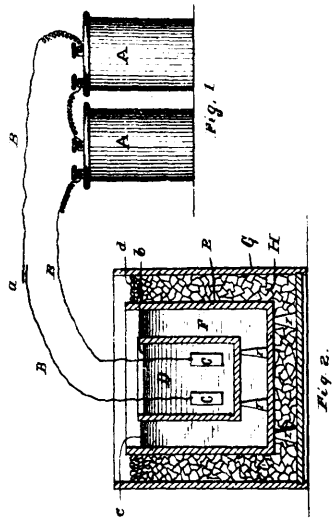
41269 Battye's Brake.



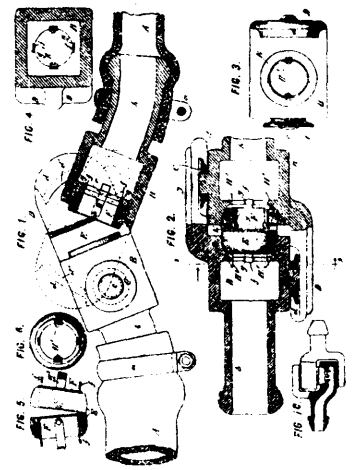
41271 Mosher's Steam Engine.



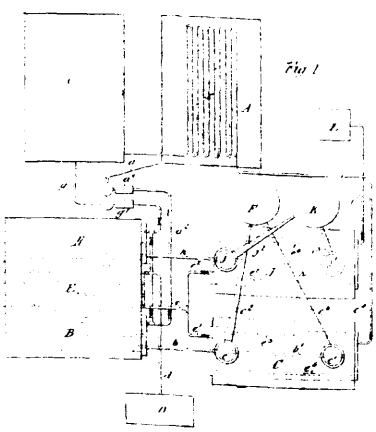
41272 Ruks' Mechanism for Driving Vehicles.



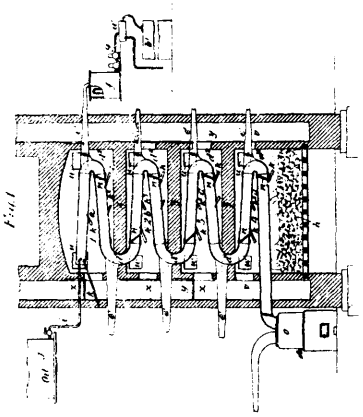
41273 Milliken's Process of Purifying Liquids.



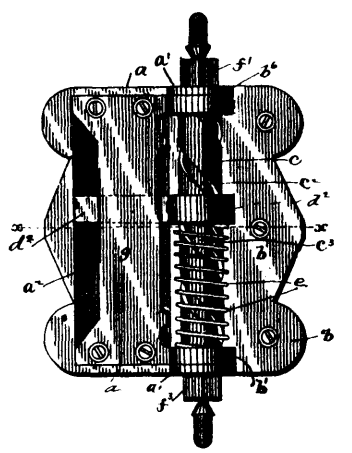
41274 Balmore and Gold's Hose Coupling.



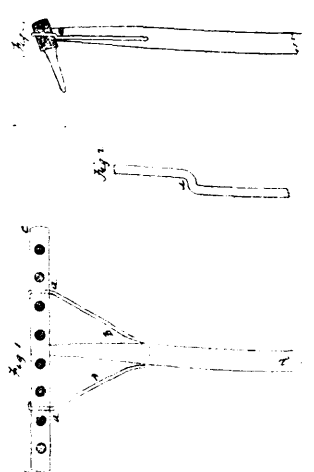
41275 Dvorkovitz's Apparatus for Distilling Liquid Hydrocarbon.



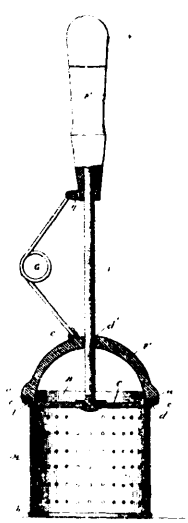
41276 Mason's Apparatus for Distilling Oil.



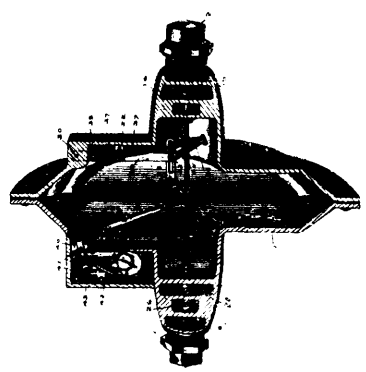
41277 McCauley's Spring Hinge.



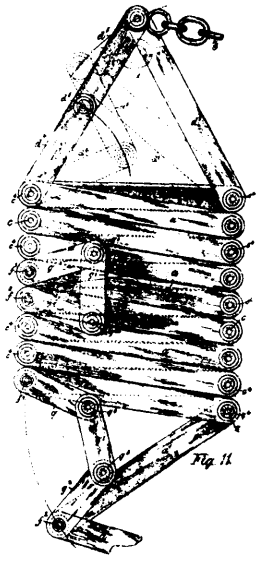
41278 Buschlen's Hand Hay Rake.



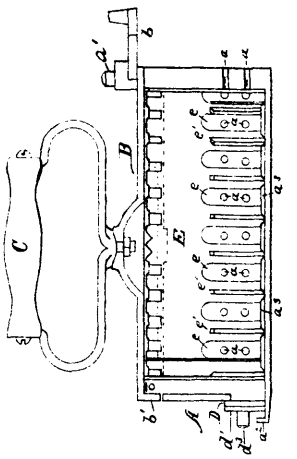
41279 Seltzer's Egg Beater, Masher, &c.



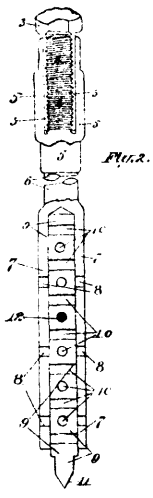
41280 Knickerbocker's Meter for Gas.



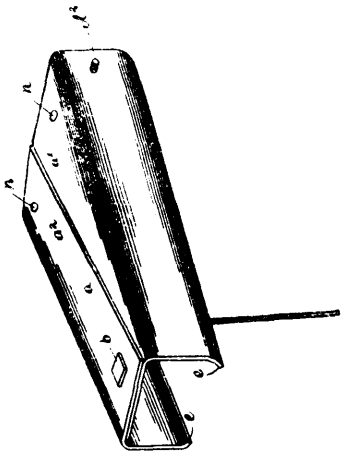
41281 Leo's Collapsable Ladder.



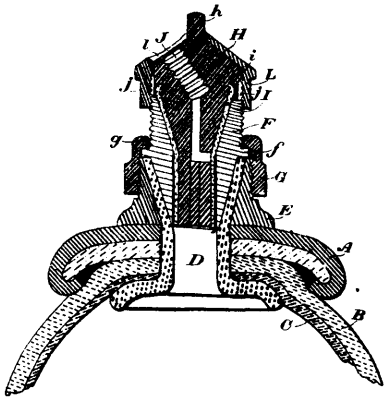
41282 Singer's Sad Iron.



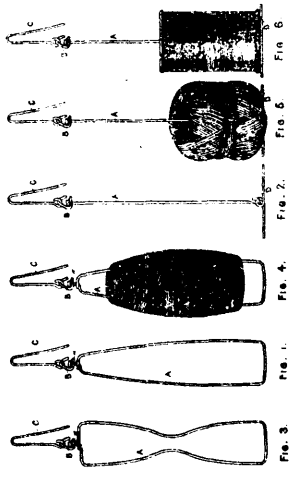
41283 Heeson's Self-feeding Ratchet Brace.



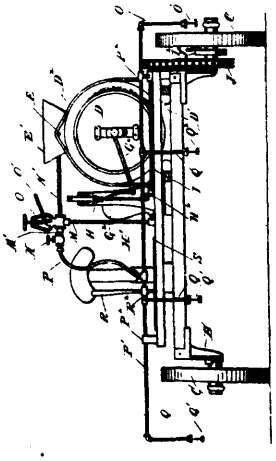
41284 Riley's Guard for railway tracks and switches.



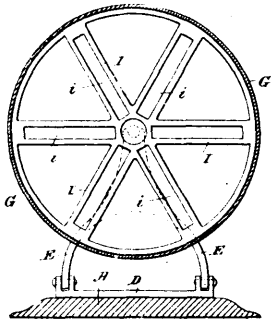
41285 LaForce's Air Valve.



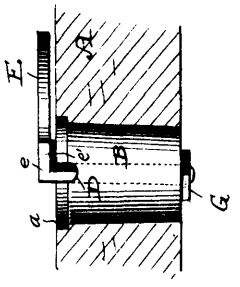
41286 Dennis and Hilton's Holder for wool, thread, &c.



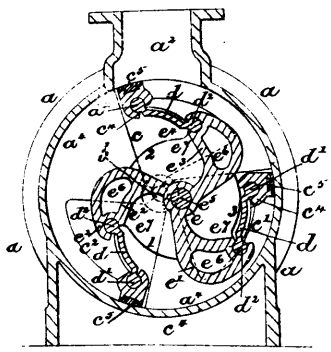
41287 Caswell's Device for Distributing liquid Poison.



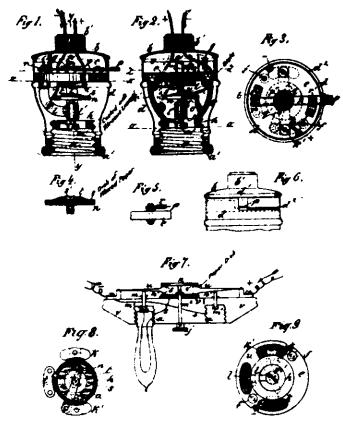
41288 Camp's Ice Cream Freezer.



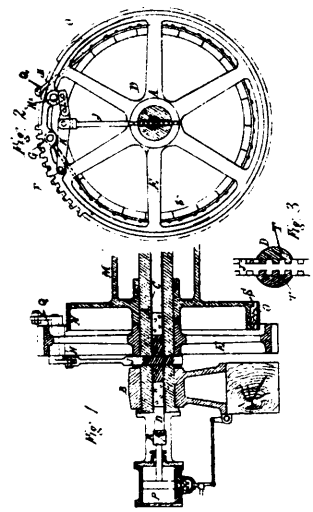
41289 Sprague's Ink Well Cover.



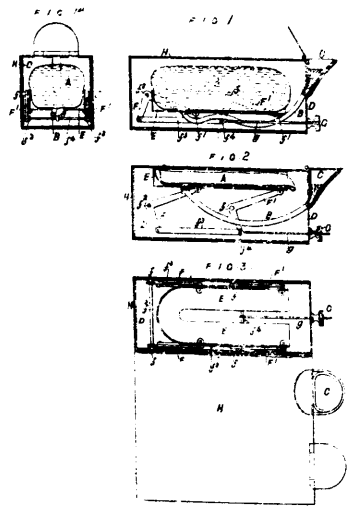
41290 Oddie's Rotary Engine.



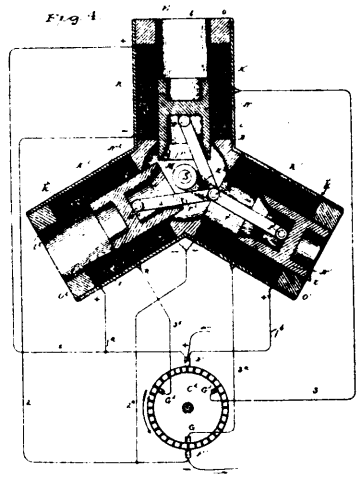
41291 Wood's Electric Lamp Holder.



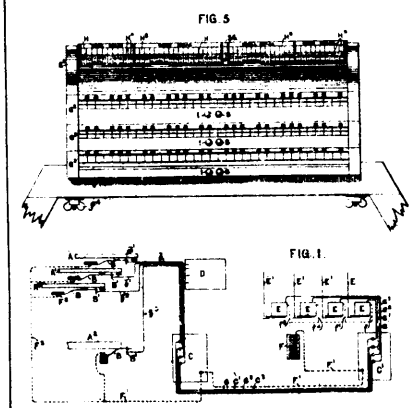
41292 Robinson's Friction Clutch.



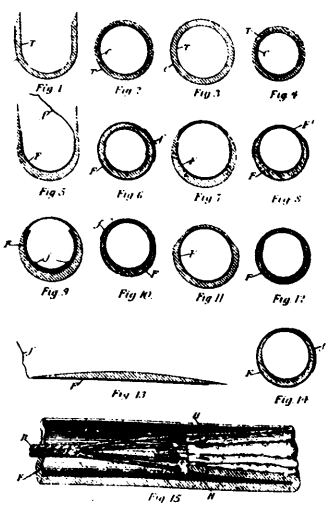
41293 Sawyer's Inkstand.



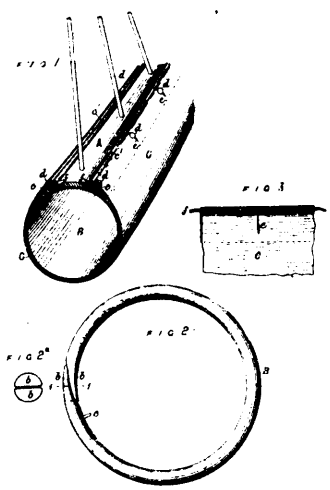
41294 Van Depoele's Electric Motor.



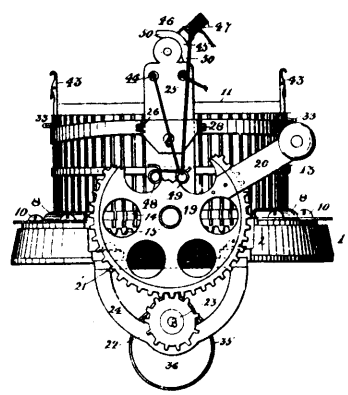
41295 Jones' Organ.



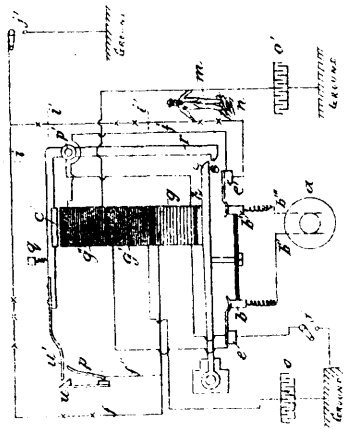
41296 Rowe and Heys' Pneumatic Tyre.



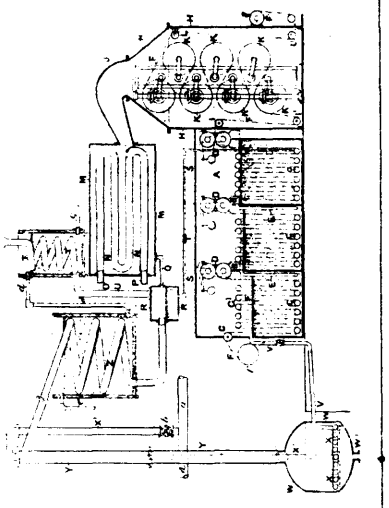
41297 Foster's Pneumatic Tyre.



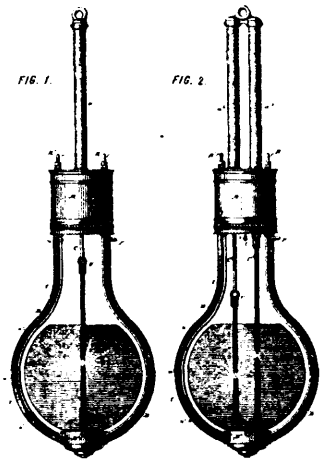
41298 Gulick and Humphrey's Knitting Machine.



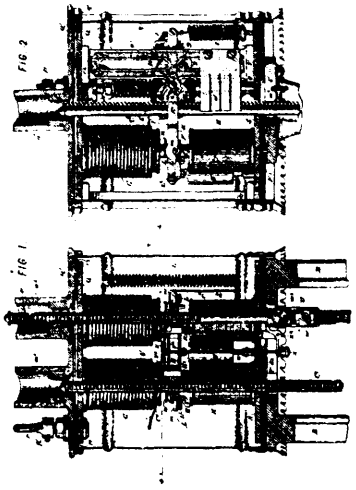
41299 Young's System of Electric Distribution.



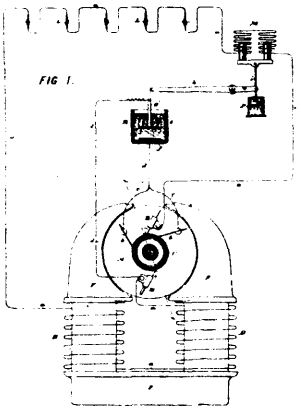
41300 Hutchinson's Apparatus for Removing Grease from Textile Fabric.



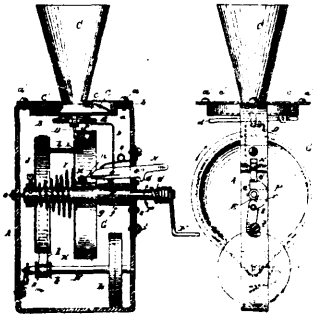
41301 Wood's Electric Arc Lamp.



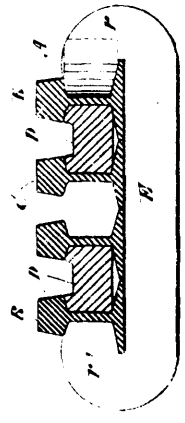
41302 Wood's Electric Arc Lamp.



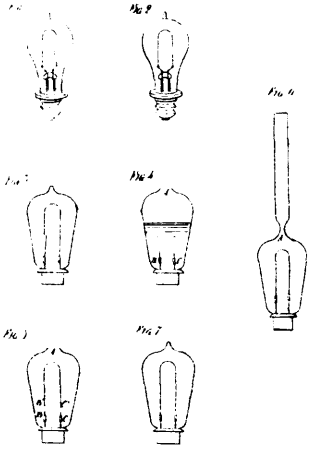
41303 Wood's Regulator for Dynamo Electric Machines.



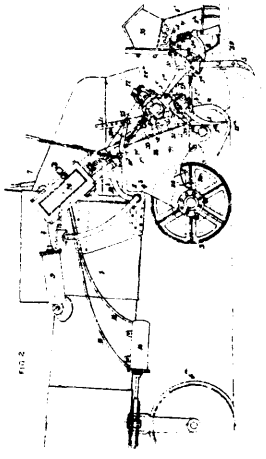
41304 Edison's Phonograph.



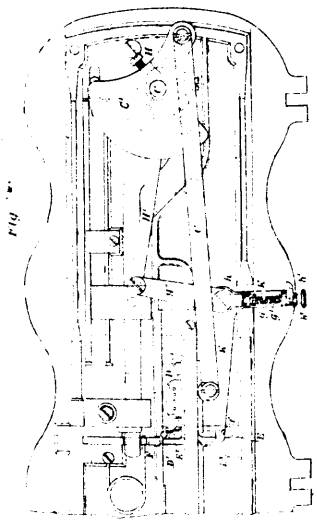
41306 Strom's Frog for Railway Rails.



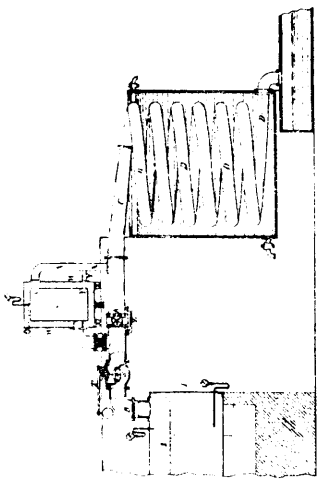
41308 Panthonier's Method of Repairing Incandescent Electric Lamps.



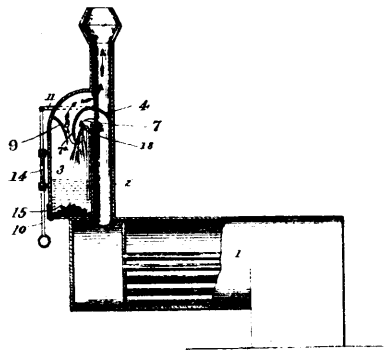
41309 Darby and Stevenson's Cultivator.



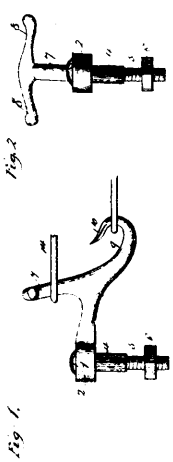
41310 Kohler's Sewing Machine.



41311 Laing's Apparatus for Distilling Mineral Oil.

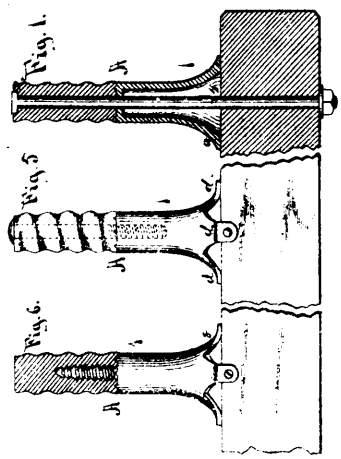


41312 Ramsey's Spark Arrester.

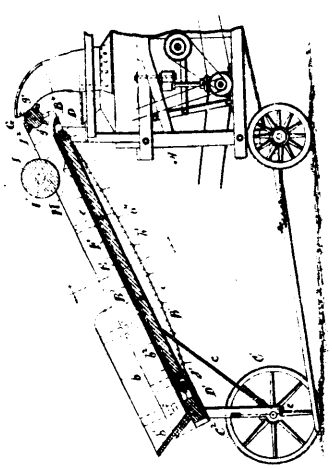


41313 Thompson's Check-rein Holder.

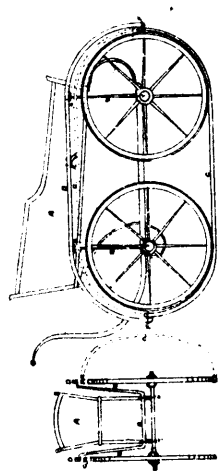
41314 Klingler's Car Coupler.



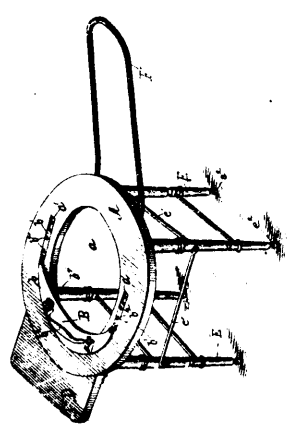
41315 Locke's Insular Pin.



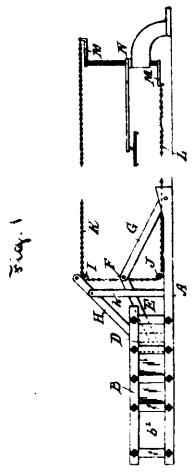
41316 Wemple and Smith's Band Cutter and Feeder.



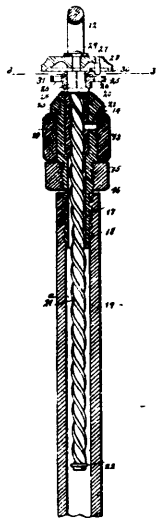
41317 Gladman's Method of Applying Runners to wheeled Perambulators.



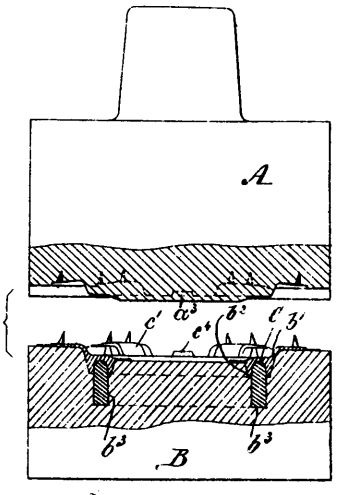
41318 Hoyer's Baby Walker.



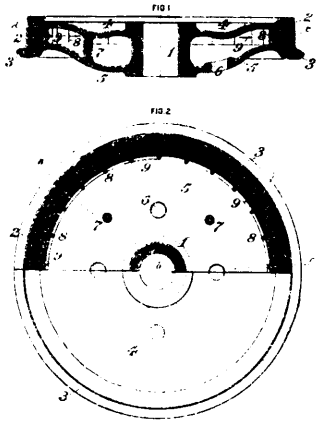
41319 Primeau's Hay Press.



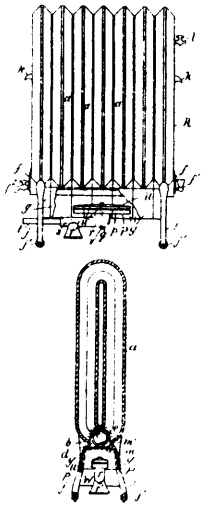
41320 Buese and Cowling's Rod Coupling.



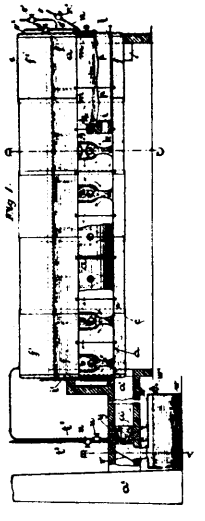
41321 Benfield's Horse-shoe.



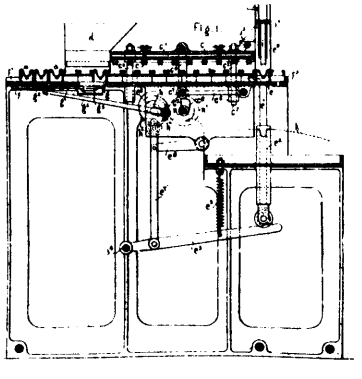
41322 Cushing's Car Wheel.



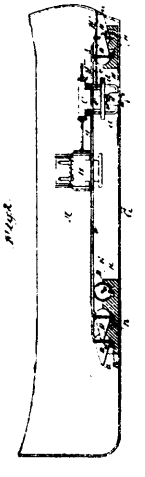
41323 Graves' Portable Heater.



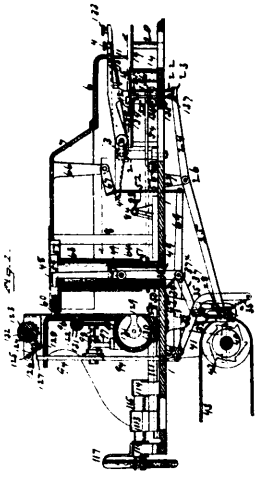
41324 Cunliffe's Steam Generator.



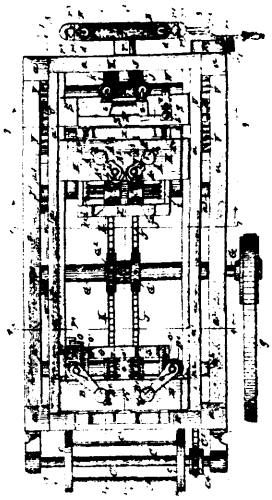
41325 Gulpen's Apparatus for making Fillers for Cigars.



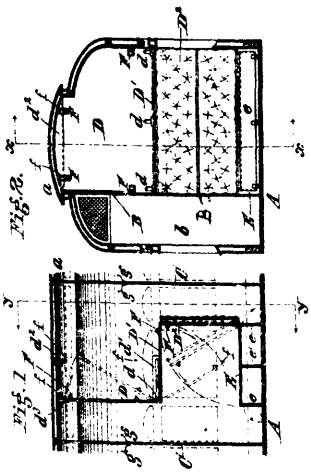
41326 Morton's Method of Propelling Vessels.



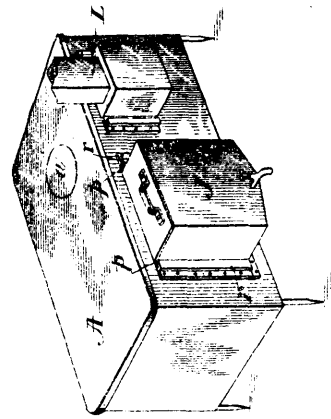
41327 Howell's Apparatus for producing Indented Type Impressions on Paper.



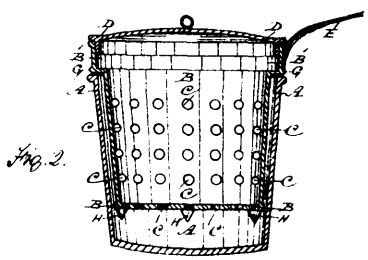
41328 O'Neil's Gill-net Puller.



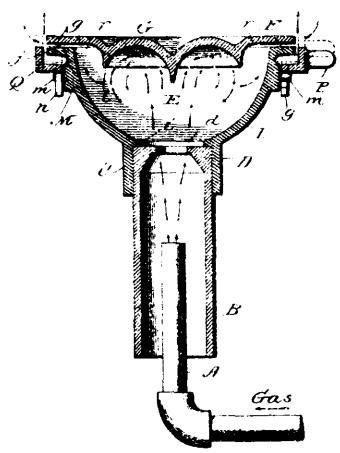
41329 Lockwood's State-room for Sleeping-cars.



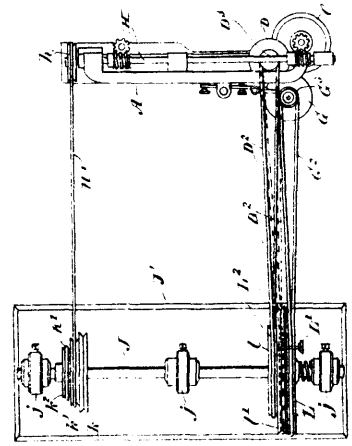
41330 Schneider's Stove.



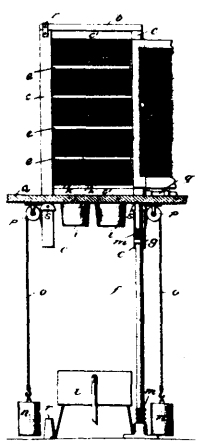
41331 Wyndham's Pan.



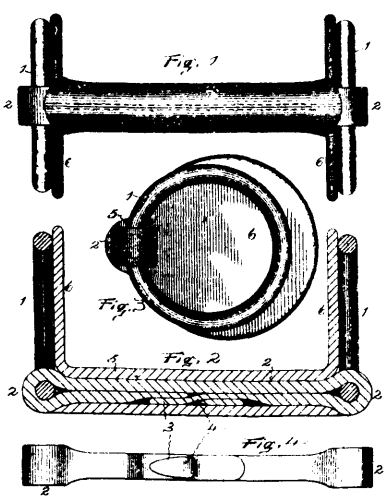
41332 Dean and Rant's Gas Burner.



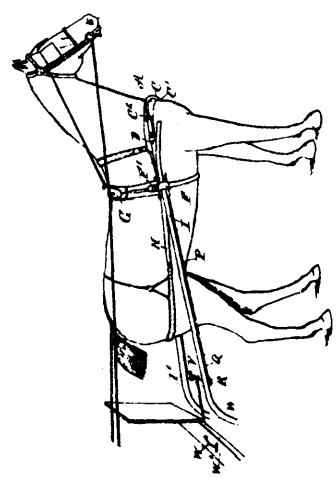
41333 Dufresne's Leather Skiving Machine.



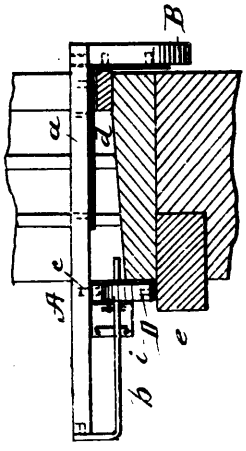
41334 Westwood and Taylor's Refrigerator and Elevating Cupboard.



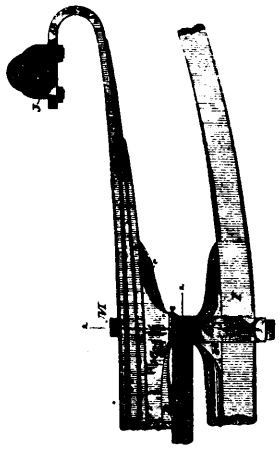
41335 Stalker's Bridle Bit.



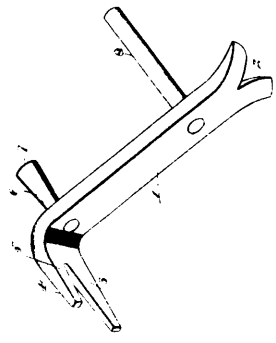
41336 Harris' Horse Attaching and Detaching Device.



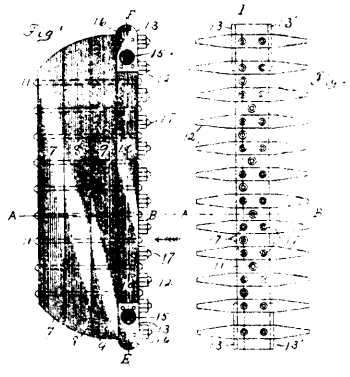
41337 Engler's Window Seat.



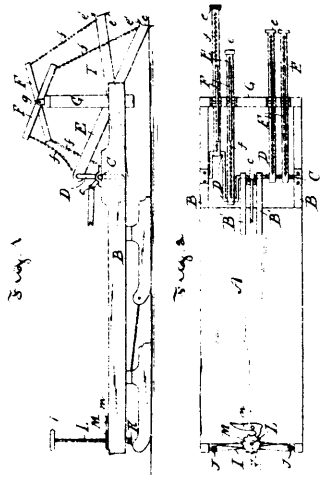
41338 Storm's Vehicle Running Gear.



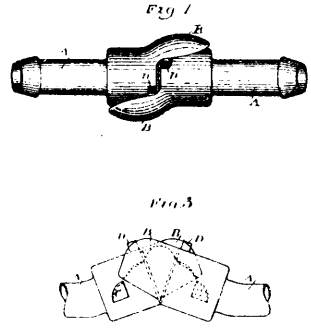
41339 Chamberlain's Wire Stretcher and Fastener.



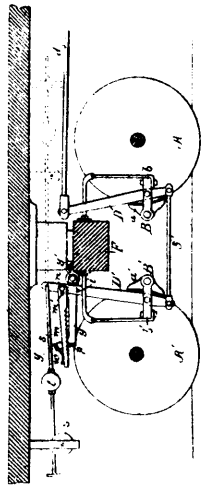
41340 Peters' Logging Boom Section.



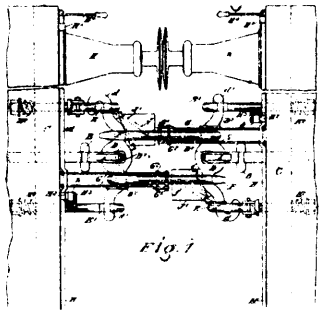
41341 Lapointe's Sleigh.



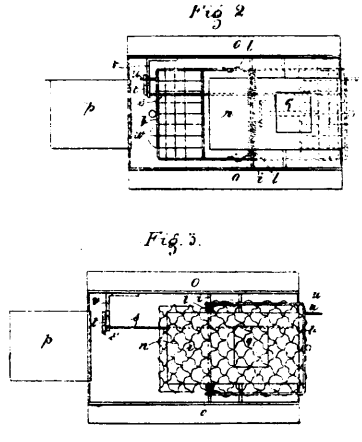
41342 McElroy's Hose Coupling.



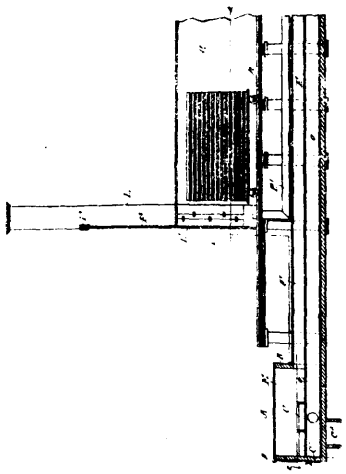
41343 Loughridge's Car Brake.



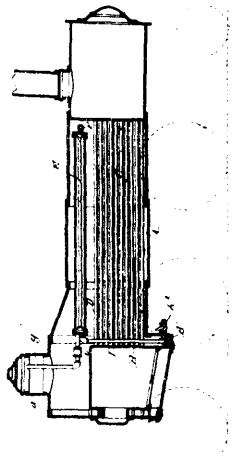
41344 Mayer and Mitchell's Car Coupler.



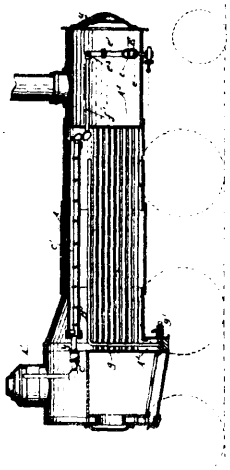
41345 Andrews' Animal Trap.



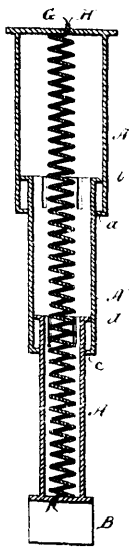
41346 Van Duzen's Lumber Drier.



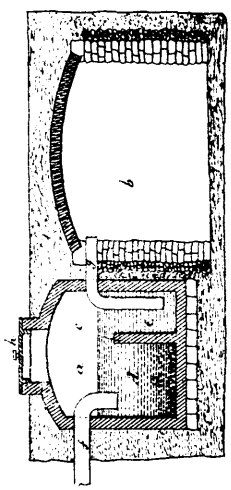
41347 McConnell's Feed Water Heater and Purifier.



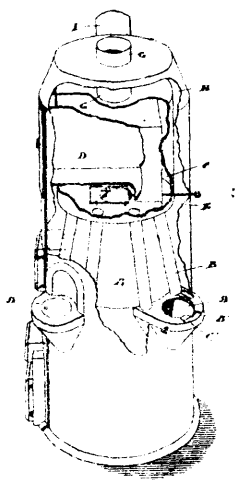
41348 McConnell's Feed Water Heater and Purifier.



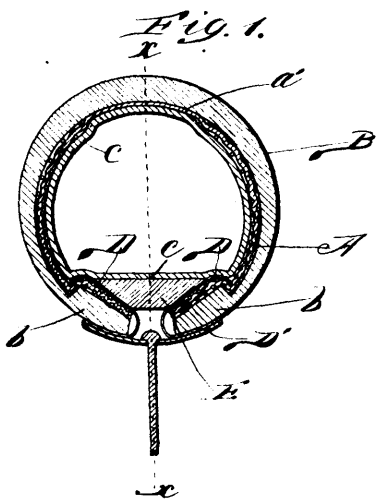
41349 Overholt's Extension Chandeliers.



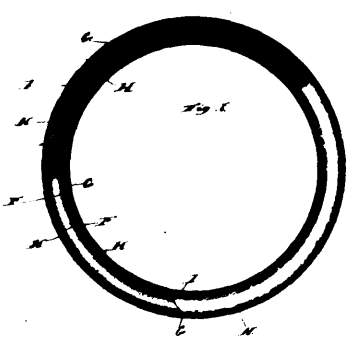
41350 Union's Cess-pool.



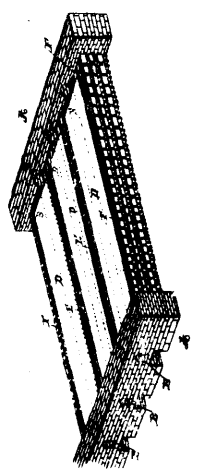
41351 Moses' Hot Air Furnace and Cooking Stove.



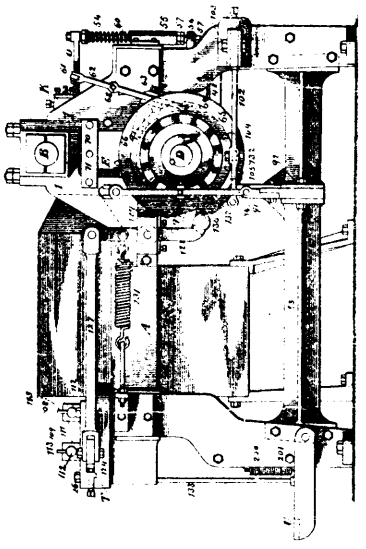
41352 Huss' Pneumatic Tyre.



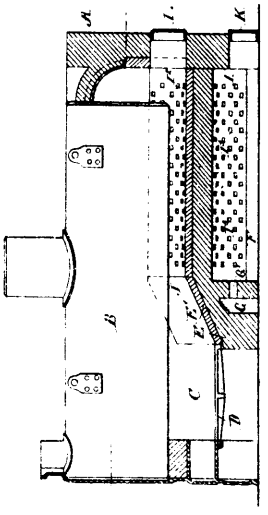
41353 Huss' Pneumatic Tyre.



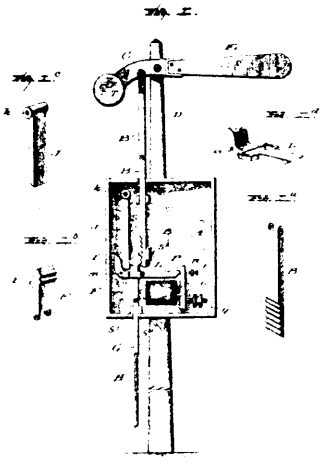
41354 Kinzel's Method of Drying and Burning Bricks.



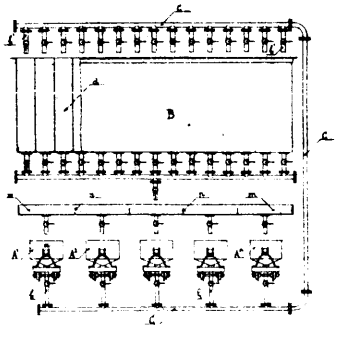
41355 Williams' Machine for Forging Horse-shoe Nails.



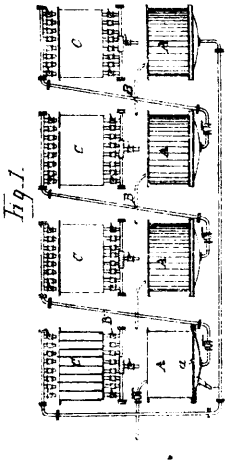
41356 Ecker's Furnace.



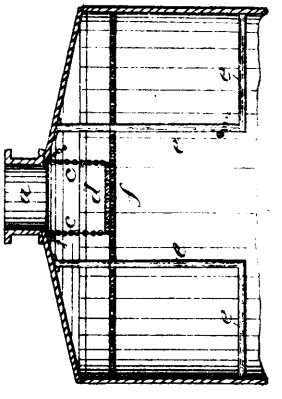
41357 Lattig's Signal.



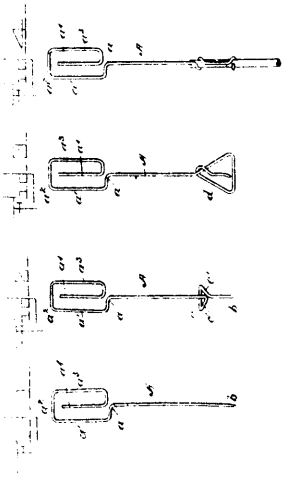
41358 Drummond's Apparatus for Refining Sugar.



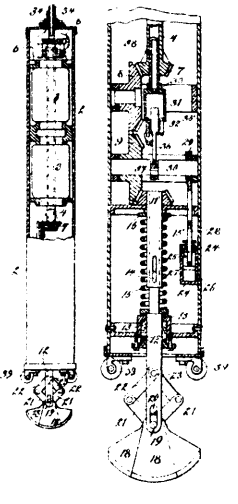
41361 Drummond's Apparatus for Obtaining Pure White Sugar by Lixiviation,



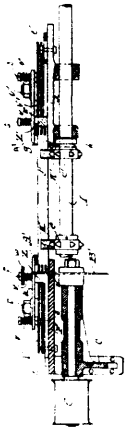
41364 Drummond's Art of Cleaning and Washing Raw Sugar.



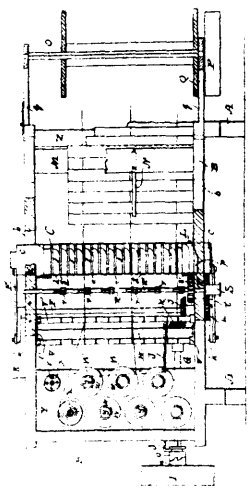
41365 Smith's Label Holder.



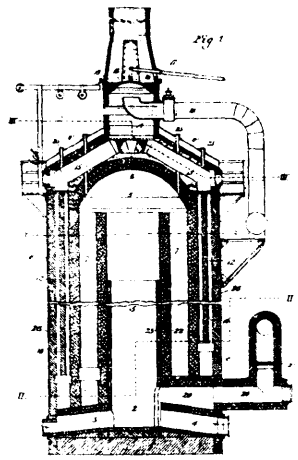
41366 Webber's Deep Well Drilling Apparatus.



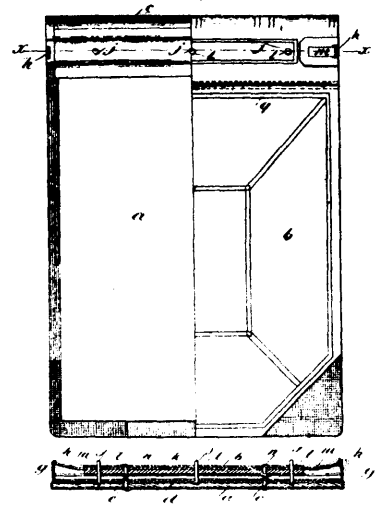
41367 Parks' Dovetailing Machine.



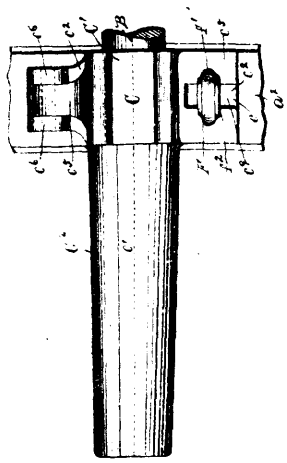
41368 Parks' Loom for Weaving Slat and Wire Fabric.



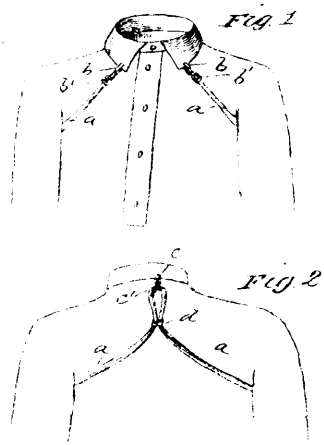
41369 McClure's Hot Blast Stove.



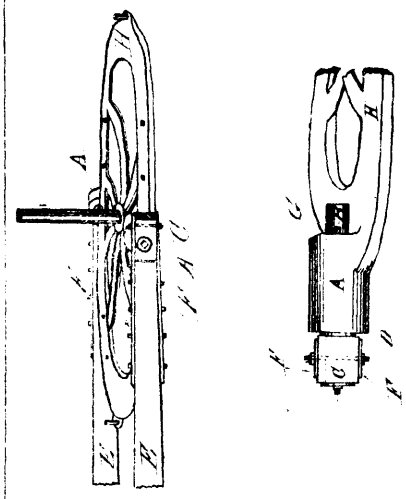
41370 Scattergood's Temporary Binder.



41371 Paquette's Sled.



41372 Robinson's Shirt Collar Holder.



41373 McKee and Marwick's Machinery for operating Jerker Wheels.

Fig. 1

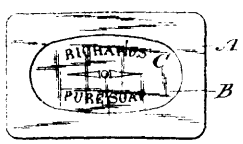


Fig. 2

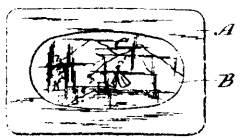
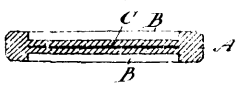
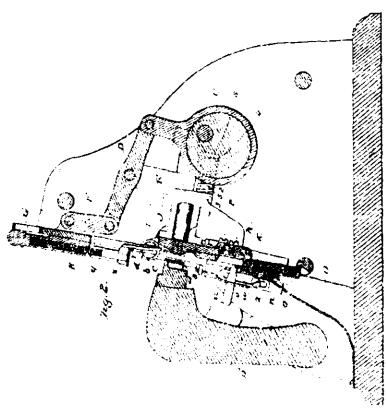


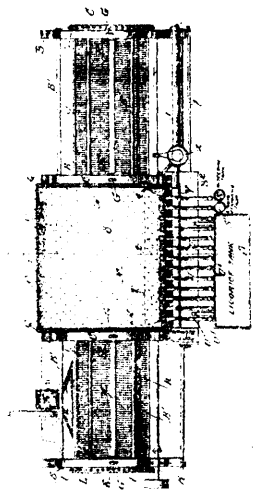
Fig. 3



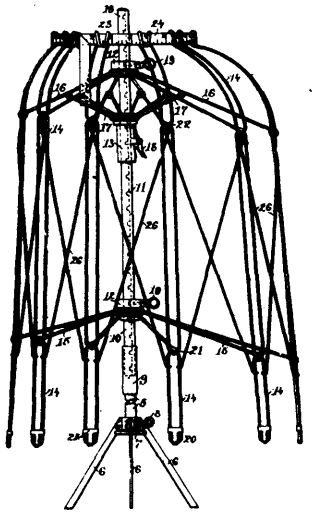
41374 Richards' Toilet Soap Tablet.



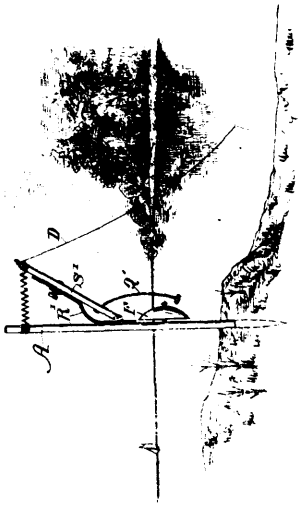
41375 Bucklin, Carrington and Morris' Horse-shoe Machine.



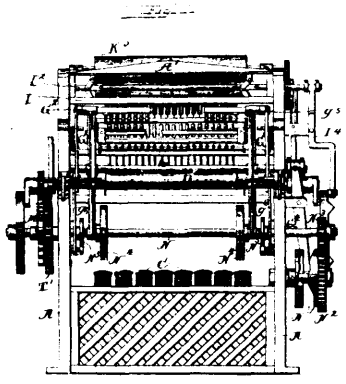
41376 Snyder's Machine for Treating Leaf Tobacco.



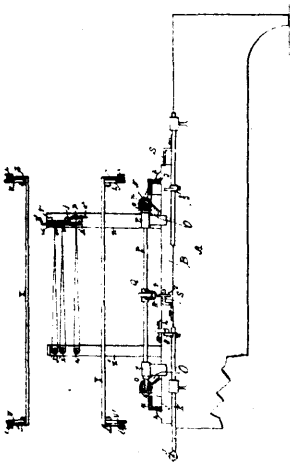
41377 Sherman's Dress Form.



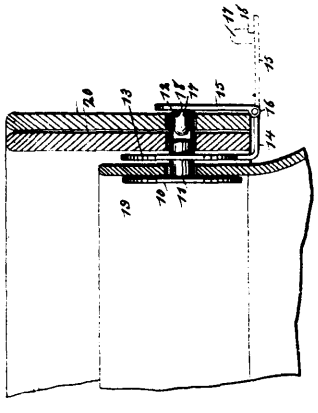
41378 Kuenzel's Fishing Device.



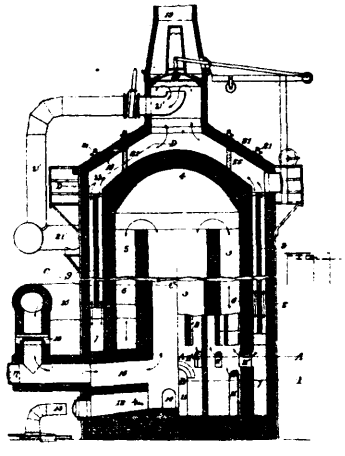
41379 Hooper's Net Making Machine.



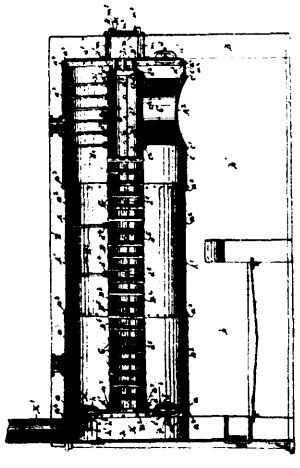
41380 Loeffler's Carving Machine.



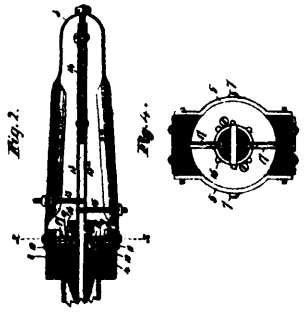
41381 Parks' Collar Button.



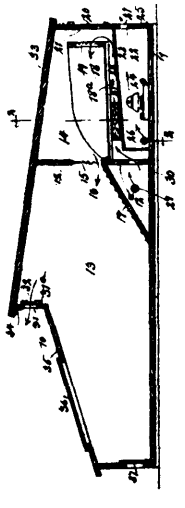
41382 McClure and Amsler's Regenerative Hot Blast Stove.



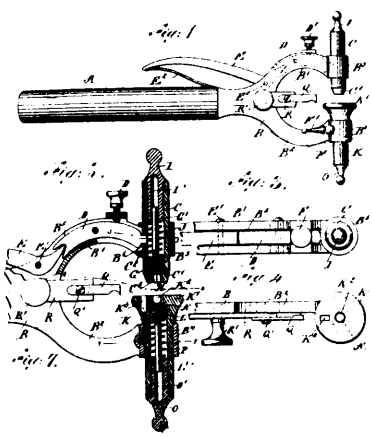
41383 Ranton's Steam Generator.



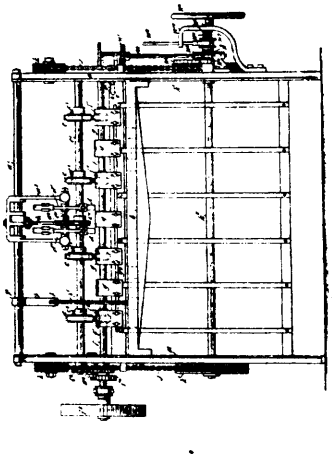
41384 McCoy's Tool for Threading Bottle Necks.



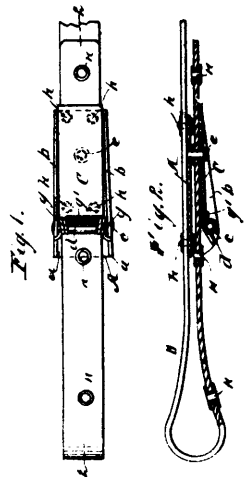
41385 Barney's Incubator.



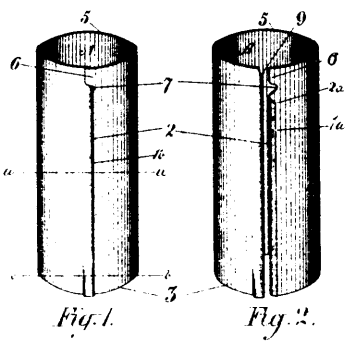
41386 Cameron's Watchmaker's Tool.



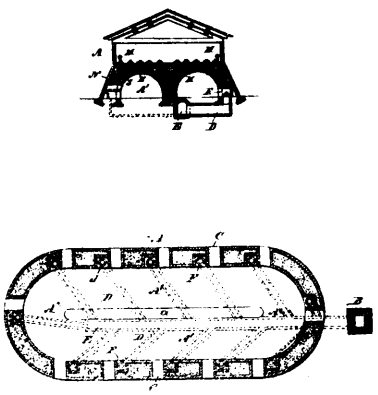
41387 Burnet's Paper Feeding Machine.



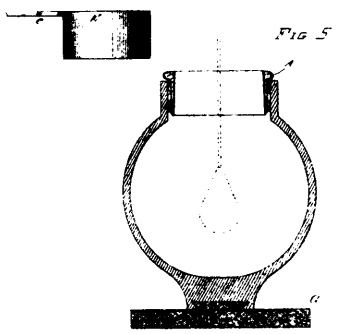
41388 Aylsworth's Buckle.



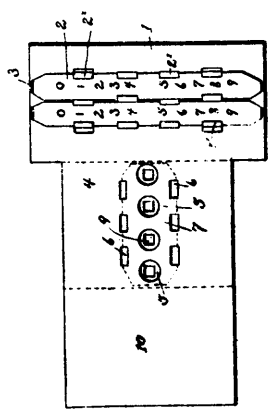
41389 Kemp's Stove Pipe.



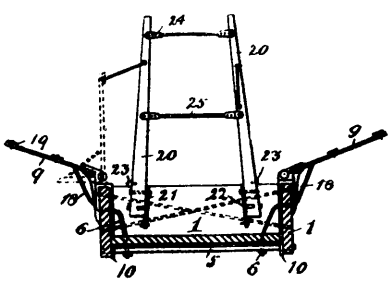
41390 Johnson's Kiln.



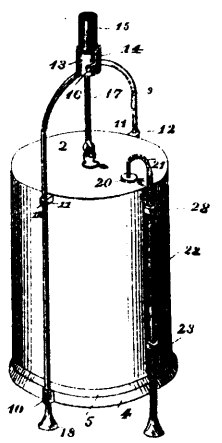
41391 Elson's Glass Vessel.



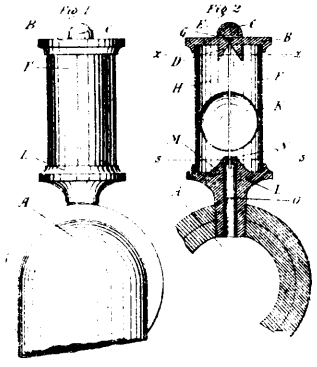
41392 Hale's Game Counter.



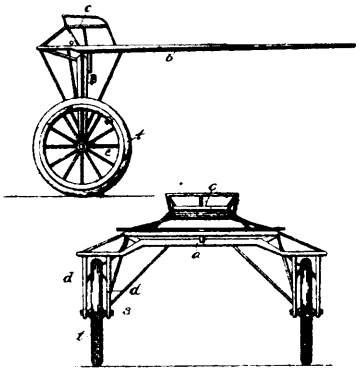
41393 White's Folding Hay Rack.



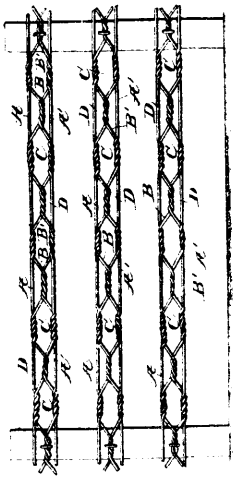
41394 Searles, Jackson and Gustin's Device for Cleaning Cisterns.



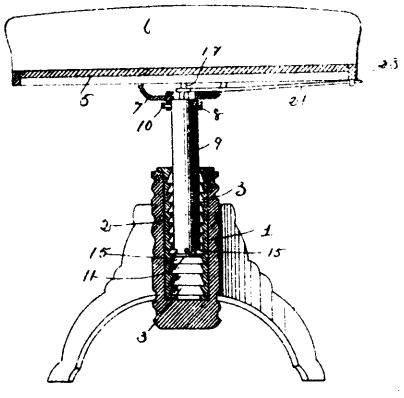
41395 Parent's Air Cock.



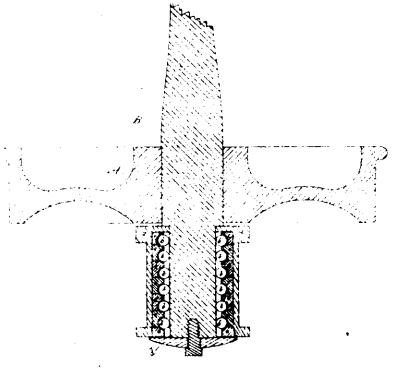
41396 Elliott's Sulkie.



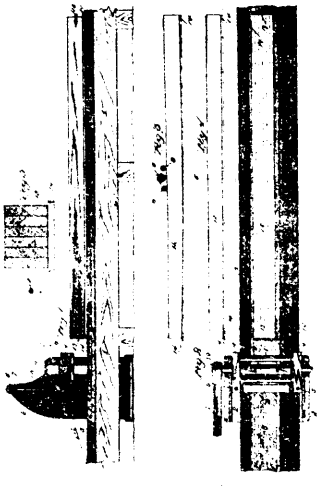
41397 Preston's Wire Fence Rail.



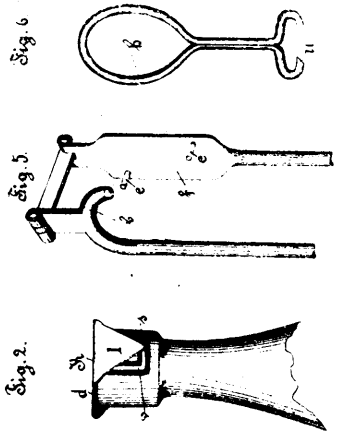
41398 Waldvogel's Adjustable Seat for Stools.



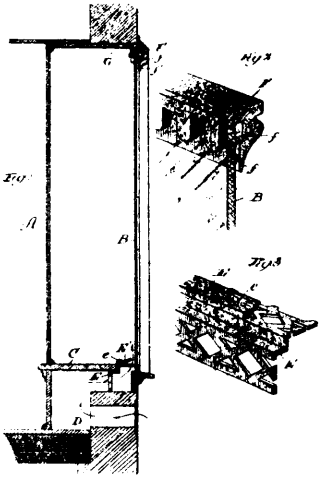
41399 Staofield's Journal Bearing for Railway Cars.



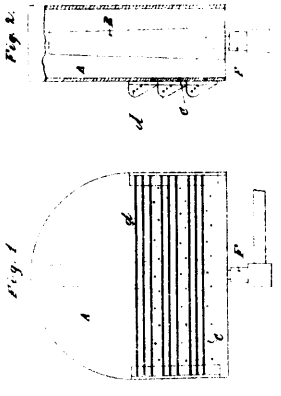
41400 Friedrichs' Apparatus for Crowning floor joints.



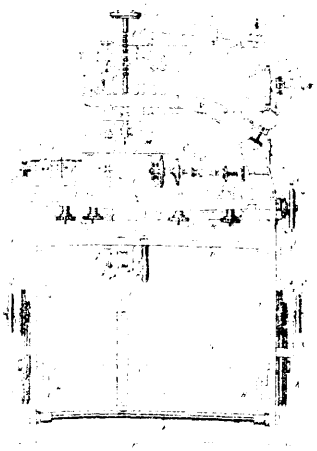
41401 Hanisch's Stopper for bottles.



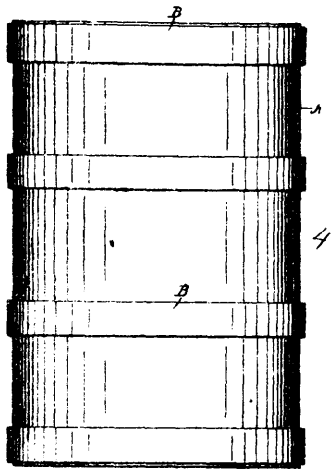
41403 Greig's Window Ventilator.



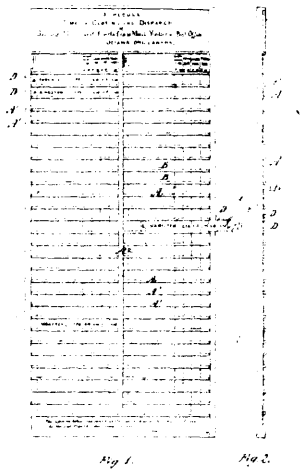
41404 Batty's Gas Stove.



41405 Hurteau's Wood Working Machine.

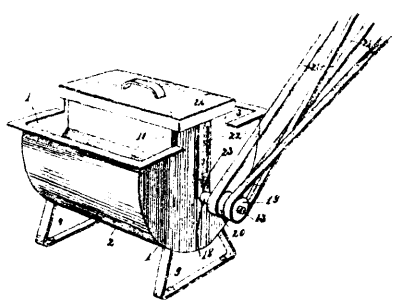


41406 Magee's Barrel.

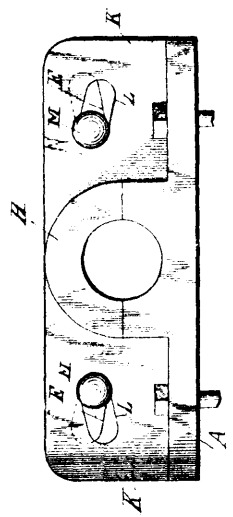


41407 Taplin's Bulletin Board.

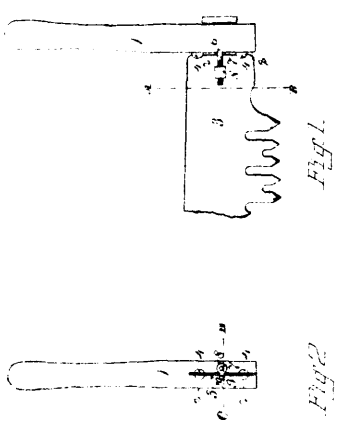
41408 Prutzman's Trouser Shield.



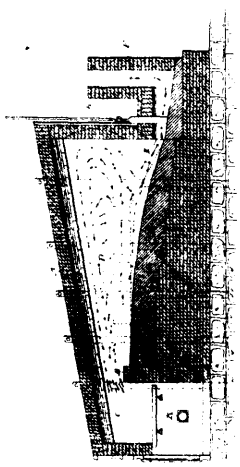
41409 Newhouse's Ice Cream Freezer.



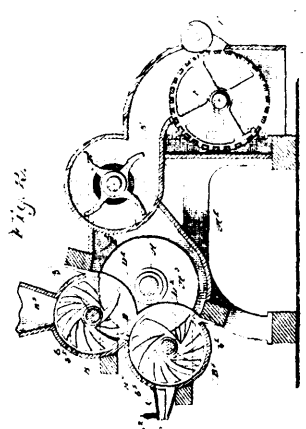
41410 Nyquist's Journal Box.



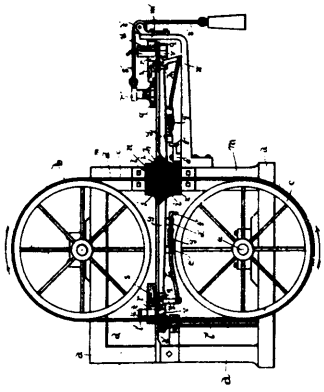
41411 Miller's Saw Handle.



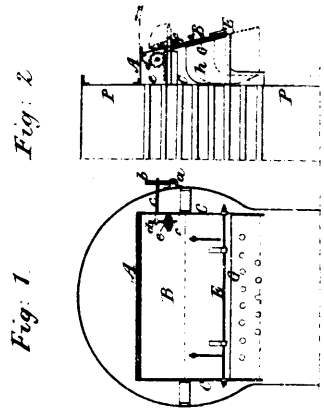
41412 Lauth's Furnace.



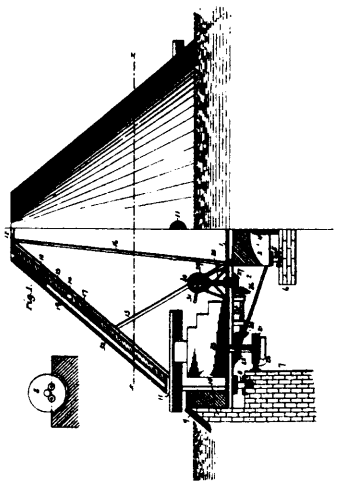
41413 Gardner's Apparatus for Delinting Cotton Seed.



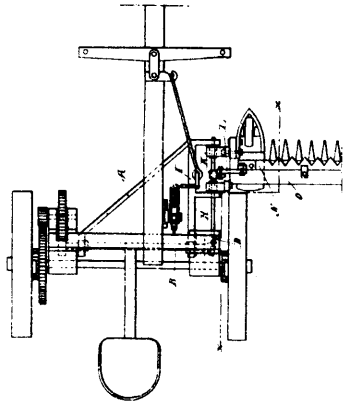
41414 Merrill's Stave Sawing Machine.



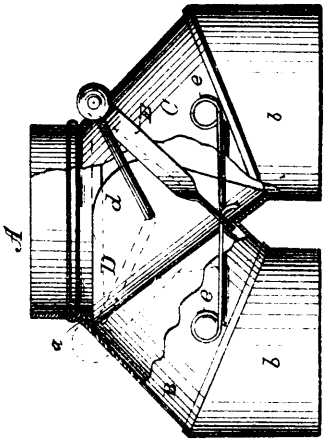
41415 Schwalb's Regulator for Steam Pipes.



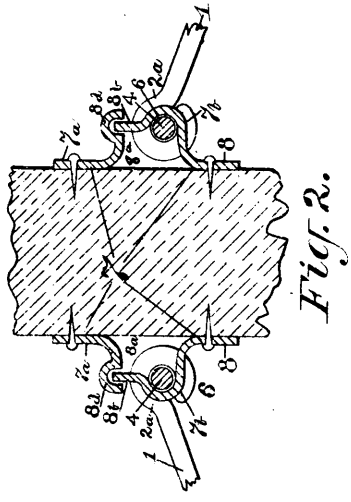
41416 Huff's Revolving Fortifications for Coast Defence.



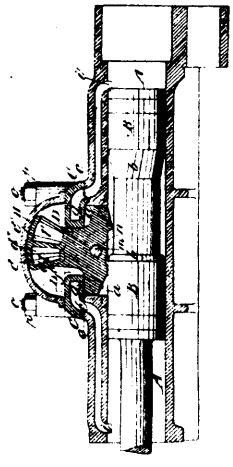
41417 Morningstar's Mechanical Movement.



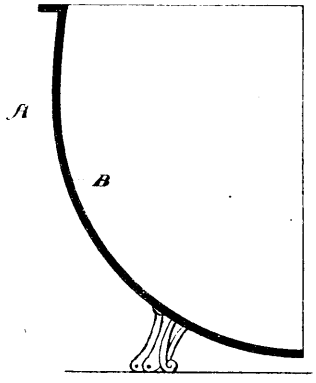
41418 Smith and Dutton's Cut-off for Pipes.



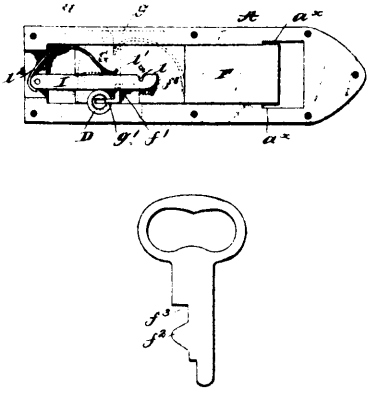
41419 Rodden's Umbrella Frame.



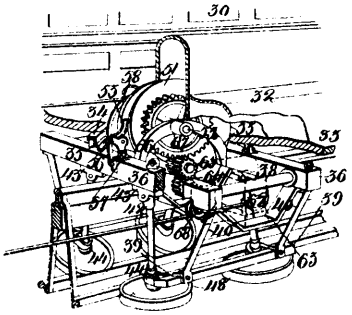
41421 Sergeant's Valve.



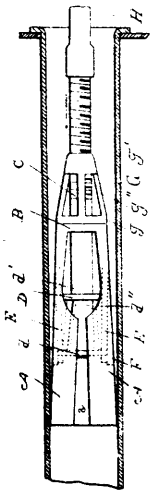
41422 Booth's Bath Tub.



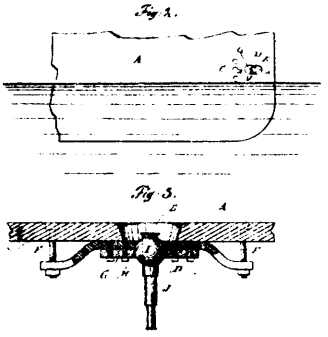
41423 Cobham's Lock.



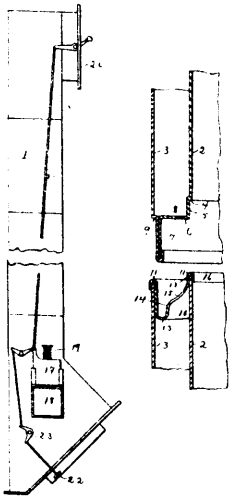
41424 Turner, Brown and Van Beek's Electric Elevated Railway.



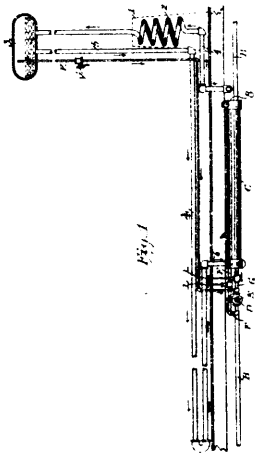
41425 Dunn's Boiler Tube Cleaner.



41426 Nelson's Means for Distinguishing Vessels in Fogs.

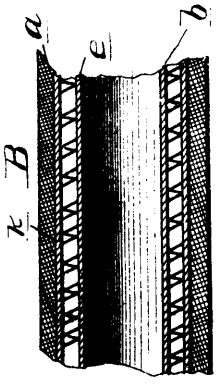


41429 Eversman and Wagner's Hot Air Pipe and Air Flue.

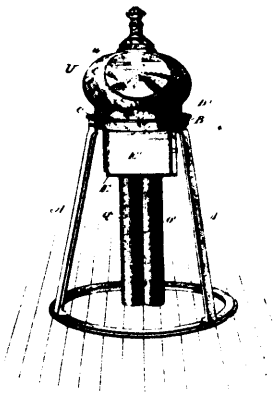


41430 McElroy's Heating Apparatus for Railway Cars.

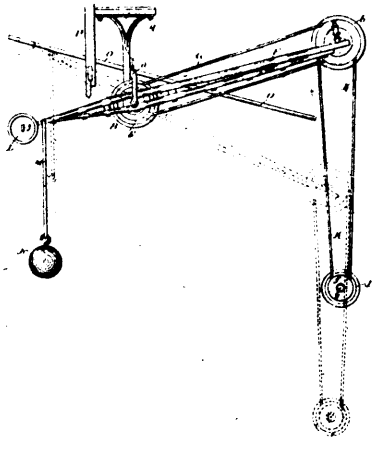
41431 Smale's Waggon Spring.



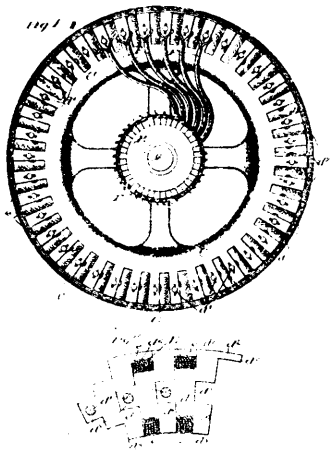
41432 Gendron's Elastic Tyre.



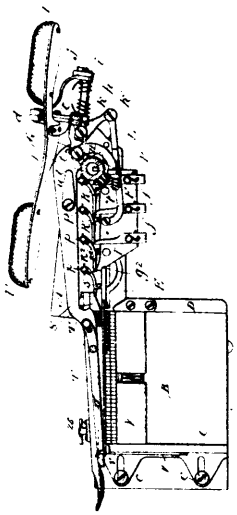
41433 Townsend's Recording Compass.



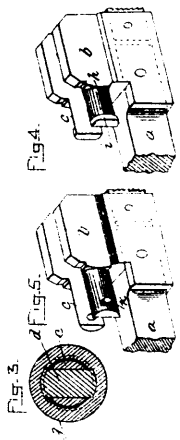
41434 Frost's Polishing Machine.



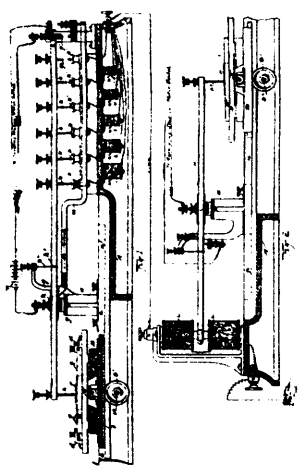
41435 Southard's Armature for Dynamo or Electric Motors.



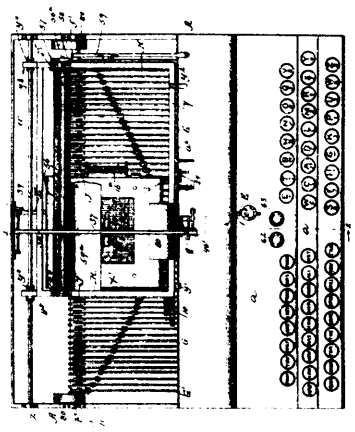
41436 Gustafson's Type Composing Machine.



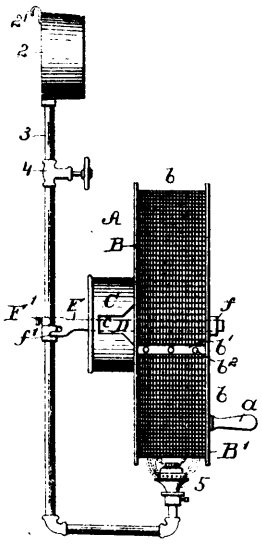
41437 Porter's Wrench.



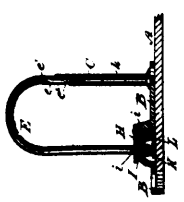
41438 Amstutz's Apparatus for Electrically Reproducing Uneven Surfaces.



41439 Harnsberger's Type-writer.



41440 Olson's Corn Popper.



41441 Ahrens, Doon and Gottwals' Letter and Bill File.