Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. 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 filming, are checked below.

L'Institut a microfilmé 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 filmage 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
- [x] Bound with other material/ Relié avec d'autres documents
- [x] 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
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ 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 filmées.

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [x] Showthrough/ Transparence
- [x] Quality of print varies/ Qualité inégale de l'impression
- [x] Continuous pagination/ Pagination continue
- [x] Includes index(es)/ Comprend un (des) index

Title on header taken from:/ Le titre de l'en-tête provient:

- [ ] Title page of issue/ Page de titre de la livraison
- [ ] Caption of issue/ Titre de départ de la livraison
- [ ] Masthead/ Générique (périodiques) de la livraison

- [x] Additional comments:/ Commentaires supplémentaires: Pagination is as follows: [563]-650, I-IV p.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
								✓			

The Canadian Patent Office RECORD

Vol. XXII.—No. 8. AUGUST 31st, 1894.

Price free by post in Canada and the United States, $2.00.
SINGLE NUMBERS, - - - 20 Cts.

NOTICE.

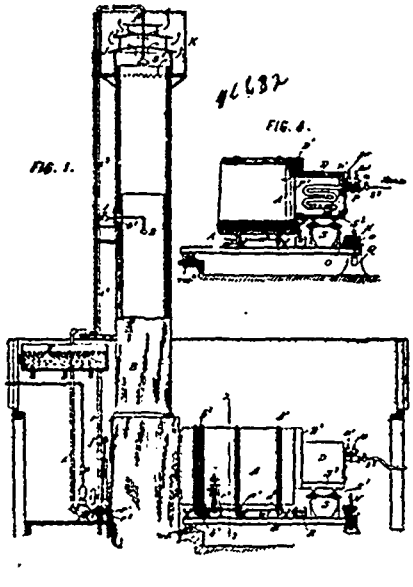
All solicitors, agents or attorneys who, in circulars or advertisements, or otherwise, refer to the Commissioner or Deputy Commissioner of Patents, or to any other official of the Patent Office, for evidence of their professional standing, do so without authority.

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. 46,662. Apparatus for Recovering Alkali.

(*Appareil pour obtenir de l'alcali.*)

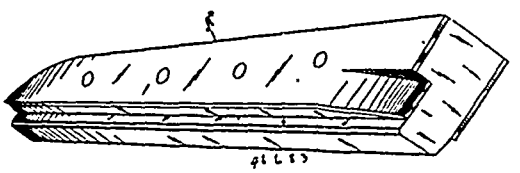


The Blackman Patent Pulp Company, assignee of Henry Blackman, New York, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack so that it shall descend therein and be thereby concentrated, a tank for receiving the liquid thus concentrated, and a pump for drawing the concentrated liquid from this tank and introducing it into the calcining chamber. 2nd. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack so that it shall descend therein and be concentrated thereby, a tank for receiving the liquid thus concentrated, a pump for drawing the concentrated liquid from this tank and introducing it into the calcining chamber, and means for controlling the introduction of liquid into the stack so as to preserve a uniform level in said tank consisting of a valve operated by a float and responding to variations of level of the liquid in said tank. 3rd. A calcining furnace consisting of a calcining chamber and an upright stack, a tank at the base of said stack for receiving the solution to be calcined, a pump and connecting pipe adapted for drawing off the solution from said tank, and a pipe leading from the outlet of said pump and discharging into said stack, whereby the liquid is circulated in said tank, and repeatedly showered down the stack and returned into said tank preparatory to being discharged into the calcining chamber. 4th. In a calcining furnace, the combination with the calcining chamber and stack of a concentrating tank built within the base of the stack, an outlet therefrom to the calcining chamber, a standpipe exterior to the furnace and communicating with said tank, a supply tank and a pipe extending therefrom for delivering liquid to said concentrating tank, a valve in said pipe, and a float in said standpipe for automatically operating said valve and thereby controlling the height of liquid in the concentrating tank. 5th. In a calcining furnace, the combination of a calcining chamber and stack, a concentrating tank within the furnace, an agitator within said tank, a pump and connecting pipe, adapted for drawing off the solution from said tank, and a pipe leading from the outlet of said pump and discharging the solution into the stack, whereby the solution in said tank is agitated and may be repeatedly circulated from said tank and streamed down the stack. 6th. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack so that it shall descend therein and be thereby concentrated, a tank for receiving the liquid thus concentrated, a pump for drawing the concentrated liquid from said tank, a pipe receiving the liquid from said pump, and discharging it into the calcining chamber, and a valve in said pipe for regulating the rate of admission to the calcining chamber. 7th. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack, so that it shall descend therein and be thereby concentrated, a tank for receiving the liquid thus concentrated, a pump for drawing the concentrated liquid from said tank, a pipe receiving the liquid from said pump, and discharging it into the calcining chamber, and a valve in said pipe for regulating the rate of admission to the calcining chamber, and means for controlling the operation of said pump, consisting of a stand-pipe in communication with said valved discharge-pipe, a float responding to variations of level in said stand-pipe, and means operated by the rise and fall of said float for controlling the application of power to said pump. 8th. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack, so that it shall descend therein and be thereby concentrated, a tank for receiving the liquid thus concentrated, a steam pump for drawing the concentrated liquid from said tank, a pipe receiving the liquid from said pump and discharging it into the calcining chamber, and a valve in said pipe for regulating the rate of admission to the calcining chamber, a standpipe in communication with said valved discharge-pipe, a float responding to variations of level in said stand-pipe, and a valve in the steam-pipe supplying steam to said pump connected to and operated by said float, whereby the speed of the pump is automatically governed proportionally to the adjustment of said valve. 9th. In a calcining furnace comprising a calcining chamber and a stack, the combination of means for introducing a liquid to be treated into said stack, so that it shall descend therein and be thereby concentrated, a tank for receiving the liquid thus concentrated, a pump G^1, with its suction-pipe t connected to said tank for drawing the concentrated liquid therefrom, a discharge-pipe t^1 ascending from said pump, a vertical pipe p^1 receiving the liquid from said pipe t^1, a pipe p extending thence into the calcining chamber, a valve p^2 or

controlling the discharge of liquid through said pipe, a stand-pipe p^3, in connection with pipes p, p^1, a float r in said stand-pipe, and means controlled by said float for governing the speed the of pump. 10th. In a calcining furnace comprising a calcining chamber and a stack, the combination of a supply tank for liquid to be treated, means for introducing liquid from said tank into the stack, so that it shall descend therethrough and be thereby concentrated, a tank for receiving the liquid thus concentrated, means for introducing the concentrated liquid from this tank into the calcining chamber, and means for controlling the admission of liquid to the stack consisting of a valve operated by a float responding to variations in the level of the concentrated liquid in said receiving tank. 11th. In a calcining furnace, the combination with a calcining chamber and an upright stack, of a supply tank for the liquid to be treated, a pump drawing from said supply tank, a pipe leading from the outlet of said pump extending upward and discharging the liquid into said stack, whereby the liquid is showered down the stack, and a receiving tank at the base of said stack for receiving the liquid thus concentrated. 12th. In a calcining furnace, the combination of a calcining chamber and an upright stack, a supply tank for the liquid to be treated, a pipe extending therefrom to a pump, a pipe leading from the outlet of said pump extending upward and discharging into the stack to shower the liquid down therethrough, a receiving tank at the base of the stack to receive the liquid thus concentrated, and means for controlling the flow of liquid from said supply tank, consisting of a valve, and a float operating said valve and responding to variations of level in said receiving tank. 13th. In a calcining furnace comprising a calcining chamber and a stack, the combination of a receiving tank at the base of said stack, a supply tank for the liquid to be treated, a pump, pipes leading from said supply tank and said receiving tank to said pump, and the discharge pipe of said pump extending upward and discharging the liquid therefrom into said stack, whereby the liquid thus discharged into the stack may be drawn either from said supply tank or said receiving tank, or partly from each. 14th. In a calcining furnace, the combination with calcining chamber A, stack B and tank C, of supply tank F, pump G, pipe e leading from tank F, controlled by float valves f, g, pipe e^1, leading from tank C, to pump G, valve e^2 controlling said pipe, and discharge pipe f^1 extending from said pump upwardly and discharging into the stack, whereby the degree of concentration of the liquid in tank C may be determined by the adjustment of valve e^2, the flow from tank F being governed automatically and proportionally to such adjustment by the float-valve. 15th. In a calcining furnace, the combination with calcining chamber A and stack B, of tank C, pump G^1 drawing therefrom, pipes p and p^3 receiving the liquid from said pump and discharging it into the calcining chamber, and removable cap p^6 in line with pipe p, whereby by removing this cap access may be gained to the interior of pipe p for cleaning it. 16th. In a calcining furnace, the combination of a calcining chamber and stack, a concentrating tank within the furnace, an upright shaft carrying stirring arms within said tank, a driving shaft passing laterally through said tank, and bevel gears within the tank for communicating motion from said driving shaft to said stirrer shaft, whereby the material in said tank may be effectively agitated and commingled. 17th. In a calcining furnace, comprising a calcining chamber and stack, the combination of a save-all L, supply tank F, pipe e leading to pump G, and valved pipe e^3 communicating with pipe e, whereby the tank F may be drained into the save-all through pipe e^3, and its contents afterward pumped out through said pipe to the pump. 18th. The combination of a stationary stack, a horizontal furnace comprising as part thereof a revolving calcining chamber having its receiving end communicating with said stack, and arranged to discharge the calcined material from its opposite end, a tilting framework for supporting said furnace and tilting it to varying angles, pivoted adjacent to the receiving end of said chamber, and mechanism for raising or lowering said framework to raise or lower the discharge end of said chamber at will. 19th. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and means at its opposite or discharge end for partially closing it and for supplying ignited fuel to it, a tilting framework for supporting said furnace and tilting it to varying angles, pivoted adjacent to the receiving end of said chamber, and mechanism for raising or lowering said framework to raise or lower the discharge end of said chamber at will. 20th. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and a stationary shield or initial combustion chamber at its opposite or discharge end for partially closing it and having an opening for supplying ignited fuel to it, the supporting wheels and shafts of said rotary chamber, a support for said stationary shield or chamber, a tilting framework for supporting said furnace, on which said wheels and shafts and said support are mounted, and mechanism for raising or lowering said framework to tilt it to different angles at will. 21st. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and a stationary shield or initial combustion chamber at its opposite or discharge end for partially closing it and having an opening for supplying fuel to it, the supporting wheels and shafts of said rotary chamber, a support for said stationary shield or chamber, constructed with slideways to admit of the adjustment of the shield or chamber toward or from the discharge end of the rotary chamber, a tilting framework for supporting said furnace, on which said wheels and shafts and said support are mounted, and mechanism for tilting said framework to different angles at will. 22nd. In a rotary calcining furnace, the combination with the revolving calcining chamber of a shield exterior thereto and arranged against the opening at the discharge end thereof to cover and close said opening, formed with its bottom portion eccentric to said opening and above the bottom thereof, so as to leave a space x uncovered at the bottom thereof through which to discharge the calcined ash, and said shield mounted to be bodily adjustable toward and from the chamber to afford a narrower or wider space for entrance of air, whereby such adjustment of the shield cannot close the opening x through which the ash is discharged, nor reduce its area beyond the minimum predetermined area circumscribed by the eccentric arcs bounding said opening. 23rd. In a rotary calcining furnace, the combination with the revolving calcining chamber thereof, of a fire-box or furnace applied to its discharge end eccentrically and nearest the ascending side of the calcining chamber, whereby the flames from said fire-box are directed over the greater mass of material within the calcining chamber at the ascending side thereof. 24th. In a rotary calcining furnace, the combination with the revolving calcining chamber thereof, of a shield for closing the discharge end of said chamber, constructed with a fire-box or furnace arranged eccentrically and nearest the ascending side of the calcining chamber, and the shield formed with a hole close to the opposite and descending side of the chamber, whereby during the ascent of the material it is exposed to the flames from said fire-box, and during its descent the calcined material may be observed through said hole, or manipulated by a poker inserted through said hole. 25th. The combination with a revolving calcining chamber and its shield or initial combustion chamber, a tilting platform supporting them, and a lifting mechanism therefor consisting of upright screws to which the ends of the longitudinal beams of the platform are connected, worm-wheels having threaded hubs engaging said screws, and a transverse shaft having worms meshing with said worm-wheels.

No. 46,683. Safety Switch. (*Aiguille de sûreté.*)



Edward Best and John D. Lebel, both of London, Ontario, Canada, 1st August, 1894; 6 years.

Claim.—1st. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body, the upper face of which is inclined laterally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 2nd. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with a flange M, inclined longitudinally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 3rd. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with a recess O, substantially as shown and described, and for the purpose specified. 4th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with a recess O, and flange M, substantially as shown and described, and for the purpose specified. 5th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with an inclined face P, and recess O, substantially as shown and described, and for the purpose specified. 6th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with a flange M, and an inclined face P, substantially as shown and described, and for the purpose specified. 7th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2, formed with a flange M, inclined face P, and recess O, substantially as shown and described, and for the purpose specified. 8th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^1, formed with an inclined recess N, and with an upper face inclined laterally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 9th. A safety attachment for railroad switches, consisting of a body A^4, formed with a flange M, and an inclined face P, in combination with the safety attachment, consisting of a body A^3, formed with an inclined recess N, and the rails R, R^1, R^3 and R^4, and means for securing said attachments to the rails R, R^1, substantially as shown and described, and for the purpose specified. 10th. A safety attachment for railroad switches, consisting of a body A^2, formed with a flange M, an inclined face P, and a recess O, in combination with a safety attachment, consisting of a body A^3, formed with an inclined recess N, and with an inclined upper face, and the rails R, R^1, R^3 and R^4, and means for securing said attachments to the rails R, R^1, substantially as shown and described, and for the purpose specified. 11th. A safety attachment for railroad switches, consist-

ing of a body A^2, formed with a flange M, and an inclined face P, in combination with the safety attachment, consisting of a body A^3, formed with an inclined recess N, and the rails R, R^1, R^3 and R^4, clasps C, bolts D, and bars B and B^1, substantially as shown and described, and for the purpose specified. 12th. A safety attachment for railroad switches, consisting of a body A^2, formed with a flange M, an inclined face P, and a recess O, in combination with a safety attachment, consisting of a body A^3, formed with an inclined recess N, and with an inclined upper face, and the rails R, R^1, R^3 and R^4, clasps C, bolts D, and bars B and B^1, substantially as shown and described, and for the purpose specified.

No. 46,684. Device for Preventing Railway Cars from Leaving the Rails. (*Appareil pour empêcher les chars de dérailler.*)

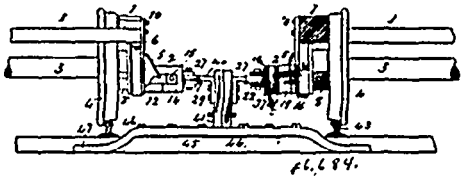


Fig. 684.

Charles W. McBryer and Henry B. Schilling, both of St. Louis, Missouri, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. Improved devices for preventing railway cars from leaving the rails, having a car attachment comprising a three-sided rectangular frame, the back plate of which has upwardly projecting arms secured to the truck beam, a three-sided rectangular frame bolted within the sides of said outer frame, bracket arms holding said inner frame to the journal supporters, a horizontal opening in the front of said inner frame, projecting ears or plates upon an interior casting, projecting through said opening, said casting comprising a plate normally adjacent the inner side of the inner frame, a projecting plate intermediate of the length of said side plate at right angles therewith, an outwardly projecting plate at right angles with the cross-plate and adapted to be located adjacent the inner frame, and said casting having a roller pivotally mounted between the projecting ears and loosely mounted to move horizontally and rock independent of the car-body and truck, substantially as set forth. 2nd. Improved devices for preventing railway cars from leaving the rails, having a car attachment comprising an exterior frame secured to and carried by the truck, an inner frame secured in said outer frame, a casting carrying a roller located within said inner frame, a horizontal rod secured in said outer frame and engaging said adjustable casting and a spring upon said rod between said said parts to determine the movement of the roller carried by said adjustable casting, substantially as set forth. 3rd. Improved devices for preventing railway cars from leaving the rails, having a car attachment comprising an exterior frame secured to and carried by the truck, an inner frame secured in said outer frame, a vertically rocking and horizontally movable casting carrying a roller, located within said frame, a horizontal rod secured in said outer frame and engaging said adjustable casting, a spring upon said rod between said parts to control the horizontal movement of said roller carried by said casting, said casting engaging a horizontally mounted oscillatory plate by means of which the same is vertically rockable, substantially as set forth. 4th. The improved double-track derailment-preventing mechanism, comprising an attachment 2 applied to each side of the car-trucks and having two outwardly projecting end-plates 12 forming with its back-plates 11 a three-sided casing, an elongated rectangular frame 13 loosely fitted within said casing, braces 15 bolted to the sides of said casing near its outer end-plate 16 and to the truck of the car, a bolt 17 passing through the sides 12 and 14 and having a nut 18 upon one end, a plate 19 mounted to rock or tilt upon said bolt between said side-plates of the said rectangular frame, the forward plate of said frame having a horizontal opening 21 extending from one of its side-plates to the other, two perforated plates 22 fixed upon the outer end of the casing 23 and loosely located in said opening and projecting therethrough beyond the outer end of said frame, the casting 23 loosely mounted within said frame to rock vertically and move horizontally therein and provided with a slot at its rear end loosely engaging the free edge of said plate 19, a flanged roller mounted to revolve between said perforated plates outside of said frame, a spring which normally holds said casing in contact with the outer end of said frame, parallel double tracks, a guide-rail 40 having a laterally projecting flange and extending one along each side of the double tracks so as to be engaged by the flanged-roller of said attachment, the ties of the double tracks, horizontal strips 42 applied to said ties and having vertical standards 41 to which said guide-rails are bolted, the standards of adjacent tracks being bolted together, and means for securing said strips in position, substantially as herein specified.

No. 46,685. Truss for Bridges. (*Tirant de pont.*)

George T. Hawes, Owensborough, Kentucky, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. In a trestle, abutment or pier, the combination of the metal cap piece, the inclined, counter, end struts, made of plate metal of approximately triangular form in cross-section, and having horizontal bolting ends or flanges, inclined intermediate struts formed of plate metal of the same form as the end struts, and applied in pairs and as counter braces, and against the cap-plate or piece, and those of each pair diverging from the cap plate out of line with one another, longitudinally of the base plate, downwardly and laterally, so that their proximate lower ends stand out of line with one another longitudinally of the base plate, substantially as described. 2nd. In a trestle, abutment or pier, the combination of the cap-plate or piece, the base plate or piece widened at its ends, the inclined counter end struts having an approximately triangular cross-sectional form, and provided with upper and lower horizontal

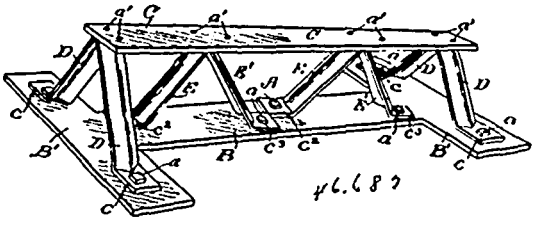


Fig. 685.

bolting ends, the intermediate counter struts having an approximately triangular cross sectional form, and provided with horizontal bolting ends of flanges, and set to abut against one another and bear against the cap-plate or piece and to diverge from the cap-plate downwardly and laterally out of line with one another longitudinally of the base plate, substantially as described. 3rd. The counter end and intermediate triangular struts, formed with bolting flanges which abut against one another, in combination with the cap and base plates, substantially as described. 4th. In a trestle, counter intermediate struts formed of angle iron and with horizontal bolting ends, and abutting at the centre of the base plate, and diverging downward, and laterally attaching to the base plate near its edges, substantially as described.

No. 46,686. Electric Locomotive.

(*Locomotive électrique.*)

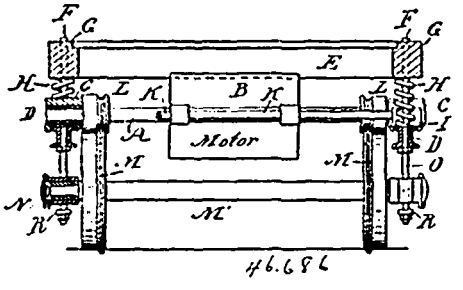


Fig. 686.

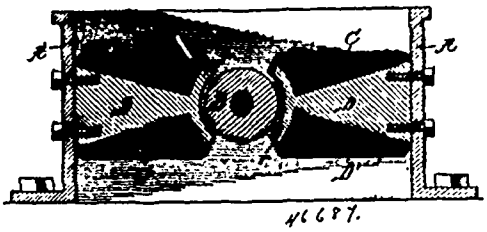
Alexander Philipsborn and Max Schiemann, both of Berlin, Germany, 1st August, 1894; 6 years.

Claim. 1st. The combination, in an electro-locomotive car, of the traction wheels a truck frame and electro-motor supported by the same and movable relative to the traction wheels, means for frictionally transmitting power from the motor shaft to said traction wheels, and a car body exerting its weight upon the transmission means and elastically supported upon said truck frame to vibrate independent of the motor and traction wheels. 2nd. The combination in an electro locomotive car, of the traction wheels, axle boxes therefor guided so as to be capable of vertical motion, a truck frame and electro-motor supported by the same and movable relative to the traction wheels, means for frictionally transmitting power from the motor shaft to said traction wheels, and a car body exerting its weight upon the transmission means and elastically supported upon said truck frame, the arrangement being such that the traction wheels, motor, and car body may conjointly vibrate or the said wheels and motor vibrate relative to the body, so as to preserve the frictional engagement, substantially as set forth. 3rd. The combination, in an electro locomotive car, of the traction wheels, a truck frame and an electro-motor supported by the same and movable relative to the traction wheels, means for frictionally transmitting power from the motor shaft to said traction wheels, a car body exerting its weight upon the transmission means and springs interposed between said truck frame and car body to permit the latter to vibrate independent of the motor and traction wheels, substantially as set forth. 4th. In an electro-motive car, the combination of the traction wheels having internal rims, an electro-motor, a suitable carrying frame supporting the motor and the car, a tubular shaft for the motor concentric with and surrounding the car axle, journal boxes for the said shaft located between the traction wheels supporting the carrying frame, frictional power transmitting wheels on the extremities of said motor shaft, and a transmitting wheel interposed in vertical line between the said wheels on the motor shaft

and the internal rims of the tractions wheels. 5th. In an electro-motive car, the combination of the traction wheels having internal rims, an electro-motor, a suitable carrying frame supporting the motor and the car, a tubular shaft for the motor concentric with and surrounding the car axle, journal boxes for the said shaft located between the traction wheels supporting the carrying frame, frictional power transmitting wheels on the extremities of said motor shaft, and a transmitting wheel interposed in vertical line between the said wheels on the motor shaft and the internal rims of the traction wheels.

No. 46,687. Electric Motor and Dynamo.

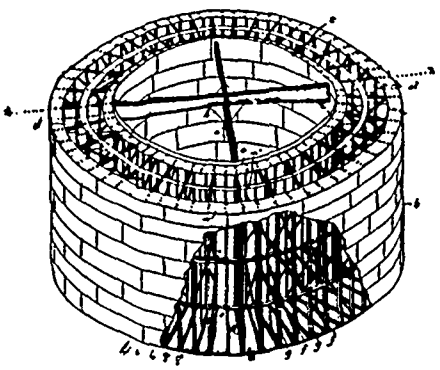
(*Moteur et dynamo électrique.*)



Herman K. Thiel, Alpena, Michigan, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. An electric motor or dynamo, having the cores of its field-magnets tapering toward their inner ends presented to the armature and provided with pole-pieces *r*, the body of wound wire D^1 on each core thickening toward its tapering end, substantially as and for the purpose set forth. 2nd. An electric motor or dynamo having the tapering field-magnet cores D provided with pole-pieces *r*, and wound with wire D^1 to an extent rendering the magnets of uniform diameter throughout, substantially as and for the purpose set forth.

No. 46,688. Foundation for Lighthouses and other Heavy Structures. (*Fondation pour phares et autres édifices.*)



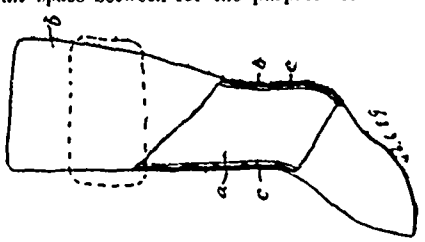
George Blanchard, Brooklyn, New York, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. In a foundation for light houses and other heavy structures, the combination of the base *a*, outer and inner vertical walls *b*, *c*, concentrically arranged, and rising from said base, and a bulkhead *d* placed between and secured to the outer and inner walls *b*, *c*, substantially as described. 2nd. In a foundation for light houses and other heavy structures, the combination of the base *a*, outer and inner vertical walls *b*, *c*, bulkheads *d*, placed between and secured to the outer and inner walls *b*, *c*, and intermediate frames also placed between and secured to said walls, substantially as described. 3rd. The combination of the base *a*, outer and inner walls *b*, *c*, joined together by braces, and flukes *n*, projecting diagonally downward from the under side of said base *a*, substantially as described. 4th. The combination of the base *a*, outer and inner walls *b*, *c*, and interposed braces, and the cross-bars *h*, and foot plate h^1, substantially as described. 5th. The combination of the base *a*, outer and inner walls *b*, *c*, bulkheads *d*, having holes therethrough, stringers *e*, passing through said holes, and frames *f*, *g*, placed between and secured to said walls, substantially as described. 6th. The combination of the base *a*, outer and inner walls *b*, *c*, bulkheads *d* having holes therethrough, stringers *e* passing through said holes, and intermediate frames placed between and secured to said walls, and the top plates *m*, m^1, m^2, substantially as described.

No. 46,689. Sock. (*Chaussette.*)

The Granite Mills of St. Hyacinthe, assignee of Moritz Boas, all of St. Hyacinthe, Quebec, Canada, 1st August, 1894; 6 years.

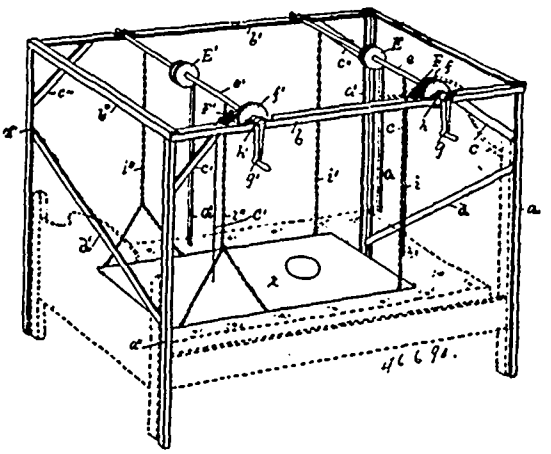
Claim.—1st. An integral sock composed of an inner and outer section having an air space between for the purposes set forth. 2nd An integral sock composed of two reversible sections as described having an air space between for the purpose set forth. 3rd. An



integral sock composed of two like sections *a* and *b* of sock form having an air space *c* between them, joined transversely at the open end, and longitudinally down the back and front for the purposes set forth.

No. 46,690. Machines for Moving Invalids.

(*Appareil pour le maniement des invalides.*)



George Payne, Orillia, and Walter, P. Thomson, Coldwater, all of Ontario, Canada, 1st August, 1894; 6 years.

Claim.—1st. In an apparatus for handling invalids the combination of a series of uprights, a frame connected to the top end of the uprights, spindles mounted in bearings on said frame, a ratchet wheel mounted in each of said spindles and engaging with the dogs connected to the said frame, cords passing over and adapted to be wound upon the said spindles, and a hammock connected to the lower end of said cords, substantially as specified. 2nd. In an apparatus for handling invalids the combination of a series of uprights *a*, a^1, a^2, a^3, a cross piece *b* connecting together the tops of the uprights *a*, a^2, a cross-piece b^1 connecting together the tops of the uprights a^1, a^2, a cross-piece b^3 connecting together the tops of the uprights *a* a^1, and a cross-piece b^2, connecting together the tops of the uprights a^2, a^3, the braces *c*, c^1, c^2, c^3, connected respectively to the cross-pieces *b*, b^1, and to the uprights *a*, a^2, a^1, a^3, the braces *d* connected to the uprights *a*, a^1, the braces d^1 connected to the uprights a^2, a^3, the spindle *e* mounted in bearings on the top of the cross-pieces *b*, b^1, the ratchet wheel *f* rigidly mounted on the spindle *e*, the dog F engaging with the teeth of the ratchet wheel *f*, the crank *g* connected to the end of the spindle, the cords *i*, i^1 passing over and adapted to be wound on the spindle *e*, the spindle e^1 journalled in bearings h^1, mounted on the top of the cross pieces *b*, b^1, the ratchet wheel f^1 rigidly mounted on the spindle e^1, the dog F^1, engaging with the teeth of the ratchet wheel f^1, the crank g^1 connected to the end of the spindle e^1, the cords *i*, i^2, i^3, passing over and adapted to be wound on the spindle e^1, the lower end of the cord i^2, i^3 forked and connected to their respective sides of the hammock *x*, the lower end of the cords *i*, i^1, connected to the hammock *x* at the opposite end to the cords i^2, i^3, the hammock *x*, and the cords *z* and *w*, substantially as specified. 3rd. In an apparatus for handling invalids the combination of a series of uprights, a frame connected to the top end of the uprights, spindles mounted in bearings on said frame, a ratchet wheel mounted in each of said spindles and engaging with the dogs connected to the said frame, cords passing over and adapted to be wound upon the said spindles, and a hammock connected to the lower end of said cords, a grooved pulley mounted on each of said spindles, and a strap passing over each of said grooved pulleys, by means of which the patient can raise himself, substantially as specified.

No. 46,691. Method of Extracting of Metals from Ores.

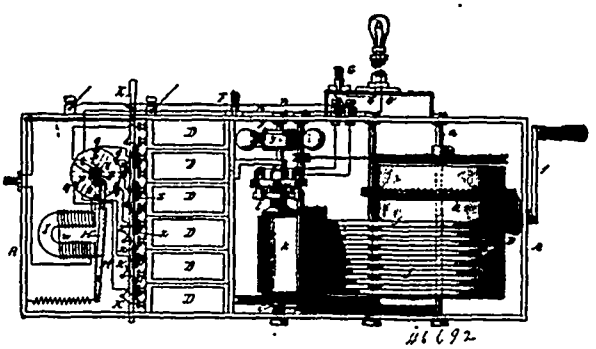
(*Appareil pour extraire les métaux des minerais.*)

Dr. Carl Hopfner, Giessen, Germany, 1st August, 1894; 6 years.

Claim.—1st. In the extraction of metals, as copper and nickel,

from ore or matte, the improvement which consists in converting these metals into a sulfate by roasting the material, leaching out the sulfates and treating the sulfate solution with a suitable *reagent that will convert said sulfates into a chlorid, and at the* same time eliminate the sulfuric acid, for the purpose set forth. 2nd. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in forming a chloride solution of the metals by roasting a mixture of ore or matte and a suitable chlorid as sodium chlorid, and leaching out the chlorid without dissolving a considerable portion of the sulfates or sulfuric acid, for the purpose set forth. 3rd. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting the metals into a chlorid, forming therewith a solution substantially as described, and reducing the same into a sub-chlorid solution by means of a suitable reducing agent as an ore or matte containing copper or copper and nickel, for the purpose set forth. 4th. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting the metal into a chlorid, forming therewith a solution, substantially as described, reducing the said solution into a sub-chlorid solution by means of a suitable reducing agent, and freeing said sub-chlorid solution from metals other than copper or copper and nickel by suitable chemical agents as pulverized limestone or burnt lime, for the purpose set forth. 5th. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting the metal into a chlorid, forming therewith a solution substantially as described, reducing the said solution into a sub-chlorid solution by means of a suitable reducing agent, and freeing said sub-chlorid solution from metals other than copper or copper and nickel by suitable chemical agents as pulverized limestone or burnt lime, and extracting the copper from the sub-chlorid solution in the form of an oxid by a suitable agent, for the purpose set forth. 6th. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting the copper and nickel into chlorids, forming therewith a solution substantially as described, reducing the same into a sub-chlorid solution by a suitable reducing agent, extracting the copper from the solution, freeing the latter from iron and other impurities and extracting the nickel, substantially as and for the purpose set forth. 7th. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting the copper into a chlorid, forming therewith a cupric chlorid solution as described, and converting the cupric chlorid solution into a cuprous chlorid solution by electrolysis whereby chlorine is simultaneously obtained, substantially as set forth. 8th. In the extraction of metals, as copper and nickel, from ore or matte, the improvement which consists in converting said metals into chlorid, forming therewith a solution as described, reducing the same to a sub-chlorid solution, extracting the copper or nickel electrolytically, and preventing a simultaneous deposition of a more electro-positive metal by imparting motion to the cathode, substantially as and for the purpose set forth.

No. 46,692. Apparatus for Generating and Supplying Electricity. (*Appareil pour la génération et l'approvisionnement de l'électricité.*)

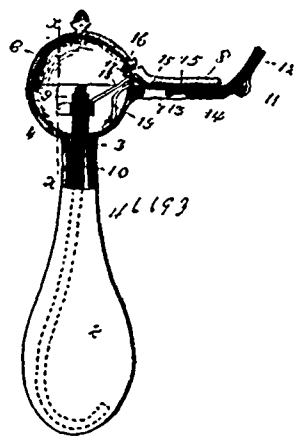


Joseph L. Ketcher, New York,, State of New York, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. An electrical apparatus for domestic use, comprising the following elements in combination, an electric generator, a mechanical motor for operating the generator, a storage battery, *conductors connecting the generator and the storage battery, and a* magnetic switch in circuit with the generator and storage battery, whereby the battery is automatically cut out when fully charged. 2nd. The combination, substantially as set forth, of an electric generator, a mechanical motor for actuating said generator, a series of storage battery cells, and a magnetic switch in circuit with the generator and adapted to direct the generator current to the storage cells in succession. 3rd. In combination with a magneto-electric generator, a motor for operating the same, said motor being adapted to be wound manually. 4th. The herein described generator, consisting of permanent magnets *j*, pole pieces *k*, having tangs k^1, extending between the magnet poles, bobbins *m*, and armature i^2, located and arranged to rotate between the pole pieces *k*, all combined and operating substantially as set forth. 5th. In combination with an electric generator and with storage battery cells, conductors for conveying current from the generator to the cells, and a switch interposed between the generator and the cells and in circuit with the generator, said switch being adapted to direct the current at will of the user to anyone of the cells or to all of them at once, as desired. 6th. In combination with an electric generator and with storage battery cells, a switch consisting of a conducting disc or plate in electrical communication with one pole of the generator, a series of contact blocks carried by, but insulated from said disc or plate, an arm in electrical communication with said plate and adapted to make contact with anyone of the contact blocks, and a spider or conducting plate adapted to connect and disconnect the several contact blocks at the will of the user. 7th. In combination with a generator and a series of storage battery cells, an automatic switch comprising a conducting plate, a series of insulated contact blocks carried by said plate, an arm movable from one to another of said contact blocks and provided with a ratchet wheel, an electro-magnet in circuit with the generator and conducting plate, and a lever provided with a pawl to act upon the ratchet wheel and with a soft iron armature opposite the magnet poles, the magnet winding being such as to offer a greater resistance to the generator current than do the storage cells. 8th. In combination with an electric generator and with storage battery cells, a switch comprising disc *p*, insulated contacts *q*, each connected with one pole of one of the storage cells, movable arm *t*, provided with ratchet wheel t^1, electro-magnet I, lever H provided with armature H^1, dog *v*, spring *w*, and spider *s*, adapted to be thrown into and out of contact with the contact blocks *q*, all substantially as described. 9th. In combination with a generator and a series of storage battery cells, a coupling-bar provided with a series of insulated conducting blocks, each adapted to connect the positive terminal of one cell with the negative terminal of another, substantially as and for the purpose explained.

No. 46,693. Electric Cigar Lighter.

(*Allumoir électrique de cigares.*)

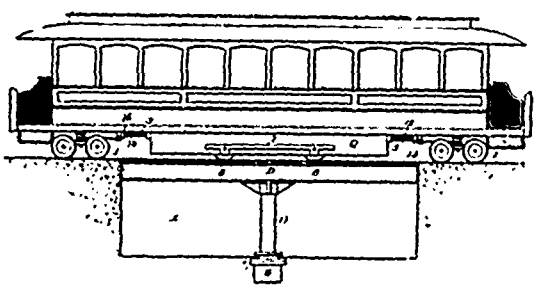


Charles B. Struble, Minneapolis, Minnesota, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. The combination of an electric circuit and a source of electricity included therein, with a bulb to contain the inflammable fluid, a tube leading therefrom, a hinged cap inclosing the same, and electric contacts connected with opposite sides of said electric circuit and adapted to engage when said cap is opened, substantially as described, and for the purpose specified. 2nd. The combination, with a bulb serving as a handle and adapted to contain alcohol, with a wick, a wick tube, a cap tightly inclosing the same and arranged to be opened, electric sparking contacts arranged within said cap in proximity to said wick and adapted to engage with one another when said cap is opened, and an electric circuit and source of electricity connected with said contacts, substantially as described. 3rd. The combination, with a bulb adapted to contain alcohol, of a wick tube and a wick arranged therein, and an inclosing cap comprised of two parts, one of which is hinged upon the other and provided with an arm, an electric contact provided upon said wick *tube, a second contact or finger arranged upon the hinged part of* the cap to engage the tube contact when the cap is opened, and a supporting cord provided with conductor strands connected with said contacts respectively and included in the circuit of a suitable source of electricity, substantially as described. 4th. The combination, with a bulb to contain alcohol or like fluid, of a wick tube connected therewith, a wick arranged in same and said bulb, an inclosing cap or ball arranged about said wick tube and composed of two parts one of which is hinged, an electric contact provided in proximity to the end of the wick, a striking finger provided upon the hinged part of said cap, and a guard adapted to protect said contact from the downward stroke of said finger and an electric circuit including said contacts whereby when said cap is opened a spark is

made to ignite said wick, substantially as described. 5th. The combination of a bulb serving as a handle, with a part 4 arranged upon the end of the bulb and having a wick tube, a wick arranged therein, a part 6 hinged upon the lower part and provided with an arm, a contret 20 provided upon said tube, a finger provided upon the part 6 and adapted to engage said contact when said part is raised, said finger and said contact being connected with opposite sides of an electric circuit, and an insulated guard 21 to protect the contact 20 from the down stroke of said finger to prevent a second completion of the circuit on the closing of the cap, substantially as described. 6th. The combination, with a bulb 2, of the ball or cap arranged thereon and composed of the lower part 4 having the wick tube, and the upper part 6 hinged on the lower part, the arm 8 of said upper part, said arm provided with a loop orring and a recess a spring 19, the contacts arranged within said ball, the electric conductor cord 12 having strands 14 and 15 arranged in said recess of the arm 8 and connected with said contacts, substantially as described.

No. 46,694. Apparatus for Applying and Removing Storage Batteries. (*Appareil pour appliquer et déplacer les accumulateurs.*)

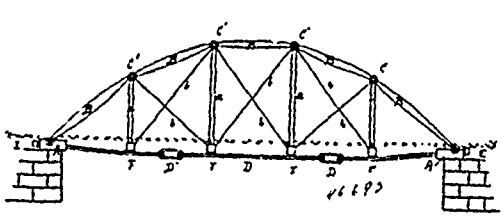


William E. Worthen, New York, State of New York, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. The combination with the main track and railway car, supported upon wheels, of a battery truck supported upon wheels and supporting a battery and a motor or motors, and connected detachably with the body of the car, a movable track section, and a support for the track section whereby the same with the truck can be removed to and from the body of the car, substantially as set forth. 2nd. The combination with a railway car and its supporting wheels, of a wheeled truck supporting a secondary battery connected detachably to the body of the car, of a track having a section supported upon a vertically movable platform adapted to receive and carry the battery truck, substantially as set forth. 3rd. The combination with a track having a section supported upon a vertically movable platform D, of a lower track extending to the storage house, with rails coinciding with those of the platform when it is lowered, and a car provided with a wheeled truck connected detachably to the body and carrying a storage battery, substantially as set forth. 4th. The combination of a track, movable platform carrying rails, and a car having a wheeled truck supporting a motor and a storage battery and connected detachably and flexibly with the body of the car, substantially as and for the purpose set forth. 5th. The combination in a railway car having Bissell trucks, of a removable battery truck provided with wheels and carrying a storage battery and motor, substantially as set forth. 6th. The combination of a car, its supporting wheels, a battery truck having supporting wheels, and spring connections between the battery truck and the car, substantially as described.

No. 46,695. Arch Bridge. (*Arche de pont.*)

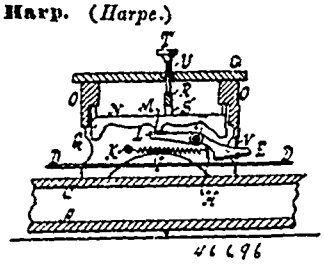
FIG 1



Alexander Solomon Wallbridge, Mystic, Quebec, Canada, 1st August, 1894; 6 years.

Claim.—1st. The herein described method of constructing bridges consisting of assembling straight sections of wood or metal in the form of an arch, the sections terminating in heads, off-set to give the arch one axial or central alignment, and having heavy pins to join the sections from which the girders supporting the floor of the bridge are suspended, and one or more tension rods passing from end to end of the arch under the girders, whereby the said arch is held to its curve, substantially as herein described. 2nd. A bridge consisting of the straight sections B, having terminal heads c, off-set to keep the alignment of the sections when joined by the pins c^1, said sections assembled to form an arch which is held in shape by the tension rod D, secured to the end plates A, to which the end sections B are fixed, and having girders F, to support the floor of the bridge, they being suspended from the joints of the sections c^1, by the stay rods *a*, and braced by the rods *b*, substantially as herein before shown and described and as and for the purposes set forth. 3rd. In a bridge made of end plates A, sections B, pins c^1, tension rod D and stay rods *a*, the combination with the girders F, which support the floor of the bridge, of the head blocks G, having the recesses *g*, of the stay rods *a*, and braces *b*, having the nuts b^1, substantially as and for the purposes herein set forth. 4th. The combination in a bridge of two arches made up of end plates A, sections B, having joints C, and pins C^1, tension rods D, having turn buckles D^1, and nuts E, and stay and brace rods *a*, *b*, with a third arch exactly similar resting upon the apices of the two first, its proper centre coming over the point of contact of the first two arches and suspending the same at this point of contact, substantially to take place of an abutment or other support as described.

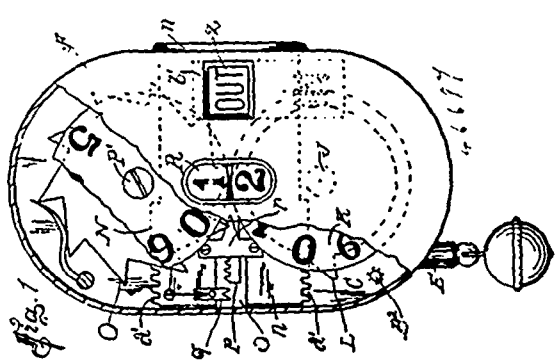
No. 46,696. Harp. (*Harpe.*)



The C. F. Zimmerman Company, Dolgeville, New York, assignee of Walter J. Richie, Lima, Ohio, all in the U.S.A., 1st August, 1894; 6 years.

Claim.—1st. The combination with a stringed instrument, of a series of pivoted, rocking-dampers, springs acting on the dampers and normally holding them in contact with the strings of the instrument, slides movable to and from the dampers and having fingers acting thereupon to rock them out of contact with the strings when said slides are pressed toward said dampers, means for guiding the slides in their movements, spring-retracted keys arranged at one side of the slides, and devices acted on by the keys for moving the slides and causing their fingers to move the dampers out of contact with the strings, substantially as set forth. 2nd. The combination with a stringed instrument, of a series of pivoted dampers having tail-pieces, springs acting on the dampers and normally holding them in contact with the strings, vertically movable slides having fingers for acting on the tail-pieces of the dampers to move the latter out of contact with the strings, vertically movable bars extending over the said slides and adapted to engage and depress the latter to rock the dampers and move them out of contact with the strings, and spring-pressed keys for actuating said bars, substantially as described. 3rd. The combination with a series of dampers, of releasing fingers for the dampers, an actuating bar provided with lugs S made to act on a portion of the fingers and to leave the remaining fingers unactuated, and a key for the actuating bar, substantially as described. 4th. The combination with a series of dampers, of releasing fingers for the dampers, slides from which the fingers extend, an actuating bar for the slides, and a key for actuating the bar, substantially as described.

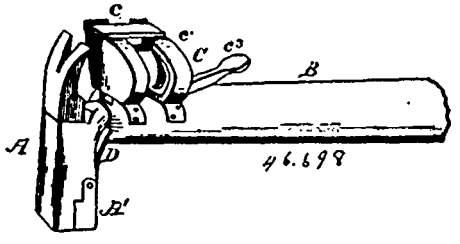
No. 46,697. Fare Register. (*Régistre de billet.*)



The San Francisco Register Company, San Francisco, assignee of Charles L. Logan, Los Angeles, all in California, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. In a fare register, the combination with a casing, of two independent shafts J and P carrying, respectively, the units and tens, trip-dials K and N, the single tooth wheel L mounted upon shaft J, the ten tooth wheel O mounted upon shaft P and adapted to be engaged by wheel L, the total-register unit-dial U mounted loosely upon the shaft J, a ratchet wheel T secured to the dial U, an arm S secured to the shaft J and provided with a pawl *q* to engage the ratchet wheel, means for resetting the trip-dials, and a detent for holding the unit-dial U at rest during the resetting operation. 2nd. In a fare register, the combination with the trip-dials K and N, and their mutilated gears, of means for turning them in one direction, and a resetting means adapted to engage the gears and turn them in the opposite direction. 3rd. In a fare register, the combination with the trip-dials K and N, and their mutilated gears, of the actuating rod or stem adapted to turn them always in one direction, and a sliding toothed plate, adapted to turn them in the opposite direction. 4th. In a fare register, the combinatin with the trip-dials K and N, of the mutilated gears having their inactive faces in line with the *o*, on the respective dials, means for rotating each dial always in a given direction, and a toothed plate working between the gears. 5th. In a fare register, the combination with the trip dials K and N and their actuating mechanism, of a slide *n*, and means, substantially such as shown and described for resetting the dials, so disposed with reference to the actuating mechanism that the resetting and the actuation of the dials cannot be effected at the same time. 6th. In a fare register, the combination with the trip-dials K and N and their actuating mechanism, of a slide *n*, and suitable connections for resetting the dials, said resetting means being normally inert and adapted to come into play only in case the dials have been operated by their actuating mechanism, all substantially as shown and described. 7th. In combination with the trip-dials K and N, a resetting slide for the latter, and an actuating mechanism for said dials arranged in such relation to the resetting slide as to be incapable of action during the operation of the resetting slide, all substantially as shown and described. 8th. In a fare register, the combination with the trip-dials K and N, of a sliding plate *n* and intermediate connections for setting the dials, and a trip-indicating plate actuated by said slide. 9th. In a fare register, the combination with the trip-dials K and N, of a sliding setting plate therefor provided with a pin or stud *v*, and the indicator plate *t* provided with the cam slot *w x*. 10th. In a fare register, the combination with the indicator plate *t*, provided with a V-shaped cam slot *w x*, of a slide *n* provided with a pin *v*, a projection *r* upon the slide, and a pivoted dog *s* mounted upon the plate in position to be struck by the projection *r*. 11th. In a fare register, the combination with the plate *t* provided with a V-shaped cam slot, and with a pivoted dog *s* of means for rocking the dog, and the slide *n* provided with a pin *v* to enter the cam slot, and with a projection *r* to engage the dog.

No. 46,698. Hammer. (*Marteau.*)



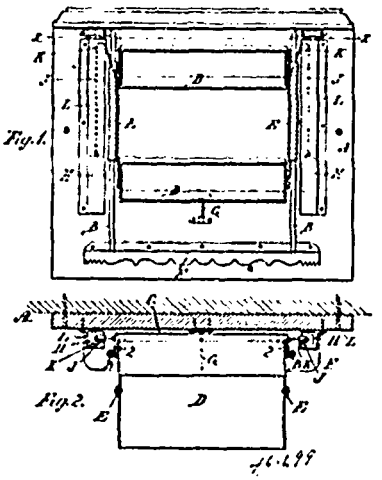
William A. Wiley and James F. Harvey, both of Rochester, Minnesota, U.S.A., 1st August, 1894; 6 years.

Claim.—1st. In hammers, the nailholders C, having the hopper *c*, the curved slot c^1, the pivoted support c^2, and the tilting lever c^3, supported at the handle by a spring, in combination with a recessed hammer-handle and a hammer-head having a channel open at the top for the purpose set forth. 2nd. The hammer-head A, having the channel *a*, extending perpendicularly therethrough, and so shaped as to permit the free passage of the nail except at its outer end which is only large enough for the passage of the shank of the nail which is thus returned by the head only, and provided with a spring held pivoted jaw A^1, cut out on the inside to form the shoulders a^1, a^2, between which the nail-head is supported, all substantially as shown and described.

No. 46,699. Book Safe. (*Coffre-fort pour livres.*)

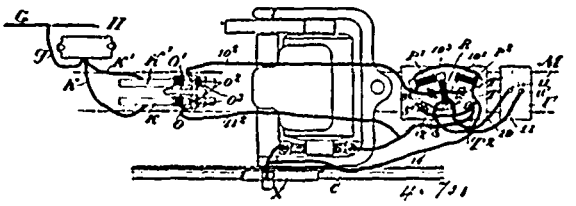
Michael B. O'Neill, and John D. McKenzie, both of Pictou, Nova Scotia, Canada, 1st August, 1894; 6 years.

Claim.—1st. The combination with parallel guide-rods B, B, of the back-plate C, sliding thereon, a series of book trays or shelves D, pivoted at the ends to said plate, to fold against said plate and connected by slats or straps E, and a stop F, supporting the lowest shelf or tray, as set forth. 2nd. The combination with a series of book trays or shelves D, D, folding as set forth, of the weights H,



H, or coiled wire springs, cords J, and pulleys K, counter-balancing said trays and their contents, as described.

No. 46,700. Electrical Propulsion of Cars. (*Propulsion électrique des chars.*)



William J. Still, and Randolph MacDonald, both of Toronto, Ontario, Canada, 2nd August, 1894; 6 years.

Claim.—1st. In double track electric railways, the combination with two dynamos connected together in series, of two feed wires one of which is connected to the free positive pole of one dynamo, and is carried along the side of the track and connected to a bare conductor parallel to and in immediate vicinity of the up track, and the other wire of which is connected to the free negative pole of the other dynamo, and is carried alongside the track and connected to a bare conductor parallel to and in immediate vicinity of the down track, and the connections of both wires being through the motors of the up and down cars, and two sets of rails, which are electrically connected together and to the two remaining poles of each dynamo, as and for the purpose specified. 2nd. The combination with a generating dynamo, of a circuit wire leading from the positive binding post of the dynamo to a series of switches located throughout the length of the track, which switches are connected to a series of parallel plates situated between the tracks at desired distances apart, the plates being connected by brushes on each side of a trolley-wheel supported on trolley-arms pivotally connected to a bar attached to the frame of the car, electrical connections being provided from each brush to a storage battery situated in the car, so that when the brushes pass over the plate, the switch H, is thrown in to complete the circuit, which then passes through the plates and brushes in opposite direction to that of the storage battery current and then through the motor and back by the wheel of the car to the rails, which are connected by wire to the negative binding post of the generating dynamo, as and for the purpose specified. 3rd. The combination with the two dynamos A, B, connected in series, the positive wire G, connected to the switches H, by the short wire *g*, and connected to the plates K and K^1, between the rails C and C^1, by the short wires *k*, k^1, and the negative wire I, which is connected to the switches J, by the short wires *i*, and are connected to the plates L and L^1, between the rails D and D^1, by the wires *l* and l^1, of the up and down cars provided with a series of trolley-wheels journalled in the ends of the trolley-arms attached to the bar affixed to the truck frame, and a series of trolley brushes affiexed one on each side of each trolley-wheel and electrically connected to a storage battery of the car and to the motor, so that when the trolley brushes are on the plates, the switches H and J, close a circuit, and the main current passes through the motors of both cars, rails and cross wires F, as and for the purpose specified. 4th. The combination with the generating dynamos, and the positive and negative wires leading from their binding posts throughout the length of the system and being connected to a series of circui.

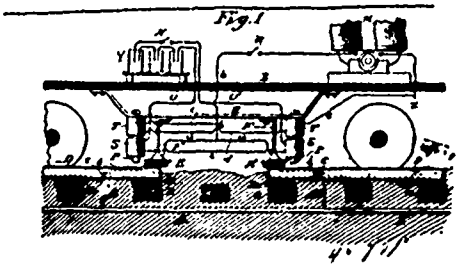
closing switches, which in turn are connected to a series of parallel contact plates between the rails of each track, of the trolley brushes connected by contact with the plates to the storage battery, and to the reversing switches and to and through the motors to the rails and cross-wires F, the reversing switch P, in the motor car on one track being oppositely set to the reversing switch in the motor car on the other track, so that the current from the storage battery to the reversing switch will pass through the wires, plates, brushes and branch wires to the circuit closing switch in a different direction on each track, as and for the purpose specified. 5th. The combination with the main current circuit wires having short branch wires as specified, of the switches H, and storage battery current wires leading into the same and so arranged that upon the brushes coming upon the contact plates the storage battery current is completed so as to throw in the main current, which passes through the switch in the same manner, so as to keep it closed while the brushes are on the contact plates as and for the purpose specified. 6th. The combination the main current and the storage battery, the circuit of which is completed as specified, of the switch H, suitably enclosed, comprising the coils H^2 and H^3, pivoted armature H^5, and arm H^6, and arched contact plate H^7, the wires 4, passing around and forming the coils of the magnet and connected to the binding posts 5 and 6, from which lead the wires to the storage battery and the wire 9, leading from the binding post 5, around the magnet coils to the arm H^6, which when held up by the storage battery current through the fine wire 4, of the coils completes the main circuit through the arched plate H^7, and wire 7, and wire g, as and for the purpose specified. 7th. The switch H, comprising the coils H^2 and H^3, partially of fine wire 4, leading from the storage battery and heavy wire 9, connected to the main circuit by the storage battery current, the armature H^5, carbon contact block H^9, arched contact plates H^7, connected to the main circuit as shown and for the purpose specified. 8th. The combination with the main circuit wires and circuit closing switches arranged as specified, of a reversing switch P, comprised of the double magnets P^1 and P^2, the swinging magnet R, contact plates S and T, connected near the pivot point of the swinging magnet, the contact plates S and T, being arranged to come in contact with the carbon contact blocks S^1 and T, when the magnet is swung so that its polar ends come against the polar ends of the magnets P^1, and the carbon contact blocks S^2 and T^2, when the polar ends of the magnet R, are swung against the polar ends of the magnet P^2, the plates S and T, being connected by the wires 10 and 11, to the storage battery, the magnet R being always of the same polarity through its connections to the wires 10 and 12, the magnets P^1 and P^2, being connected in the main circuit through the wires 10^2, 10^3 and 14, leading to the rail, the contact blocks S^1 and T^2, being connected by the wire 12, the wire 10^2, leading to the carbon contact blocks S^2 and T^1, and the wires 11^2, leading out from the contact block P^1, all the parts being supported upon the insulated plate Q, as and for the purpose specified. 9th. In a system for the electrical propulsion of cars as described, the combination with the series of pairs of plates situated at desired distances apart, of a series of trolley-wheels supported and journalled in the ends of suitable arms attached to a bar running lengthwise of the car and supported on the truck, the wheels and arms being located at suitable distances apart and each wheel having a pair of brushes supported one on each side and insulated from each other, the brushes being electrically connected to the storage battery in the car and the contact plates being connected to the circuit closing switches on the main circuit wires, as and for the purpose specified. 10th. The combination, with a series of pairs of contact plates located at desired distances apart and having a groove between each pair, of a trolley-wheel N, journalled in the ends of the forked arms n, pivotally connected to the bar M, and the brushes O and O^1, secured on each side of the trolley-wheel, so that the bottom of the brushes are above the bottom of the trolley-wheel, the brushes being suitably insulated from each other and electrically connected to the motor of the car, as and for the purpose specified. 11th. The trolley-wheel N, supported in the ends of the forked brackets n, and having the brushes O and O^1, and located one at each side and suitably insulated from each other and the pins n^1, extending laterally outwardly from the arm n, into the slots n^2, in the downwardly extending sides n^3, of the bracket n^4, as and for the purpose specified. 12th. The trolley-wheel N, supported in the ends of the forked brackets n, and having the brushes O and O^1, located one at each side and suitably insulated from each other, the pins n^1, extending laterally outwardly from the arm n, into the notches n^2, in the downwardly extending sides n^3, of the bracket n^4, the rod m, pivotally connected at the bottom within the forked arm n, and extending through a hole m^1, m, in the bracket n^4, and a hole m^3, in the bar M, and the spiral spring m^2, encircling the rod M, as shown and for the purpose specified. 13th. The combination, with a series of plates situated at desired distances apart, of the brushes designed to come in continual contact with such plates as they pass over them and means for supporting such brushes from the ground as they pass over the spaces between the plates, and for the purpose specified.

No. 46,701. Electric Railway System.

(Système électrique de chemin de fer.)

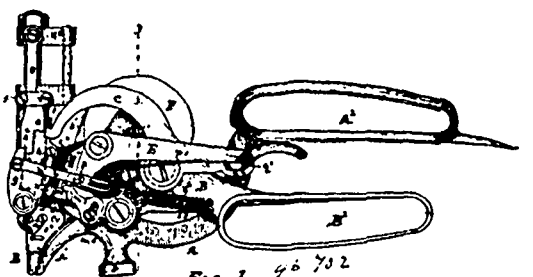
The Magnetic Electric Company of Boston, assignee of Edward H. Brown, of Salem, Massachusetts, all of the U.S.A., 2nd August, 1894; 6 years.

Claim.—1st. In a closed conduit electric railway system, in combination with a car provided with magnets, a main electric supply wire, magnetic contacts and separate and independent enclosures for the same, said enclosures forming sections of a continual central rail, said main wire independent of said enclosures and directly connected with said contacts, substantially as described. 2nd. A main electric supply in combination with separate and independently operating magnetic contacts, separate insulating enclosures for said contacts forging conducting surfaces, said contacts lying longitudinally and loosely within said enclosures, and a separate, flexible and direct connection between each of said contacts, and the main



electric supply, substantially as described. 3rd. Closed independent and separate sections, each forming a surface conductor, a section of a continual central rail, and an insulating enclosure, in combination with independent longitudinal switch contacts each lying loosely within such enclosure, substantially as described. 4th. The closed switch boxs in section forming, the centre rail of considerable length and separated by a considerable insulating space, in combination with the separate and independently movable magnetic contacts contained in said boxes said magnetic contact adapted to have a continuous connection throughout the entire length of each contact with the conducting surface of said boxes, of a car, magnets and current collectors on the car, substantially as described. 5th. In combination with magnets on a car, a series of boxes containing magnetic rods or strips lying in insulated, watertight spaces in said boxes, and having upper coverings of good conductivity, preferably non-magnetic, said rods or strips being connected with the main line wire by a flexible, insulated wire allowing said rods free play up and down in said spaces, said series of boxes placed in the ground between the rails, substantially as described. 6th. The combination of a continuous insulated main line wire with one or more magnetic rods or strips, the said main wire connected to said rods or strips by a flexible wire, a water tight receptacle having a cover of conducting material, said rods or strips lying loosely in said receptacle and a car provided with magnets and contact brushes on its under surface, substantially as described.

No. 46,702. Hand Lasting Tool. (*Outil à enformer à main.*)

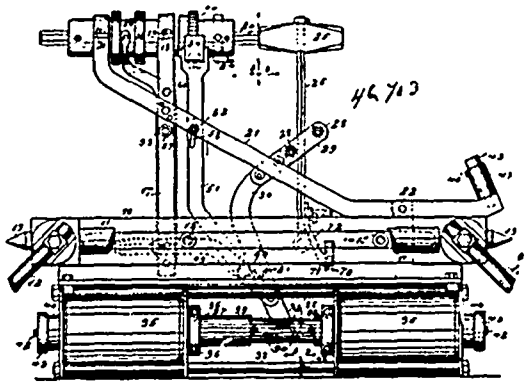


Isaie Fréchette, Montreal and Jean B. Laliine, St. Hyacinthe, all of Quebec, Canada, 2nd August, 1894; 6 years.

Claim.—1st. In a hand lasting tool, the combination of a pair of pincher jaw levers pivoted together and crossing each other as set forth, a nail delivering orifice through the nose of one of said pincher jaws, a vertically movable driver mounted in a bearing in said jaw above, and in axial line with said orifice, a spring applied to said driver to move it towards the nose end of said jaw, a vertically movable bar connected at one end to said driver and provided at its opposite end with shoulders e^1 and e^2, a lever pivoted to the jaw lever which carries said driver, and connected to, and vibrated by the other jaw lever and adapted to engage, at its free end, the shoulder e^1, to raise said driver without being attached thereto, the pawl g, constructed and arranged to engage the shoulder e^2, and lock said driver, and maintain it in said raised position, while the pincher jaws may be operated on an indefinite number of lines, means having povision for automatically placing a nail in position in line with said orifice, and means having provision for tripping said pawl to release said driver. 2nd. In a hand lasting tool, the combination of a pair of pincher jaw levers pivoted together, a spring for opening said jaws, a hammer head on one of said jaws, a nail delivering orifice through the nose of the other jaw, a nail driving plunger mounted in a bearing in said jaw above said orifice, a

spring connected to, and acting upon said plunger, and adapted to be strained when said plunger is raised, the lever C, the pin g^2, the shouldered bar c connected to said driver, the oblique channels or grooves k, and o formed in the jaw B^1, the cam levers m^1 and m^2, the lever m^3, pivoted to and adjustable on the lever m^1, m^2, the feed pawl carried by the levers m^1, m^3, the nail receiver and carrier o^2, pivoted in a cavity in the jaw B, and connected and arranged to co-operate with the lower end of said feed pawl to sever a nail, the bar o^1 for operating said receiver, the pawl g, the slotted link h^1, and the thumb operated lever E. 3rd. The combination of the pincher jaws A^1 and B^1, provided respectively with the operating arms A and B, the driver c, c^1, the lifter bar c, provided with the shoulders c^1 and c^2, the lever C, provided with the shoulder q at one end, and the slot q^1 at its other end, and pivoted to the lever B^1, the stud q^2, set in the lever A, and engaging the slot q^1, the pawl g, the spring h, the bar h^1, provided with the slot i, the lever E, provided with the pin i^1, projecting into said slot, and a nail delivering and guiding passage through the nose of the jaw B, beneath the driver c, c^1. 4th. The combination of the pincher jaws A^1 and B^1, provided respectively with the operating arms A and B, a nail guiding orifice through said jaw B, the driver c, c^1, the channel B^1 for guiding the blank wire, the nail receiving and severing jaw o^2, the receiver operating bar o^1, the spring o^3, the cam levers m^1 and m^2, the arm m^3, adjustable attached to the cam lever m^1, the pawl n^1, the spring l^2, l^3 and p^1, and the lever E, pivoted to the lever B, and provided at the end of its short arm with a truck to act upon the cam levers m^1 and m^2, and at its other end with the pad E^1, all constructed arranged and operating, substantially as and for the purposes described.

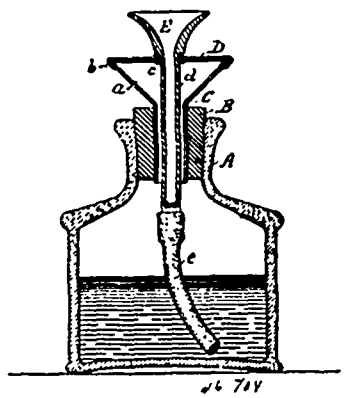
No. 46,703. Rock Drill. (*Foret de mine.*)



George W. Pickett and Samuel Lesem, Denver, Colorado, U.S.A., 2nd August, 1894; 6 years.

Claim.—1st. A rock-drill, comprising a drill-holder, a swinging hammer arranged to strike a drill in the holder, a reciprocating electrically operated plunger, and an operative connection between the plunger and the hammer, whereby the hammer is swung by the movement of the plunger, substantially as described. 2nd. A rock-drill, comprising a drill-holder, a swinging hammer to strike a drill in the holder, a reciprocating plunger, oppositely arranged solenoids to work the plunger, and a lever connection between the plunger and the swinging hammer, substantially as described. 3rd. A rock-drill, comprising a supporting main frame, a sliding frame therein, a drill-holder supported on the sliding frame, a swinging-hammer mounted on the sliding frame, a reciprocating plunger mounted on the sliding frame, solenoids to work the plunger, a lever connection between the plunger and the hammer, and mechanism actuated by the plunger for revolving and sliding the drill-holder, substantially as described. 4th. A rock-drill, comprising a main frame, a sliding frame therein, a drill-holder supported on the sliding frame, a swinging-hammer mounted on the sliding frame and adapted to swing against a drill in the holder, a reciprocating plunger, solenoids supported on the sliding frame and adapted to work the plunger, a tilting lever connecting the plunger with the hammer shank, and a lever mechanism actuated by the hammer lever and adapted to slide and turn the drill-holder, substantially as described. 5th. The combination, of the reciprocating plunger, the movable drill-holder, the hammer lever connected with the plunger, the swinging-hammer operated by the hammer lever, the tilting forked lever to move the drill-holder longitudinally, and the connecting-rod pivoted to the hammer lever, and having a flexible connection with the forked lever, substantially as described. 6th. In a rock-drill, the combination with a movable tool-holder, of a swinging-hammer operating lever, a lever pivoted to a fixed support, and having a forked end engaging the tool-holder, and a rod pivoted to the hammer operating lever and loosely connected with the lower end of the forked lever, substantially as described. 7th. In a rock-drill, the combination with a movable drill-holder, of a swinging-hammer operating lever, a pivoted lever having its upper end forked and engaging the tool-holder and its lower end transversely slotted, a rod having one end pivoted to the hammer-lever and its other end slotted to receive the lower end of the forked lever, a pin passing through the rod and the slot of the forked lever, and a spring bolt in the front end of the said rod, substantially as described. 8th. In a rock-drill, the combination with a drill-holder provided with a ratchet wheel, of a pivoted hammer operating lever, a crank on the fulcrum pin of said lever and a connecting-rod having its lower end pivoted to the said crank, and provided at its upper end with a pawl engaging the ratchet-wheel of the tool-holder, substantially as described. 9th. In a rock-drill, the combination, with a movable drill-holder provided with a ratchet-wheel, of a pivoted hammer operating lever, a crank on the fulcrum-pin of the said lever, a pivoted lever having a forked upper end engaging the tool-holder, a rod pivoted to the hammer operating lever, and loosely connected with the lower end of the forked lever, and a rod pivoted to the said crank and provided at its upper end with a pawl engaging the said ratchet-wheel, substantially as described. 10th. In a rock-drill, the combination, of the drill-holder, the swinging-hammer adapted to strike the holder, the reciprocating plunger, the oppositely arranged solenoids for working the plunger, and the tilting lever pivoted to the plunger between the solenoids and slidably connected with the hammer shank, substantially as described. 11th. In a rock-drill, the combination, with the main frame, and a sliding frame thereon, of solenoids, a reciprocating plunger therein, a pivoted hammer-shank, a swinging-lever pivotally connected to the plunger, and having a slidable connection with the hammer-shank, a screw, a ratchet-nut on the screw, and a pawl secured to the hammer-shank and adapted to engage the ratchet-nut, substantially as described. 12th. In a rock-drill, the combination, with a solenoid and a reciprocating plunger therein, of a cap-plate on the outer end of the solenoid tube, an abutment plate held loosely within the solenoid tube and connected with the cap-plate, and a packing of wool in the space between the cap and abutment plate, substantially as described.

No. 46,704. Stopper for Ink-bottles.



(*Bouchon d'encrier.*)

Ella Dunning Crumbie, assignee of Gustavus R. Weed, both of Orange, New Jersey, U.S.A., 2nd August, 1894; 6 years.

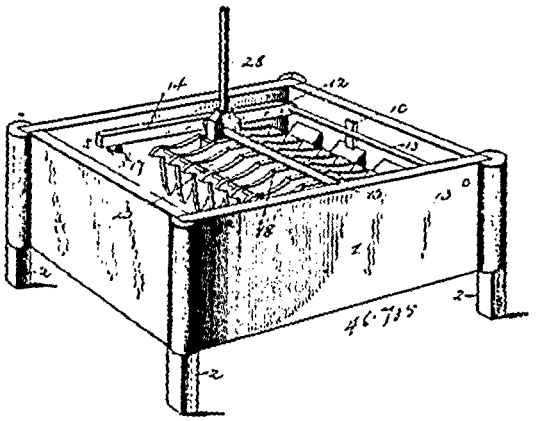
Claim.—An attachment for ink-bottles comprising the centrally aperatured stopper B, an air tube C entering said aperture to force air down into the bottle and provided with a funnel-shaped or flared upper end a, a flexible diaphragm D, provided with a rim b, embracing the rim of the funnel-shaped end a, and having a central aperture c, provided with thickened walls, the ink-funnel E having an ink-tube d, extending down through the aperture c, and through the air-tube C, and of less diameter than said air-tube, substantially as set forth.

No. 46,705. Washing Machine. (*Machine à laver.*)

Alfred Swanson, Peter Swanson, Frank Swanson and Andrew Swanson, assignees of Garret Seger, all of Buffalo, N.Y., U.S.A., 2nd August, 1894; 6 years.

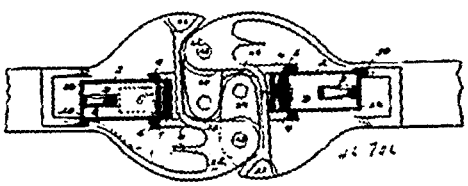
Claim.—1st. A washing machine consisting of a box, a hinged or pivoted rubber-supporting frame and rubber, having a series of front and rear downwardly curved fingers or teeth and a series of depending strips, interposed between said fingers and converging inwardly therefrom, substantially as and for the purpose set forth. 2nd. A washing machine, consisting of a box having inwardly-extending rocker or rubber-supporting pins, a rubber-supporting frame or hanger, having pivotal bearing within said box, a rocker-shaft, pivotally journaled in said frame or hanger, a rocker or rubber secured to said rocker-shaft and composed of a series of disks, strips or plates, having down-curved fingers or teeth at their front and rear edges, and a series of depending inwardly-converging strips, interposed between said fingered disks, and an operative lever or handle, connected with said rocker-shaft and rocker, substantially as and for the purpose set forth. 3rd. A rubber for washing machines, consisting of a transverse rocking shaft, an operative lever or handle, engaged therewith a series of disks, strips or plates attached to said

shaft, and each having at its front and rear ends, respectively, a plurality of downwardly curved fingers or teeth, and a series of slides interposed between and secured to said disks, strips or plates, and extending downwardly therefrom, at an inwardly-converging



angle, substantially as and for the purpose set forth. 4th. A rubber for washing machines, consisting of a rocking-shaft, an operative lever or handle having a bifurcated lower end, a series of disks, strips or plates, attached to said shaft, and having front and rear downwardly-extending curved teeth or fingers, blocks interposed between one pair of said disks and adjacent to said shaft, to grippingly receive the bifurcated end of said lever or handle, and a plurality of depending and inwardly-converging strips, interposed between said disks, substantially as and for the purpose set forth. 5th. A rubber for washing machines, consisting of a rocking-shaft, an operative lever or handle, a series of strips, disks or plates, secured to said shaft, and having downwardly-curved fingers or teeth at their front and rear edges, a series of strips interposed between said fingered disks and extending downwardly and inwardly therefrom, said downwardly-extending strips being spaced between their lower edges and also between their ends, to form transverse and longitudinal ways in the bottom of said rubber for the passage of water, substantially as set forth. 6th. In a washing machine, a box, transverse cleats secured to the bottom thereof, adjacent to each end, and slatted frames angularly supported, respectively, against the ends of said box and against said cleats in the bottom, substantially as and for the purpose set forth. 7th. In a washing machine, a box, transverse, cleats secured to the bottom and adjacent to each end thereof, removable slatted and angularly-extending frames having bearing, respectively, against the ends of said box and upon the bottom and also against said cleats, and turn-buttons for removably securing said slatted frames in position, substantially as and for the purpose set forth.

No. 46,706. Car Coupler. (*Attelage de chars.*)



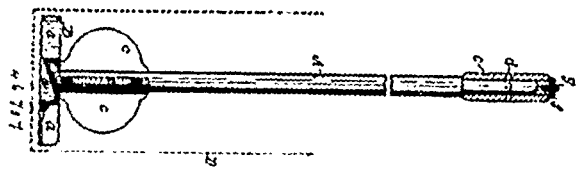
Cornelius Halpin, Tarrytown, New York, U.S.A., 2nd August, 1894; 6 years.

Claim.—In a car-coupling, the combination with a reversed drawhead provided with slots 2 and 3, at its top and bottom, and having abutments 7, at the forward ends of the slots 2 and 3, of bearings 4 at the forward opposite sides of the slot 2, a locking dog 6, having parallel vertical sides pivoted in said bearings and disposed and adapted to swing in the slots 2 and 3, and normally resting by gravity against the abutments 7, a laterally-swinging, pivotally-supported hooked-jaw 14 mounted in front and at one side of the drawhead, and a tail-piece 15, formed with said hooked-jaw and normally projecting across the front of the drawhead in position to be struck by the hooked-jaw on an adjacent, opposite drawhead, said tail-piece raising and entering at one side of, the pivoted, swinging dog when struck by the hooked-jaw on an adjacent opposite drawhead, and said locking dog dropping by gravity and confining said tail-piece in such position, and means for raising said locking dog out of the way to uncouple, substantially as described.

No. 46,707. Churn Dasher. (*Roue de baratte.*)

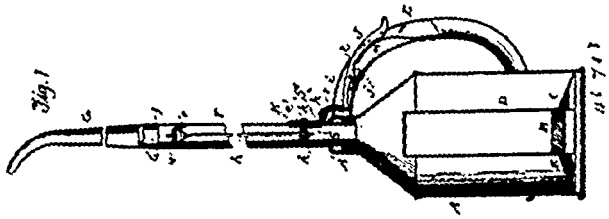
John W. Ricker, Chelsea, Massachusetts, and George A. Horn, Newark, New Jersey, U.S.A., 2nd August, 1894; 6 years.

Claim.—1st. In a churn dasher, the combination, with a staff, the lower end of which is provided with floats, and the upper end is transversely perforated and provided with a shoulder, of a transversely perforated tubular sleeve upon the staff, and a removable



pin through the perforations of the sleeve and the staff, substantially as set forth. 2nd. In a churn dasher, the combination, with a staff, the lower end of which is provided with floats and vertical wings rigidly secured thereto, of a rotatable sleeve upon the upper end of the staff, and means for locking the sleeve against rotation, substantially as set forth.

No. 46,708. Locomotive Oiler. (*Graisseur de locomotives.*)



James H. Turner, Pewee Valley, and Jacob M. McKnight, Louisville, Kentucky, both in the U.S.A., 2nd August, 1894; 6 years.

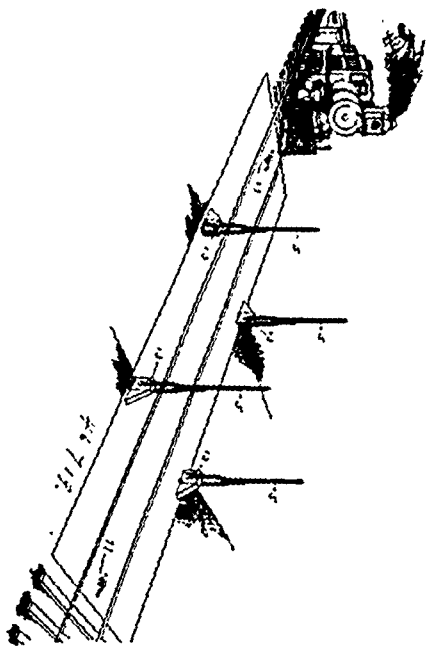
Claim.—1st. The combination with an oiler can and nozzle, screw-jointed together, of a reinforcing exterior neck having the top edge inwardly curved to form a lateral bearing for the tube F above the joint, as shown and described. 2nd. The combination with the reciprocating valve-stem of a locomotive oiler, of the slotted tube F, and the slide K, the latter made in two parts connected by a screw passing through said slotted tube and movable therein, as and for the purpose set forth. 3rd. The combination with the valve-stem, slide K, of the link I pivoted to ears of said slide, the thereto end-pivoted lever J, the hollow slotted handle L, and the spring *n* arranged under the free end of said lever, the rear end of said lever being made to project through said slotted handle, as shown and described. 4th. The combination in a locomotive oiler, of a valve H, a valve-seat *c*, a valve-rod *h*, an arm *k*, a slot c^1, a screw k^1, and the slide K, having an air-hole S, with the tube F, having an air-hole S^1, as and for the purposes set forth. 5th. The combination of the tube F, having an air-hole S^1, with the slide K, having a similar air-hole S, with the screw k^1, the valve-rod *h*, and the valve H, whereby the raising off the slide K, and with it of the valve H, at the same time and with the same mechanism opens the valve to the nozzle G, and causes the air-holes S and S^1 to coincide with each other, thus admitting air to the tube F, and thereby facilitating the free flow of the oil from the nozzle G, as shown and described. 6th. A locomotive oiler, comprising a suitable can or vessel provided with a funnel-shaped bottom having a central aperture or opening and a stopper removably secured in said opening, whereby the bottom of the can is adapted to serve as a funnel in filling, substantially as described. 7th. A locomotive oiler, comprising the can having a suitable handle and a funnel-shaped end or bottom provided with a removable stopper for filling, said can being also provided with a discharge tube or spout having a valve seated therein, normally closed by spring-pressure, and a thumb-lever pivoted upon said handle, and connected to said valve, so as to adapt the valve to be opened by the hand of the operator holding said handle, substantially as described.

No. 46,709. Railway Gate. (*Barrière de chemin de fer.*)

Aimé Barré and Edward Currier, Fall River, Massachusetts, U.S.A., 2nd August, 1894; 6 years.

Claim.—1st. The combination, with a railway track, the opposite pairs of gates, the opposite drums arranged between the rails of the track and beyond the gates, of mechanism between the drums and the gates for operating the latter by movement of the former, a spring-actuated shoe secured to the underside of the locomotive and adapted to come in contact with the drums and operate the same, and means for throwing the shoe into and out of alignment with the drums, substantially as specified. 2nd. The combination, with the gates, drums arranged between the rails of the track and mechanism between the drums operated thereby and adapted to operate the gates, of a base secured to the under side of the locomotive, transverse guide-rods arranged on the under side of the base, a friction-shoe for operating the drums arranged for transverse movement on the guide-rods, a spring for normally drawing the shoe in one direction, a rock-shaft journalled at the side of the shoe, arms connected to the shaft and to the shoe, and an operating rod connected with

one of the arms for oscillating the shaft and moving the shoe against the spring, substantially as specified. 3rd. The combination, with the railway-gates, the opposite transverse shafts arranged beyond the same, friction drums arranged loosely on the shafts and having catches, discs arranged at the sides of the drums and tight upon the shafts and provided with perforations, pairs of reversely disposed latches pivoted on the discs and having reversely bevelled pawls located in the perforations, springs for normally pressing the pawls through the perforations into engagement with catches on the drums, cam arms arranged upon the discs and extending beyond the latches, spring-fingers supported in the path of the latches and the cam arms and normally pressed outward, catches arranged in the path of the spring-fingers and designed to compress the same, and releasing fingers arranged on the discs and adapted to come in contact with and operate the catches so as to liberate the fingers, of motion con-



veying devices between the shafts of the discs and the gates, and means for operating the gates in the reverse direction, substantially as specified. 4th. The combination, with the railway gates, the opposite transverse shafts located beyond the gates, the friction-drums arranged loosely on the shafts and projecting upward between the track-rails and provided at their inner sides with reversely disposed annularly arranged ratchet-teeth, a disc on one side of each drum rigidly mounted on the shaft, arms extending from each shaft, a support for the outer ends of the arms, spring-fingers pivoted upon the arms, latches pivoted above and adapted to be normally located in the paths of the fingers and to lock the same, liberating fingers arranged on the peripheries of the disc and adapted to come in contact with the catches and liberate the fingers, a pair of pivoted latches arranged between the arms upon the disc and having their free ends cut away and adapted to ride over the fingers, pawls connected with the said latches and extending through the discs and normally spring-pressed into engagement with the teeth of the drum and having reversely disposed bevelled faces, finger-de-pressing cam arms arranged upon the disc and extending beyond each of the latches, motion-conveying devices between the shafts and the gates, and means for operating the gates in the reverse direction, substantially as specified. 5th. The combination with the pairs of railway gates, the friction drums beyond the same arranged between the rails, the transverse shafts for loosely supporting the drums, the disc arranged upon the shafts at the sides of the drum, reversely disposed inclined teeth arranged annularly at the sides of the drums adjacent to the discs, the curved slotted guide-bar 57 arranged at the side of each disc, the arms mounted on the shaft of each disc and slotted at their outer ends, adjusting bolts passed through the slots of the arm and the guide-bar, the studs mounted on the arms, U-shaped catches pivoted on the studs, springs for normally actuating the same in one direction, pivoted fingers arranged in the paths of the catches, springs for normally throwing the same outward, catch-liberating fingers arranged on the periphery of the disc and adapted to contact with the catches, pivoted latches arranged on the disc between the arms and reversely disposed and having outer cam-ends for riding over the fingers, reversely beveled spring-pressed pawls arranged on the latches and extending through perforations in the disc and engaging the teeth, oppositely disposed cam-arms extending beyond the latches and adapted to depress the spring-fingers and provided with stops of motion-conveying devices between the shafts and gates for closing the gates, and means for liberating and returning the same, substantially as specified. 6th. The combination with the opposite pairs of standards, transverse shafts arranged therein, a pulley arranged upon each shaft, and a mast-arm carried by each shaft of the opposite transverse shafts 49, means for operating the same, pulleys 69 on the outer ends of the shafts 49, transverse shafts 31 arranged below the gates, pulleys arranged thereon, endless belts between the pulleys of the gate-standards and those of the shafts 31, a pulley 71 carried by one of the shafts 31, the operating cable 73 connecting the pulleys 69 and passed reversely around and connected to the pulley 71, pulleys 70 on the outer ends of the shafts 31, the cross belt 74 connecting said latter pulleys, and means for elevating the masts, substantially as specified. 7th. In a railway gate, the combination with the hollow standard, the transverse shaft, the pair of pulleys arranged on the shaft, a lower transverse shaft, a pulley thereon, an endless belt connecting the latter pulley with one of the upper pulleys, and means for operating said latter pulley, of a cable connected to the remaining upper pulley, a weight connected with the cable for operating the same, engaging devices between the two pulleys, a mast carried by the upper shaft, and a transverse yoke-bar carried by the weighted pulley and extending through opposite grooves in the standard and engaging the mast, substantially as specified. 8th. In a railway gate, the combination with the hollow standard, the transverse shaft, the pair of pulleys arranged on the shaft, a lower transverse shaft, a pulley thereon, an endless belt connecting the latter pulley with one of the upper pulleys, and means for operating said latter pulley, of a cable connected to the remaining upper pulley, a weight connected with the cable for operating the same, engaging devices between the two pulleys, a mast carried by the upper shaft, a transverse yoke-bar carried by the weighted pulley and extending through opposite grooves in the standard and engaging the mast, a pneumatic cylinder arranged at the side of the standard, a weighted plunger arranged therein, a vent at the lower end of the cylinder, and a connecting rod between one end of the yoke-bar and the plunger, substantially as specified. 9th. In a railway gate, the combination with the hollow standard, the transverse shaft, the mast mounted on the shaft, the large and small pulleys carried by the shaft, the transverse yoke-bar extending from the large pulley through curved slots in the standard and engaging the mast, a lower transverse shaft, a pulley carried thereby, an endless belt connecting the said pulley with the small pulley of the upper shaft, of a rear frame having guides, a cable connected to the large pulley and extending to the guides, a weight mounted for movement in the guides and connected to the cable and provided at its lower end with a catch, brackets extending from the guides, a horizontally pivoted latch spring-pressed in the path of the catch, a connecting rod between the lower pulley and the latch, means for operating the lower shaft, a pneumatic cylinder, a vent at the lower end thereof, a weighted piston arranged in the cylinder, a piston-rod projecting through the head of the cylinder, and a connecting-rod between the upper end of the piston-rod and the outer end of the yoke-bar, substantially as specified. 10th. In a railway gate, the combination with the standard, of a bifurcated mast pivoted thereon, and a spring-arm depending from and at the side of the standard and extending into the path of one of the branches of the mast, substantially as specified.

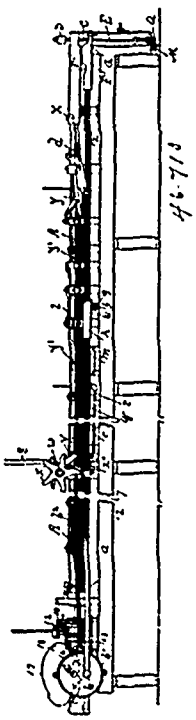
No. 46,710. Can Making Machine.

(*Machine à faire les boites métalliques.*)

Robert D. Hume, Gold Beach, Oregon, U.S.A., 2nd August, 1891; 6 years.

Claim.—1st. In a can making machine, a can body former, a horn about which the sheets are bent, a mechanism for feeding the sheets of tin to be delivered to the former, consisting of adherent lifters, a mechanism by which they are reciprocated so that the uppermost of a pile of sheets will be lifted from the others by each reciprocation, and a horizontally reciprocating carrier adapted to move beneath the lifted sheet, and receive and withdraw it when the carrier is retracted. 2nd. In a can making machine, a series of vertically moving adherent lifters adapted to lift the uppermost of a series of sheets, a horizontally reciprocating carrier, mechanism by which it is moved beneath the lifted sheet, said carrier having hooks or lugs which engage the edge of the sheet so as to withdraw it when the carrier is retracted, and a pawl or stop by which the sheet is engaged after it has been removed from the lifters to prevent its being returned when the carrier is again advanced. 3rd. The vertically moving lifters adapted to lift successively the uppermost of a series of sheets, a bar in which the shanks of said lifters are fixed, a vertically reciprocating-rod connected with the bar, and a horizontally reciprocating plate, the upper edge of which forms a cam movable beneath a pin or stud upon the vertical-rod, whereby the reciprocation of the cam first raises the lifters and the sheet, while the carrier passes beneath the lifted sheet, then drops the lifters and sheet, so that its edge may be engaged by the up-turned hooks of the carrier and the sheet removed from the lifters when the carrier is reciprocated. 4th. The vertically moving adherent lifters whereby the sheets are successively lifted from a series, and a carrier mechanism by which each lifted sheet is withdrawn from the lifters. 5th. The vertically moving adherent lifters whereby the sheets are successively lifted from a series, and a carrier mechanism by which each lifted sheet is withdrawn from the lifters, and means for raising the sheets so that the upper surface always maintains the same relative position with relation to the lifters. 6th. The adherent

vertically moving lifters adapted to raise the sheets successively from a pile of series, the mechanism whereby the surface of the pile is constantly maintained with relation to the lifters, consisting of a



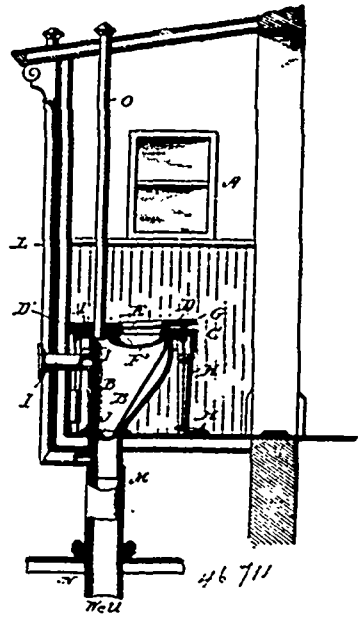
vertical screw engaging a nut by which the table carrying the sheet is raised, a pawl and ratchet mechanism and bevelled gears connected with the actuating-rod of the lifters whereby the screw is turned simultaneously with the movement of the lifters. 7th. A feeding mechanism for sheets of tin, consisting of a vertically moving table, adapted to receive the sheets, adherent lifters, vertically movable above the table and the sheets thereon, adapted to raise the uppermost sheet and deliver it to a horizontally reciprocating carrier, a vertical screw, rotating in a nut connected with the table, a lever and pawl and ratchet mechanism, actuated by connection with the vertically moving lifters, and bevel gears, by which said motion is transmitted, to rotate the screw at each movement of the lifters. 8th. A feeding mechanism for sheets or blanks, consisting of vertically reciprocating adherent lifters, adapted to seize and lift the uppermost of a pile of sheets or blanks from the table upon which they are supported, mechanism by which the table is gradually raised, to compensate for the removal of the sheets, consisting of a vertical screw, gears and pawl and ratchet, a half nut slidable in horizontal guides upon the table engaging the screw, a lever and a rod connecting with the nut, whereby the latter may be disengaged from the nut to allow the table to be moved. 9th. A feeding mechanism for sheets or blanks, consisting of vertically reciprocating adherent lifters, adapted to seize and lift the uppermost of a pile of sheets or blanks from a table upon which they are supported, mechanism whereby said lifters are reciprocated, and devices upon each side of the pile of sheets, adapted to arrest and detach any sheet below the uppermost one which may be lifted therewith. 10th. The vertically moving adherent lifters, by which the sheets are singly and successively raised from the pile of blanks, a horizontally reciprocating carrier, a mechanism whereby it is advanced beneath the lifted sheet, mechanism whereby the lifters and sheets are depressed, so that the latter is engaged by hooks upon the carrier, whereby it is removed from the lifters when the carrier is again retracted. 11th. The adherent vertically moving lifters, adapted to raise sheets or blanks, singly and successively, from a pile situated beneath the lifters, a horizontally reciprocating carrier and mechanism, whereby it is advanced beneath the lifted sheet, mechanism whereby the sheet is engaged by the carrier and removed from the lifters by the retraction of the carrier, and guides between which the sheet is moved, as the carrier retracts, whereby it is registered to enter the hook, forming mechanism as described. 12th. The reciprocating carrier, adapted to receive sheets or blanks singly, and withdraw them from the point where received, jawls or stops engaging the rear edges of the sheets, to prevent their return upon the return movement of the carrier, and mechanism and reciprocating carriers, whereby the sheets are advanced by intermittent movements from the point where they are received, to be submitted to the future forming operations, as described. 13th. In a can making machine, a horizontally reciprocating carrier, device for supplying sheets of tin singly thereto, mechanism whereby the carriers are intermittently reciprocated, mechanism for bending the edges of the sheets into hooks, a former forming a continuation in line with the carrier or table over which the sheet first moves, having its surface curving gradually into a convex form upon the upper side, with the curvature increasing until it merges into a cylindrical horn, carriers by which the sheet is advanced and bent around said form until the hook edges interlock beneath the cylindrical horn, and a mechanism consisting of a vertically reciprocating-hammer whereby the interlocked wedges are closed together beneath the horn. 14th. The former around which the sheets of metal are curved, mechanism by which they are intermittently advanced along the former, a cylindrical horn into which the former merges and about which the sheets are bent so that their hook edges are interlocked beneath the cylindrical horn, a vertically reciprocating-hammer adapted to close the interlocked edges and to form a seam, guide-bars extending along upon opposite sides of the seam and set respectively into the cylindrical horn and the reciprocating-hammer with springs whereby they are forced outwardly into position to receive and guide the seam, said springs yielding to allow the guides to be forced inwardly when the seam is closed by the reproaching hammer. 15th. A mechanism for closing the seam beneath the horn and projecting the closed seam upon the interior of the can body, consisting of a channel formed longitudinally in the lower side of the horn and in line with the seam, spring-actuated retractile guides between which the seam is retained in the line with the channel, a vertically reciprocating-hammer and mechanism whereby it is actuated to close the interlocked edges of the seam and force the seam thus closed into the channel in the horn. 16th. The seam closing mechanism consisting of the horn around which the sheet of metal is bent and the previously formed hooks upon its edges interlocked beneath the horn, a channel formed in the horn for the reception of the seam, retractile guides between which the opposite edges of the seam are retained, a vertically reciprocating-hammer adapted to close and compress the seam into the channel, mechanism whereby the hammer is actuated consisting of a cam or eccentric mounted upon a shaft beneath the hammer, a pinion fixed to the shaft, and a reciprocating rack engaging said pinion and rotating the shaft and cam to actuate the hammer. 17th. A seam closing mechanism consisting of the channeled horn, retractile guides and vertically reciprocating-hammer adapted to close and compress the seam, and an anvil or resisting-plate fixed above the upper side of the horn to counteract the pressure thereon. 18th. The cylindrical horn, about which the sheets of metal are curved, interlocked, and the seams closed, and a hollow continuation of said horn, having a slot in the lower side, a soldering iron suspended with its lower edge projecting through the slot, a gas jet pipe extending through the hollow iron, having jet burners with flame impinging upon the top of the iron, and perforations around the periphery of the tubular extension for the admission of air to support the combustion of the burners. 19th. The hollow cylindrical extension of the horn having a channel in the lower side, a soldering iron suspended therein, with its lower edge projecting through the channel and standing in line with the seam of the can which is carried upon the exterior of the extension, an interior gas jet tube, whereby the iron is heated, a solder carrier, having an open slotted ridge upon the top, through which the solder is exposed and upon which the iron rests when no can is passing between them, and a heating device therefor. 20th. In a can making machine, a soldering device, consisting of a soldering iron suspended in the cylindrical extension of the horn, about which the can bodies are formed, so that its lower edge projects through a slot in the bottom of said extension, and a solder carrier, having a slotted ridge upon its upper side, through which the melted solder is exposed and upon which the lower edge of the soldering iron rests when no can is passing, and mechanism, whereby the can bodies are advanced to pass between the two solder carrying surfaces, so that the solder is simultaneously applied to both inside and outside of the seam. 21st. In a can making machine, the hollow cylindrical extension of the horn, about which the can bodies are formed, a soldering iron suspended in the slotted lower side of said extension, projecting through the slot, means for heating said iron from the interior, a solder carrier yieldingly supported and heated from below, having a slotted ridge upon its upper side opposing the lower edge of the soldering iron and forming contact therewith when no can is passing, said iron and solder carrier yielding to be separated when the can body is passed between them, whereby solder is applied simultaneously to both sides of the seam. 22nd In a can making machine, the horn about which the body is formed and the seam closed upon the lower side, a device for applying acid to the seam after it has been closed, consisting of a chamber supported upon springs and adapted to contain acid, said chamber having a slot in the upper side in line with the seam, and an absorbent material fixed in said slot with its lower side dipping in the acid and the upper side projecting to form contact with the opposing seam. 23rd In a can forming machine, a horn about which the can is formed, a spring supported acid tank with absorbent material projecting through a slot in the upper side, in the line of travel of the passing seam whereby the acid is applied to the seam of the can, and a slot or channel made in the lower part of the horn opposed to the acid tank to prevent the acid from acting upon the horn when no cans are passing. 24th. The solder carrier consisting of the closed chamber having an upwardly projecting slotted ridge through which the solder is exposed, and a means for heating the carrier, and melting the solder therein, an open chamber or extension at one side of the closed carrier, and a mechanism

whereby solder is supplied thereto to keep a constant level within the slotted opening. 25th. A solder carrier having the open extension or chamber connected therewith, and a heater beneath, a means for supplying solder to said open chamber consisting of a feeder through which a bar of solder is delivered, a reciprocating cutter, and mechanism for actuating said cutter at intervals so as to supply pieces of solder to the open chamber. 26th. A solder carrier and an open chamber connected therewith, a feed chute through which solder is delivered and a reciprocating cutter adapted to sever the solder and deliver it into the open chamber, mechanism whereby the cutter is actuated, consisting of a revolving cam or eccentric and shaft, arms projecting from said shaft and a reciprocating bar with a lug or protection adapted to engage the arms and partially rotate the shaft at each reciprocation. 27th. In a can making machine, mechanism for supplying the sheets or blanks to be formed into can bodies, a reciprocating carrier for receiving said sheets singly and successively, mechanism for actuating the feeder and carrier, consisting of a horizontally reciprocating bar connected therewith at one end, and with the crank or eccentric upon the main driving shaft, reciprocating carriers whereby the sheets and cans are intermittently advanced along the horn, and an eccentric or crank with connecting rod whereby said carriers are actuated independently of the feed and supply carrier. 28th. In a can making machine, the hollow cylindrical extension of the horn about which the can bodies are formed, and mechanism by which the outside and inside of the seams are soldered simultaneously, in combination with wipers adapted to wipe the surplus solder from both the inside and outside of the seam. 29th. In a can making machine, the hollow cylindrical extension of the horn about which the can bodies are formed, mechanism by which the outside and inside of the seams are soldered simultaneously, wipers consisting of fibrous cloth or fabric, and clamping plates between which the fabric is secured above and below the seam, whereby the latter passes between the wipers after having been soldered. 30th. The clamping plates having vertical slots made through them adapted to receive fibrous wipers, adjusting screws by which the plates are moved over each other to clamp the wipers, and set screws passing through slots in one of the plates which allow of the adjustment, whereby the plates are locked together after the wipers have been secured between them. 31st. The solder wipers for the exterior of the seam, consisting of plates having vertical slots through which the fibrous wiping material is inserted, screws by which the plates are adjusted upon each other to clamp the material, and set screws for holding the plates together, said plates having openings made through them in line with the seam, whereby any surplus solder falls through the plates and away from the can. 32nd. In a can making machine, the mechanism for applying the heads to the ends of the cans and crimping the heads thereon, consisting of the cylindrical extension of the horn over which the can bodies are moved, interior conical segments by which the can body is expanded, a carrier adapted to receive can heads and reciprocate in line with the can body whereby the head is applied to the can body, and a movable plunger whereby the cans are expanded and the head crimped upon the can end after application, in combination with a locking latch, whereby the plunger and carrier are rigidly connected together until after the head has been applied to the can, and a means for disengaging the latch to allow the further advance of the plunger after the head has been applied for the purpose of crimping it upon the can end. 33rd. A continuous can making apparatus consisting of an automatically operating feeder, a former and a cylindrical horn into which it merges, over which the sheet is successively and intermittently moved to form interlocking hooks, and close and lock them to form a side seamed cylinder, soldering irons and wipers between which the seam is passed, a continuation of the horn, over which the can passes, without change of form, and a mechanism whereby the head is applied and crimped thereon.

No. 46,711. Combined Air Trap and Valve for Water Closets. (*Porte d'aérage et soupape pour latrines.*)

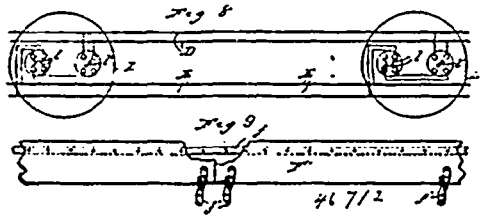
Charles Kelley, Toronto, Ontario, Canada, 2nd August, 1894; 6 years.

Claim.—1st. The combination, with a hinged closet seat of two independent traps and lever connections interposed between the hinged seat and the traps whereby the traps will be simultaneously opened by the depression of the seat, substantially as described. 2nd. In combination, the movable or hinged closet seat, two hinged traps beneath the seat, lever connections interposed between the traps and seat for automatically opening the traps simultaneously upon depressing the seat, an air inlet, the valve controlling said inlet and connections between said valve and the trap actuating mechanism whereby the valve will be automatically operated simultaneously with the movement of the traps upon the depression of the seat, substantially as described. 3rd. In combination, a hinged seat, two crank shafts, traps secured to the said shafts, lever connections between the crank-shafts and between the seat and the upper shaft, an air inlet, the valve controlling said inlet and connections between one of the crank shafts and the seat whereby the traps and valve will be simultaneously operated by the depression of the seat. 4th. The herein described water closet, consisting of the bowl, the pipe leading from the bowl to the well, an outlet or ventilating pipe leading from a point below the bowl, a ventilating pipe leading from the bowl, an air inlet to the bowl, a valve for said inlet, the traps, the seat and connections whereby the said valve and traps may be simultaneously operated automatically by the de-



pression of the seat, substantially as described. 5th. In combination with the shaft F journalled beneath the water closet seat, the pulley K keyed to the shaft, and the chain K^1 passing around the pulley, and carrying a weight K^2, whereby a reverse rotation is given to the shaft F, after the latter has been rotated for opening the closet valves, substantially as shown and described. 6th. In combination with the seat and valves as described, the bowl B, the ventilating pipes O and I, the latter adapted to be closed when the seat valve is open, and the ventilating pipe L leading from the well-pipe M, all substantially as and for the purpose set forth.

No. 46,712. Under-Ground Conduit System for Electric Railways. (*Système de conduit souterrain pour chemins de fer électriques.*)

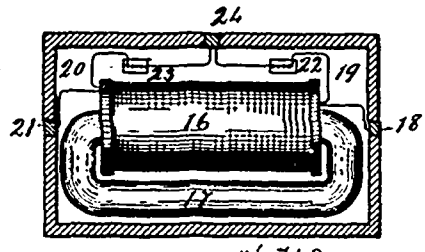


Herluf A. F. Peterson, Milwaukee, Wisconsin, U.S.A., 2nd August, 1894; 6 years.

Claim.—1st. An under ground conduit for electric railways comprising a longitudinal casing provided with two longitudinal compartments or passages, one of which contains the conductors and the other of which is provided in its upper wall with a longitudinal slot for the admission of a contact carrier, and communicating at intervals with a sewer, a longitudinal slot in the division wall between said compartments or passages and a movable closing device for normally closing said slot. 2nd. An under ground conduit for electric railways comprising a casing divided into two longitudinal compartments or passages, one of which is arranged to contain the conductors, a longitudinal opening or slot in the division wall between said compartments, a movable device for normally closing said opening or slot, a slot in the upper wall of the casing, communicating with the other one of the compartments and arranged out of line with the opening in said partition, and suitable connections between the bottom of said compartments and the sewer. 3rd. An under ground conduit for electric railways, comprising a suitable casing divided into a plurality of longitudinal compartments or passages one of which is provided in its upper wall with a slot, and the other passage or passages arranged to contain the conductors and separated from the first mentioned compartment by longitudinal partitions provided with longitudinal slots, movable devices for normally closing said slots, suitable man holes arranged at intervals along the line of the conduit and communicating with the compartment or compartments containing the conductors, and other connections leading from the lower part of the other compartment and

arranged to discharge into the sewer. 4th. In an under ground conduit for electric railways comprising a casing divided into two or more longitudinal compartments, one provided in its upper wall with a slot and the other compartment or compartments arranged to contain the conductors, and separated from the first mentioned compartment by longitudinally slotted partitions movable devices for normally closing said longitudinal slots and a drip flange or flanges extending downwardly at one or both sides of the slot in the upper wall of the said compartment. 5th. A conduit for under ground electric railway conductors comprising a suitable casing divided into a plurality of longitudinal compartments or passage-ways, longitudinal feeders or line conductors located within one of said compartments, other conducting rails, strips or wires made in sections insulated from each other, and independently connected with said feeders, and the other compartment provided in its upper wall with a longitudinal slot for the admission of a contact carrier and in its lower wall with a plurality of connections leading to a sewer and arranged to carry off dirt or moisture from the interior of said compartment. 6th. A conduit for underground electric railway conductors, comprising a suitable casing, divided into a plurality of longitudinal compartments, longitudinal feeders or line conductors located within one of said compartments, conducting rails, strips or wires made in sections, insulated from each other and independently connected with said feeders, suitable switches for throwing said insulated sections into or out of circuit, a movable device for normally closing the compartment in which said conductors are located, and the other compartment being provided in its upper wall with a longitudinal slot for the admission of a contact carrier, and its lower wall with suitable connections leading to a sewer. 7th. A conduit for underground railway conductors, comprising a suitable casing divided into longitudinal compartments, longitudinal feeders within one of said compartments, contact rails, strips or wires, made in sections, insulated from each other and independently connected with said feeders, suitable switches for throwing said insulated sections into or out of circuit, fusible connections between said insulated sections and said feeders, a movable device for normally closing the compartment containing the conductors and connections leading from the bottom of the other compartment and arranged to discharge into a sewer. 8th. The combination, with an underground conduit divided into longitudinal compartments, separated from each other by a division wall, having a longitudinal opening therein, and provided with a movable closing device for normally closing said opening, and a longitudinal slot in the upper wall of the other compartment, arranged out of line with said opening, of a contact carrier arm adapted to be supported upon the car, and arranged to extend downwardly through said latter slot, and laterally through said longitudinal opening into the compartment containing the conductors, and carrying suitable contact devices electrically connected with opposite poles of the motor, and adapted for independent engagement with said conductors. 9th. The combination, with an underground conduit of the construction described, of a contact carrier arm, adapted to extend downwardly through the slot in the main casing, and laterally into the compartment containing the conductors, and carrying contact devices, electrically connected with opposite poles of the motor and adapted for independent engagement with said conductors, and a drip collar or flange located upon said arm. 10th. The combination, with a conduit for underground electric conductors, divided into longitudinal compartments or passages, one arranged to contain the conductors, and the other provided in its upper wall with a longitudinal slot, and its lower wall with connections leading to a sewer, a movable device for normally closing the compartment containing the conductors, and suitable means for creating a circulation of dry or heated air throughout said compartment. 11th. An underground conduit for electric railway conductors comprising a suitable casing divided into a plurality of longitudinal passages or compartments, one of which is arranged to communicate at intervals with a sewer, and provided in its upper walls with a longitudinal slot, and another of said passages being arranged to contain the conductors, and provided with a longitudinal opening, a suitable device movably engaged with the sides of said opening and adapted to normally close the same, suitable means arranged to discharge into the passage containing the conductors and adapted to produce a circulation of air therein, and suitable means for automatically controlling the operation of said blower mechanism. 12th An underground conduit for electric railway conductors, comprising a suitable casing divided into a plurality of longitudinal passages or compartments one of which is arranged to communicate at intervals with a sewer, and provided in its upper wall with a longitudinal slot and another of said passages being arranged to contain the conductors and provided with a longitudinal opening, a suitable device arranged to normally close said opening, blower mechanism arranged to discharge into the passage containing the conductors, an electric motor for actuating said blower, a switch for controlling the motor and a suitable device sensitive to moisture and adapted to operate the switch to stop or start the motor automatically. 13th. An underground conduit for electric railway conductors, comprising a suitable casing divided into a plurality of longitudinal passages or compartments one of which is arranged to communicate at intervals with a sewer, and provided in its upper wall with a longitudinal slot, one or more of said passages being arranged to contain the conductors and provided with a longitudinal opening, a suitable device arranged to normally close said opening, blower mechanism arranged to discharge into the passage containing the conductors, and comprising an electric motor and a fan actuated thereby, a switch for controlling the motor, a suitable device connected with said switch and with a device sensitive to moisture, whereby the switch is adjusted to start the motor when the air in the conduit becomes moist, or to cut out the motor when the air becomes dry. 14th. The combination, with an underground conduit for electric wires of a ventilating apparatus comprising a blower, arranged to discharge into the conduit, a motor for actuating the blower, a switch for controlling the motor, means for normally holding the switch in position to cut out the motor, and adapted to be relaxed by moisture in the air, so as to adjust the switch to start the motor, 15th. The combination with an underground conduit for electric wires of a ventilating apparatus comprising a blower arranged to discharge into the conduit, a motor for actuating said blower, a switch for controlling the motor, electro-magnets for throwing the switch in opposite directions, and a device sensitive to moisture and adapted to complete an electric circuit through one or the other of said magnets, so as to adjust the switch to start or stop the motor. 16th. The combination with an underground conduit for electric conductors of a contact carrier-arm movably connected with a car truck and suitable means connected with said arm for permitting lateral movement of the arm in either direction or up and down movement of said arm. 17th. The combination with a universally movable contact carrier-arm of a pair of contact devices, supported at the end of said arm, and suitable means for enabling said contact devices to move vertically with respect to said arm. 18th. The combination with universally movable contact carrier-arm of contact devices supported upon the lower end of said arm and independently removable therefrom. 19th. The combination with an underground conduit for electric conductors provided with a slot in its upper wall, and a contact carrier-arm arranged to extend through said slot and provided with contact devices adapted to embrace the conductors, a movable section at one side of the conduit carrying movable sections of the conductor and adapted to be thrown back, so as to permit the removal of the contact carrier, and the contact devices thereon. 20th. The combination with an underground conduit for electric conductors provided with a movable section at one side carrying movable sections of said conductors and adapted to be thrown back to permit of the removal of the contact carrier from the conduit, movable arms carrying concave conductor sections and adapted for engagement by an arm on said movable section of the conduit, and to be moved thereby into position for engagement with contact devices carried by the arm. 21st. The combination with the track rails and an underground conduit containing electric conductors, of lever mechanism having operative engagement with a switch tongue in said track and with movable sections of the conductors, electro-magnets for moving said levers in either direction, contacts within the conduit electrically connected with said magnets, contact devices carried by an arm upon a car truck, and adapted to be electrically connected with the conductors by means of a switch upon the car whereby either one of said magnets may be energized, so as to adjust the rail-switch and the movable sections of the conductors to desired positions. 22nd. The combination with an underground conduit divided into two compartments, one of which is arranged to contain the conductors, and the other arranged to communicate at intervals with a sewer, of a contact carrier-arm supported upon a car truck and adapted for engagement with the conductors, and one or more suitable brushes, brooms or scrapers supported upon said arm or the truck and adapted for engagement with the lower part of the latter compartment, and adapted to carry any accumulation of dirt or moisture to the sewer connections therein.

No. 46,713. Multiplex Telephone. (*Téléphone Multiple.*)



46 713

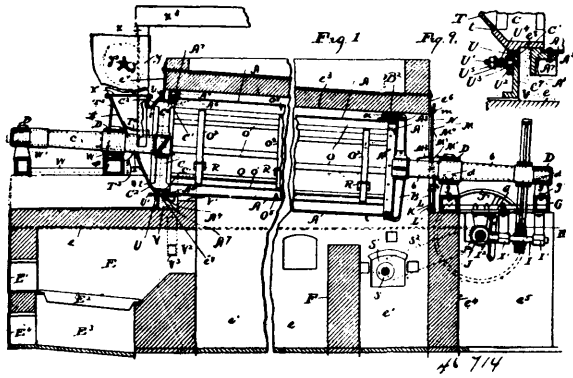
The Bell Telephone Company of Canada, Montreal, Quebec, assignee of Abner M. Rosebrugh, Toronto, Ontario, all in Canada, 2nd August, 1894; 6 years.

Claim. 1st. In a multiple telephone system, a metallic telephone circuit combined at one or more points on the same, with a doubly wound electro magnet, the two wires forming the two coils of said electro-magnet, wound together in the same helical direction, having approximately the same resistance, connected in series and forming a bridge between the two branches of said metallic circuit; the inside terminal of one of the coils of said electro-magnet being joined to the outside terminal of the other of said coils, the neutral point of said coils or the point of junction of said terminals being joined to a wire which is used for completing an artificial circuit,

and the two branches of said metallic circuit being connected to the free terminals of said electro-magnet. 2nd. In a multiplex telephone system, a metallic telephone circuit combined at one or more points on the same, with a doubly wound electro-magnet, the two wires forming the two coils of said electro-magnet wound together in the same helical direction, having approximately the same resistance, connected in series and forming a bridge between the two branches of said metallic circuit; the inside terminal of one of the coils of said electro-magnet being joined to the outside terminal of the other of said coils, the neutral point of said coils or the point of junction of said terminals being joined to a wire which is used for completing an artificial circuit, and the two branches of said metallic circuit being connected to the free terminals of said electro-magnet, and said electro-magnet having a soft iron core, and the two poles of said core joined so as to form a closed magnetic circuit. 3rd. In a multiplex telephone system, a metallic circuit combined at one or more points of the same, with a doubly wound electro-magnet, the two coils of said electro-magnet connected in series, and said coils forming a bridge between the two branches of said metallic circuit, an artificial circuit wire attached to the point of junction of said coils, and adjustable artificial resistance inserted in said bridge and in one or in both sides of said junction of said artificial circuit wire, substantially as described. 4th. In a multiplex telephone system, two parallel metallic circuits, and each of said metallic circuits combined at one or more points of the same with a doubly wound electro-magnet, the two coils of said electro-magnet connected in series, a wire connected with the neutral point or point of junction of said coils, and said wire extending to some form of telephonic apparatus, as and for the purpose set forth. 5th. In a multiplex telephone system, two parallel metallic circuits combined at one or more points of each of said metallic circuits, with a doubly wound electro-magnet, the two coils of said electro-magnet connected in series, said coils forming a bridge between the two branches of said metallic circuit, and a wire extending from the neutral point of each of the two doubly wound electro-magnets at one point of said parallel metallic circuits, and said wires extending to, and connected up, with the same telephonic apparatus, whereby an artificial metallic circuit may be formed by means of said parallel metallic circuit. 6th. In a multiplex telephone system, each end of each of two parallel metallic circuits, combined with a doubly wound electro-magnet, the two coils of said doubly wound electro-magnet connected in series, said coils forming a bridge between the two branches of said metallic circuit, and a wire extending from a neutral point of the two coils of said electro-magnet to some form of telephonic apparatus common to both of said parallel metallic circuits, whereby said telephonic apparatus shall be included in an artificial metallic circuit.

No. 46,714. Mechanical Drier, Etc.

(*Séchoir mécanique, etc.*)



Franklin D. Cummer, Cleveland, Ohio, U.S.A., 2nd August, 1894; 6 years.

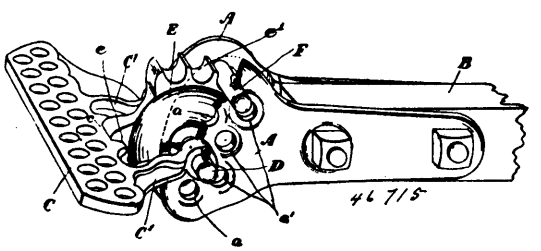
Claim.—1st. The process herein described of drying or heating materials, consisting in passing the material to be treated and products of combustion through a rotating cylinder in opposite directions respectively, and stirring the material or causing the same to be sprayed or scattered across or tossed within the cylinder in its passage through the cylinder, and in maintaining a forced draft through the fire and cylinder along the path of the heating-agent, substantially as and for the purpose set forth. 2nd. A mechanical drier comprising a rotating cylinder, a fire-chamber located at the forward end of and below the cylinder, and a passage-way for conducting the products of combustion or heating-agent from the fire-chamber to the rear end of the cylinder, and thence into the cylinder, suitable means for delivering the material to be treated into the front end of the cylinder and suitable devices inside of the cylinder for stirring the material in its passage through the cylinder, the heating-agent and material to be treated passing in opposite directions, respectively, through the cylinder, and the material being discharged at the rear end of the cylinder, substantially as set forth. 3rd. In a mechanical drier, comprising a rotating-cylinder, declining rearwardly from the feeding end of the cylinder, a fire-chamber located at the forward end of and below the cylinder, a passage-way for conducting the products of combustion or heating-agent from the fire-chamber rearwardly below the cylinder and discharging the same into the rear end of the cylinder, suitable means for conducting the material to be treated and delivering the same into the front or feeding-end of the cylinder, suitable means for establishing a forced draft along the aforesaid heating-agent conducting passage-ways, and through the cylinder in the direction of the passage of the heating-agent, and suitable devices inside of the cylinder for spraying, tossing or scattering the material in its passage through the cylinder, the heating-agent and material to be treated passing through the cylinder in opposite directions, respectively, and the material being discharged at the rear end of the cylinder, substantially as set forth. 4th. A mechanical drier comprising an open ended cylinder, and two rimmed and trunnioned spiders located at opposite ends of the cylinder, respectively, and supporting the cylinder, the trunnions of the spiders being suitably supported, the one spider being operatively connected with the cylinder, and suitable means or mechanism for driving the trunnion of said spider, a fire-chamber located at the front or feeding-end of and below the cylinder and suitable passage-ways for conducting the products of combustion or heating-agent from said chamber rear-wardly underneath the cylinder and into the rear end of the cylinder, and suitable means for conducting the material to be treated into the front or feeding-end of the cylinder, the cylinder being provided internally with suitable device for stirring the material in its passage through the cylinder, and the heating-agent and material to be treated passing through the cylinder in opposite directions, respectively, substantially as set forth. 5th. In a mechanical drier, a metallic cylinder, rimmed and trunnioned spiders supporting said cylinder, the trunnions of said spiders being suitably supported, a driving-shaft operatively connected with the trunnion of one spider, sockets, jaws or projecting members suitably secured to the cylinder adjacent to said last mentioned spider, and the latter having arms adapted to engage said sockets, jaws or projecting members on the cylinder and cause the latter to be rotated with the spider, a fire-chamber located at the forward end of and below the cylinder, passage-ways for conducting the products of combustion or heating-agent from the fire-chamber rearwardly below the cylinder and into the rear end of the cylinder and suitable means for conducting the material to be treated into the forward end of the cylinder, the latter being provided internally with suitable devices for stirring the material in its passage through the cylinder, and the heating-agent and material to be treated passing through the cylinder in opposite directions, respectively, substantially as set forth. 6th. In a mechanical drier, a rotating cylinder, two rimmed and trunnioned spiders carrying opposite ends of the cylinder, respectively, the trunnions being suitably supported, suitable means or mechanism for driving the one spider and suitable means for establishing operative connection between the cylinder and said spider, the cylinder being reinforced at one end by a metallic ring, the reinforcing ring at the rear end of the cylinder engaging the inner side of the rim of the adjacent or rear spider, and the reinforcing ring at the forward end of the cylinder engaging the outer side of the front spider, a fire-chamber located at the forward end of and below the cylinder, suitable passage-ways for conducting the products of combustion or heating-agent from said chamber and discharging the same into the rear end of the cylinder, suitable means for conducting the material to be treated into the forward end of the cylinder, and suitable devices inside the cylinder for facilating the passage of the material through the cylinder, the heating agent and material to be treated passing through the cylinder in opposite directions, respectively, substantially as set forth. 7th. In a mechanical drier, a rotating cylinder, two rimmed and trunnioned spiders carrying opposite ends of the cylinder, respectively, the trunnions of said spiders being comparatively long and supported each by two journal-boxes located a suitable distance apart with the journal-boxes of each trunnion supported by uprights or standards rigid with one and the same supporting-frame, suitable means or mechanism for driving the one spider and suitable means for establishing operative connection between the cylinder and said spider, a fire-chamber located at the forward end of and below the cylinder, suitable passage-ways for conducting the products of combustion or heating-agent from said chamber and discharging the same into the rear end of the cylinder, suitable mean for conducting the material to be treated into the forward end of the cylinder, and suitable devices inside the cylinder for facilitating the passage of the material through the cylinder, the heating-agent and material to be treated passing through the cylinder in opposite directions, respectively, substantially as set forth. 8th. In a mechanical drier, the combination with a rotating cylinder through which the heating-agent and material to be treated pass in opposite directions, respectively, of suitable means for rotating said cylinder and suitable means for sustaining the end-thrust of the cylinder, substantially as set forth. 9th. In a mechanical drier, the rotating cylinder, two rimmed and trunnioned spiders carrying opposite ends of the cylinder, respectively, the trunnions being suitably supported, the cylinder being reinforced at each end by a metallic ring, the rear reinforcing ring being flanged outwardly at its outer end and the rear spider being mounted upon said flange, the front reinforcing ring being flanged inwardly, at its outer end with the flange

resting upon and embracing the front spider, one of said spiders being operatively connected with the cylinder, and suitable means or mechanism operatively connected with the trunnion of said driving-spider for operating the latter, substantially as set forth. 10th. In a mechanical drier, a rotating cylinder suitably supported at one end, rimmed and trunnioned spider supporting the free end of the cylinder, suitable means operatively connected with the trunnion of said spider for driving the latter one or more metallic plates *a*, secured to the cylinder adjacent to said spider, said plate or plates having a laterally and outwardly U-shaped flange a^2, the inner side whereof is engaged by an an inwardly-projecting arm on the spider, said flanged plate or plates on the cylinder and projecting arm or arms of the spider establishing operative connection between the spider and cylinder and limiting the movement of the cylinder in the direction of the spider, substantially as set forth. 11th. In a mechanical drier, a rotating cylinder declining rearwardly substantially as indicated, the material to be treated and products of combustion passing through the cylinder in opposite directions, respectively, the cylinder being suitably supported at its rear end, and supported at its forward end by a rimmed spider, suitable means for feeding the material to be treated to said spider, and the arms of the spider being set obliquely to the axis of the spider somewhat like the blades of a propeller-wheel, so as to properly feed the material received thereby into the cylinder, substantially as set forth. 12th. In a mechanical drier, a rotating cylinder suitably enclosed at the sides and top, a fire-chamber located at the front end of and below the cylinder, passage-ways for conducting the products of combustion or heating-agent from said chamber rearwardly into the rear end of the cylinder and suitable means for delivering the material to be treated into the forward end of the cylinder, the heating-agent and products of combustion passing through the cylinder in opposite directions, respectively, an enclosed space at the rear of and in open relation with said cylinder, through which space the material is discharged from the cylinder, a conveyor located below said space and adapted to receive the material discharged from the cylinder and convey the same to one side of the drier, and a bridge-wall located below the cylinder forward of said conveyor, substantially as set forth. 13th. In a mechanical drier, the rotating cylinder through which the material to be treated and the heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material to be treated in its passage through the cylinder, and the cylinder being suitably supported at its forward end, a rimmed spider supporting the rear end of the cylinder and journalled in boxes suitably supported from a single frame G, driving shaft J also suitably supported from said frame, shaft I intergeared with the driving-shaft and also supported from said frame and suitably intergeared with the trunnion of the aforesaid spider, substantially as set forth. 14th. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably enclosed space being provided at the rear end of the cylinder, which space is in open relation with the cylinder and through which space the material is discharged from the cylinder, an air-chamber forming the lower portion of the rear wall of said space, the front and rear walls of said chamber being perforated, substantially as shown, for the purpose specified. 15th. In a mechanical drier, the rotating cylinder through which the material to be treated and products of combustion or heating-agent pass in opposite directions, respectively the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder, the cylinder being suitably supported from trunnions, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, and the rear supporting trunnion extending through said wall, that portion of the wall below the trunnion being partially formed by an air-chamber whose front and rear walls are perforated, substantially as indicated, a shelf at the top of said air-chamber upon which shelf a portion of the material discharged from the cylinder may lodge and form an insulation to prevent the escape of heat between the rear trunnion and said chamber, said shelf being located a sufficient distance below that trunnion to prevent material from piling upon said shelf to such an extent as to come in contact with the under side of the trunnion, substantially as set forth. 16th. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder, and being suitably enclosed and supported, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, said wall being partially composed of a plate M removable for repairs, observations or other purposes, substantially as set forth. 17th. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder and being suitably enclosed, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, the lower portion of said wall being formed by plates K and L, plate K having flanges K^2, K^3, K^4, and plate L fitting between flanges K^3 and K^4, said plates being perforated, as at *k* and *l*, respectively, and the upper portion of the aforesaid wall being formed by a metallic plate M resting upon flange K^2, said plate being mounted upon studs *m* rigid with the enclosure of the cylinder, the holes in plate M through which said holes extend being elongated vertically, a half-ring M mounted upon studs *m* against plate M and resting upon the flange K^4 of plate K, and nuts m^1, mounted upon the aforesaid studs against the outer side of half-ring N, all substantially as shown, for the purpose specified. 18th. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, being reversible end for end, substantially as set forth. 19th. In a mechanical drier, a rotating cylinder supported by rimmed spiders, the trunnions of the respective spiders having journal-bearings so far separated as to support the spiders independent of the cylinder, substantially as and for the purpose set forth. 20th. In a mechanical drier, the combination with the rotating cylinder, of a series of metallic lifting blades arranged lengthwise internally of the cylinder, and adapted to engage the inner side of the cylinder, substantially as and for the purpose set forth. 21st. In a mechanical drier, a rotating cylinder containing a series of metallic lifting blades arranged lengthwise thereof, adjacent lifting-blades being connected in groups by means of segmental straps, and suitable means for holding said blades out against the interior surface of the cylinder, substantially as and for the purpose set forth. 22nd. In a mechanical drier, the combination with the rotating cylinder, of lifting-blades arranged lengthwise of and adapted to engage the cylinder internally, and having one or more notches or gores, substantially as and for the purpose set forth. 23rd. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting-blades O, arranged lengthwise of and adapted to engage the internal surface, of the cylinder, said lifting-blades having inwardly-presenting heads O^1, the lifting-blades being divided into groups and the blades of each group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, and suitable means for retaining said straps in position holding the lifting-blades out against the interior surface of the cylinder, substantially as set forth. 24th. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting-blades O, arranged lengthwise of and adapted to engage the internal side of the cylinder, said lifting-blades having inwardly-presenting heads O^1, the lifting-blades being divided into groups, and the blades of each group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, the segmental straps of one group of lifters being arranged immediately adjacent the segmental straps of the other group of lifters, the adjacent pair of straps of the two groups of lifters, respectively, being bent inwardly at one end, a screw-threaded rod extending through said inwardly-bent members of the straps and nuts mounted upon said rod at opposite ends of said members of the straps, respectively, and the other ends of said straps being suitably connected with the cylinder, substantially as set forth. 25th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting blades O, arranged lengthwise of and adapted to engage the interior surface of the cylinder, said lifting-blades having inwardly-presenting heads O^1, the lifting-blades being divided into groups, and the blades of the group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, the lifting-blades of each group of lifters being connected by segmental straps and the segmental straps of one group of lifters being located immediately adjacent the segmental straps of the other group of lifters adjacent straps of the two series of straps, respectively, being suitably connected with each other at one end and the other ends of said straps being bent outwardly, a pipe-section or tube extending through said outwardly bent members of the straps and a bolt extending through said pipe-section or tube, the head of the bolt engaging the one end of the pipe or tube, the latter extending also through a T-iron or member rigid with and projecting inwardly from the shell of the cylinder, the hole in said T-iron or inwardly-projecting member of the cylinder being elongated in the direction of the length of the cylinder, substantially as and for the purpose set forth. 26th. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of metallic lifting-blades arranged at suitable intervals lengthwise of the inner side of the cylinder, suitable means for holding said blades in position within the cylinder, and the blades being notched or gored at suitable intervals lengthwise thereof, substantially as and for the purpose set forth. 27th. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, rimmed and trunnioned spiders supporting opposite ends of the cylinder, a conveyor located under the rear end of the cylinder and adapted to receive the material discharged from the cylinder, a driving-shaft operatively connected with said conveyor and with the trunnion of the rear spider, all arranged substantially as shown and for the purpose set forth. 28th. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the rear end of the cylinder being suitably supported and the front

end of the cylinder being supported by a rimmed and trunnioned spider that is lipped or flanged inwardly, as at C^2, a breeching T fitted into said lip, as at *t*, a feed-pipe discharging into said breeching, and the latter being adapted to deliver the material to the aforesaid rimmed spider that has its arms arranged obliquely somewhat like the blades of a propeller-wheel to properly feed the material into the cylinder, the cylinder being suitably enclosed at the top and sides, a metallic plate e^7 secured to the front end of said enclosure and around the aforesaid spider, the arrangement of parts being such that a space e^8 is had between said plate and spider, a metallic ring U enclosing said space, the latter being held yieldingly in place by friction, substantially as set forth. 29th. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably supported at its rear end and supported by a rimmed and trunnioned spider at its forward end, the cylinder resting upon and embracing said spider, a pocket V, for catching any material that may escape from the cylinder between the lower side of the aforesaid spider and the shell of the cylinder, and a discharge or drain-pipe V^2, leading from said pockets to one side of the drying apparatus, substantially as set forth. 30th. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably supported at its rear end and supported by a rimmed and trunnioned spider at its forward end, the cylinder resting upon and embracing said spider, a pocket V, for catching any material that may escape from the cylinder between the lower side of the aforesaid spider and the shell of the cylinder, and a discharge or drain-pipe V^2, leading from said pocket to one side of the drying apparatus, and blade A^7, rigid with the cylinder and adapted to scoop the material from said pocket into the drain-pipe, substantially as set forth. 31st. In a mechanical drier, a rotating cylinder through which the material and heating-agent pass in opposite directions, respectively, the rear or discharging-end of the cylinder being suitably supported, and the forward or feeding end of the cylinder being supported by a rimmed and trunnioned spider, lipped or flanged inwardly, as at C^2, a breeching T, fitted into said lip or flange, a pipe or passage-way for discharging the material into said breeching, the latter being adapted to deliver the material to the aforesaid spider, whose arms are arranged obliquely, somewhat like the blade of a propeller-wheel, the forward side of said breeching having an opening to accommodate the location and operation of the trunnion of said spider, and a hood T^2, secured to said wall of the breeching over the trunnion, substantially as and for the purpose set forth. 32nd. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably enclosed and supported at its forward end, and supported at its rear end by a rimmed and trunnioned spider, a suitably-constructed wall closing the space at the rear of said spider, the trunnion of the spider extending through said wall and a hood M^3, secured to the inner side of said wall over the trunnion, substantially as and for the purpose set forth. 33rd. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the rear end of the cylinder being suitably supported and the front end of the cylinder being supported by a rimmed and trunnioned spider, a breeching at the front end of the cylinder, and a feed-pipe discharging into said breeching, the breeching being adapted to deliver the material to the spider, whose arms are arranged obliquely, not unlike the blades of a propeller-wheel, the trunnion of said spider extending through the breeching, having bearing in suitable boxes that are supported by a single metallic frame, substantially as and for the purpose set forth. 34th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and products of combustion pass in opposite directions, respectively, of a lower breeching, suitably supported at the front end of the cylinder and in open relation with the cylinder, an upper breeching X, secured to the lower breeching, a feed-pipe or passage-way, extending downwardly at the inner side of said breechings and discharging into the lower breeching, substantially as set forth. 35th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and products of combustion pass in opposite directions, respectively, of a lower breeching, suitably supported at the front end of the cylinder and in open relation with the cylinder, an upper breeching X, secured to the lower breeching, and a feed-pipe or passage-way extending downwardly at the inner side of said breechings and discharging into the lower breeching, the portion of said pipe that extends into the lower breeching being open at its inner side, substantially as set forth. 36th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the lower breeching T, located at the forward end of, and in open relation with, the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching, a dust-collecting chamber X^5, and a short duct X^4, establishing open relation between said chamber and the upper breeching, a stack X^6, for said chamber, and a fan or suitable device for establishing a forced draft through and from the cylinder through the breechings to the aforesaid stack, substantially as fet forth. 37th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of a lower breeching T, located at the forward end of, and in open relation with, the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching, a dust-collecting chamber X^5, a short duct X^4, establishing open relation between said chamber and the upper breeching, a stack X^6, for said chamber, and a fan or suitable device for establishing a forced draft through and from the cylinder, through the breechings to the aforesaid stack, and a hood for precipitating more or less dust or fine material from the dust-laden vapours in the passage to the aforesaid stack, substantially as set forth. 38th. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, a lower-breeching T located at the forward end of and in open relation with the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching, a dust collecting-chamber X^5, a short duct X^4, establishing open relation between said chamber and the upper breeching, and a stack X^6 for said chamber, of a fan or suitable device for establishing a forced draft through and from the cylinder, through the breechings to the aforesaid stack, said fan or draft-creating-device being located at the inner end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching, the portion of said shaft extending through the breeching being suitably jacketed, substantially as and for the purpose set forth. 39th. In a mechanical drier, the combination with a rotating-cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, a lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching opening into the lower breeching, a feed-pipe or passage-way extending from the upper breeching into the lower breeching, a dust-collecting-chamber X^5, a short duct X^4 establishing open relation between said chamber and the upper breeching, and a stack X^6 for said chamber, of a fan or suitable device for establishing a forced draft through and from the cylinder, through breechings to the aforesaid stack, the fan or draft-creating-device being located at the inner end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching, the portion of said shaft extending through the breeching being suitably jacketed, the jacket being open from end to end and opening into the atmosphere outside, substantially as and for the purpose set forth. 40th. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, a lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching X, in open relation with the lower breeching, a feed-pipe or passage-way extending from the upper breeching into the lower breeching, and a short duct X^4 leading from the upper breeching, of a fan for establishing a forced draft through and from the cylinder, through the breechings, and aforesaid duct, the fan being located at the receiving-end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching and has bearing at opposite ends of the hub of the fan, one or more oil-cups Z^1, suitably supported at the outer side of the casing in which the fan is located, said oil-cup or cups being located within a hot-air-chamber Z^2, formed substantially as indicated, and passage-ways leading from said cups to the aforesaid bearings, substantially as set forth. 41st. In a mechanical drier, a suitably constructed rotating cylinder through which the material and products of combustion pass in opposite directions, respectively, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, said wall being provided with one or more openings closed by one or more doors or dampers, substantially as and for the purpose set forth.

No. 46,715. Jaws and Clevis for Plows.

(*Volée et mâchoires de charrue.*)



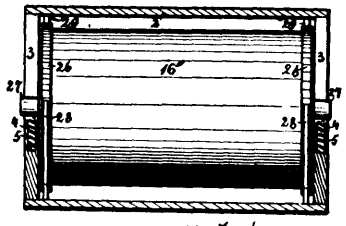
The Verity Plow Company, assignee of Robert H. Verity, all of Brantford, Ontario, Canada, 2nd August, 1894 ; 6 years.

Claim.—1st. The combination with the jaws, of a clevis pivoted in one of the sets of holes in the jaws and having secured to it a quadrant and means whereby the quadrant is rigidly held in different positions, so as to vary the angle of the clevis, as and for the purpose specified. 2nd. The combination with the jaws, of a clevis C, pivoted on the pin D, the quadrant E, rigidly held to the clevis, also pivoted upon the pin D, and provided with notches e^1, and

the pin F, designed to be inserted through one of the sets of holes *aa*, and one of the notches e^1, in the quadrant E, as and for the purpose specified. 3rd. The combination with the jaws A, of a clevis C, pivoted on the pin D, the quadrant E, connected to the clevis by means of the notch *c*, fitting over the tooth *c*, and pivoted upon the pin D, and provided with notches e^1, and the pin F, designed to be inserted through one of the sets of holes *aa*, and one of the notches e^1, in the quandrant E, as and for the purpose specified.

No. 46,716. Egg Case. (*Boîte à œufs.*)

Fig. 4

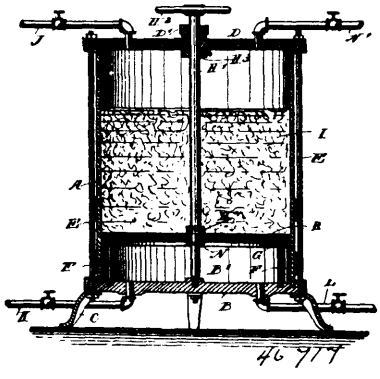


46 716

Joseph H. Bowley, Marengo, Illinois, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. A packing case comprising an inner case or receptacle having end trunnions supported in bearings, in an extension frame or case, and removable therein, substantially as and for the purpose described. 2nd. A packing case comprising a skeleton or open revolvable inner case, and a closed outer case provided with bearings to receive the inner case, substantially as described. 3rd. A packing case comprising an inner revolvable case having end trunnions thereon, an outer case having end slots to receive said trunnions, and a removable cover upon the outer case, substantially as described. 4th. A packing case comprising an inner case having end trunnions thereon, an outer case having end slots and spring-supported bearings to fit said slot and receive the trunnions of the inner case, substantially as described. 5th. In a packing case, the combination of an outer casing and an inner casing, trunnions on the inner casings, slots in the outer casing for receiving the trunnions, a recess in each of the slots, a spring in each recess, a plunger for the spring, and bearings on the plungers for the trunnions, substantially as described. 6th. A shipping case consisting of an inner case, the inner case supported upon spring bearings and capable of a movement upon its pivotal support, means forming a connection between the cases in order that an intermittent movement may be imparted to the inner case by the jolting of the train in transportation. 7th. A shipping case composed of an inner and outer case, the inner case supported upon spring bearings and capable of a rotary movement and provided with a toothed circle, and yielding dogs or pawls engaging said teeth upon opposite sides. 8th. A shipping case consisting of an inner and outer case, the inner case supported upon spring bearings and capable of a rotary movement and provided with a ratchet toothed wheel or circle, and yielding dogs or pawls engaging the teeth on opposite sides, substantially as described. 9th. A shipping case comprising four separable quadrant shaped sections formed of open work supported upon cylinder heads, each having a trunnion to revolve in bearings in an outer case, substantially as described. 10th. A shipping case comprising four separable quadrant shaped sections forming a cylindrical revolvable case, each section formed of sheet metal open work, and having quadrant shaped cover secured thereon and a handle on said cover, substantially as described. 11th. A shipping case comprising four separable quadrant shaped sections forming a cylindrical revolvable case, each section formed of sheet metal open work and a series of quadrant shaped wire covered boxes having bales secured thereto, substantially as described. 12th. A packing case comprising a series of revolvable compartments supported upon an outer frame or case and geared together to revolve concurrently, substantially as described. 13th. A packing case comprising a series of revolvable compartments having trunnions supported in bearings in an outer frame, each compartment having a toothed wheel secured upon one of its trunnions, and a shaft carrying a series of worms or a screw thread to engage with the gear of the wheels, substantially as described. 14th. A packing case comprising a double series of revolvable compartments, each having trunnions supported in a frame and each having a toothed disc or gear, and a shaft having a screw thread to engage with the opposite gear of each series, substantially as described. 15th. In a device for rotating egg containing cases, the combination of a suitable frame supporting a series of cases, each having a shaft and a semi-circular bearing at one end thereof, shafts provided with squared or angular sockets at the other end thereof, a series of trunnions which fit the sockets and bearings, a vertical shaft having a connection with the series of trunnions and a horizontal line shaft imparting motion to the vertical shaft. 16th. A packing case comprising a shell of sheet metal perforated in longitudinal sections, a fixed bottom supporting springs, and a movable top having projections to engage with the sectional division strips. 17th. A packing case formed of a sheet metal shell, peforated in longitudinal sections, each section provided with door openings, a door for each opening having a hinged connection with the case and a fastening device therefor, substantially as described. 18th. A packing case formed of an open work shell and a central lighting tube, substantially as described. 19th. A packing case comprising sections of open work, each having a door opening, a hinge door for each opening a fastening device therefor, a fixed bottom supporting springs, a central lighting tube and projecting end trunnions, a cover secured to the open end of the case, substantially as described. 20th. An egg case of rectangular form of perforated sheet metal having each side provided with openings, a door for each opening hinged to the case, a fastening device therefor, a fixed bottom supporting springs, a central transparent tube, and a cover adjustable in the lengthwise direction of the case and hooks supported by the cover engaging the case, substantially as described. 21st. In a shipping case, the combination of a case proper having a perforated bottom, transverse guide-ways, a removable bottom fitting in said guide-ways and an extension compartment interchangable with the removable bottom, substantially as described. 22nd. A shipping case comprising a case proper having a perforated bottom and a removable tank having a removable cover fitted to the case proper beneath said perforated bottom, substantially as described. 23rd. A shipping case comprising a case proper having transverse guide-ways, and a removable tank having a removable cover and fitted in said guide-ways, substantially as described. 24th. A shipping case comprising a case proper and an extension tank forming a cover thereof removable therefrom and having a screw threaded cap upon said tank, substantially as described. 25th. In a shipping case, the combination of a case proper having a perforated bottom and transverse guide-ways, an extension fitted to the guide-ways and a removable tank located in the extension having a removable cover.

No. 46,717. Filter. (*Filtre.*)

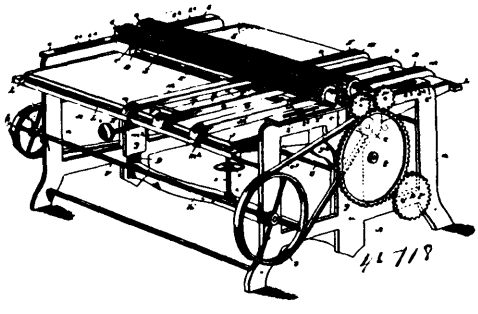


46 717

Frederick Bommarius, New Orleans, Louisiana, U.S.A., 3rd August, 1894; 6 years.

Claim.—A filter, comprising a casing provided with inlets and outlets, a shaft journalled in bearings at the top and bottom of the casing, and provided with a collar and a screw-threaded portion, a screen adapted to removably fit on the shaft, a jam nut adapted to engage the threaded portion of the shaft to press the screen against the collar, so as to compel the screen to rotate with the shaft, and a stationary ring held in the casing a suitable distance above the bottom, to form a seat on which the marginal portion of the screen is adapted to slide during its rotation, substantially as described.

No. 46,718. Box Making Machine.
(*Machine à faire des boîtes.*)



46 718

Calvin B. Southard, St. Albans, Maine, U.S.A., 3rd August, 1894; 6 years.

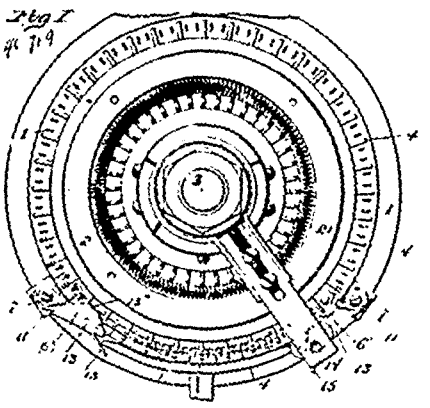
Claim.—1st. In an edging or box making machine, the frame, a

vertically adjustable table mounted within the frame and having a transverse saw-slot at the top, a transverse saw arbor arranged in the saw-slot of the table and carrying a gang of saws, a feed-slide mounted on top of the table, means for adjusting the position of the feed slide transversely on the vertically adjustable table and feed rolls removably and adjustably mounted on the frame above the table and feed slide, substantially as set forth. 2nd. In an edging or box making machine, the combination of the table or bed having a central transverse saw-slot, the saw arbor or shaft arranged in the slot of the table or bed and carrying a gang of saws, parallel rest bars arranged longitudinally on the table or bed, and having intermediate saw openings or slots through which the saw project a feed slide mounted to move longitudinally on the table between the rest bars and saws, and parallel feed rolls adjustably arranged above the restbar and feed slide at an intermediate point of the rest bars, substantially as set forth. 3rd. In an edging or box making machine, the frame or stand, a vertically adjustable table or bed mounted within the frame or stand, a horizontal saw arbor or shaft mounted on the frame or stand at a point intermediate of the front and rear edges of the table or bed, separated pairs of edging and grooving saws mounted for longitudinal adjustment on said arbor or shaft, the separate saws of each pair being arranged slightly spaced from each other, longitudinal rest bars adapted to be arranged in alignment with the pairs of saws, and a feed slide arranged to work on the table between the separated pairs of saws and rest bars, substantially as set forth. 4th. In an edging or box making machine, the combination of a vertically adjustable table having a central transverse saw-slot, a saw shaft or arbor arranged to rotate in the slot of the table and carrying a gang of saws, parallel rest bars mounted for lateral adjustment on the table and having saw-slots or openings through which the saws project, a laterally adjustable feed slide mounted on the table between the rest bars, and parallel feed rolls adjustably arranged above the rest bars and feed slide, substantially as set forth. 5th. In an edging or box making machine, the frame or stand having opposite inner vertical guide grooves and a bottom bearing bar, a vertically adjustable table or bed having depending guide arms provided with upper forked ends dividing the table or bed into separate front and rear portions, projected guide ribs engaging the inner vertical guide grooves of the frame or stand and a transverse frame bar, a vertical adjusting screw stepped in said bottom bearing bar and engaging said transverse frame bar, a transversely arranged saw arbor carrying a gang of saws turning in the space between the front and rear portions of the table or bed, and adjustable feed devices arranged on the table or bed, substantially as set forth. 6th. In an edging or box making machine, the frame, a vertically adjustable table frame having a central transverse saw-slot and opposite grooved side edges at the front and rear side of said slot, adjustable table boards adapted to slide in the grooved side edges of the table frame, means for adjusting the table boards to and away from the centre of the machine, a transverse saw arbor arranged in said saw slot and carrying a gang of saws, and the feeding devices removably and adjustably arranged on top of the table boards, substantially as set forth. 7th. In an edging or box making machine, the combination with the machine frame or stand having opposite top bearing notches, a central transverse saw arbor mounted in said top bearing notches and carrying saws, the table or bed mounted within the machine frame or stand and having slotted adjustment strips at the front and rear edges thereof, parallel latterly adjustable rest bars mounted on the table or bed and having shouldered bolt ends adjustably engaging said slotted strips, and intermediate saw slots or openings through which the saws project, a latterly adjustable guide strip arranged on the table or bed and having shouldered bolt ends engaging the front and rear adjustment strips between the rest bars, a spring returned feed slide mounted on said guide strip, opposite pairs of bearing boxes removably and adjustably mounted at each side of the frame bearing notches, and parallel feed rolls journalled in said bearing boxes and geared with the saw arbor, substantially as set forth. 8th. In an edging or box making machine, the combination with the machine frame or stand, of a central transverse saw arbor carrying separated pairs of edging and grooving saws, the table or bed, parallel rest bars mounted on said table or bed and having longitudinal top recesses, and saw slots or openings, normally-projecting lifting springs seated in the top recesses of said rest bars, a slotted guide strip arranged adjustably between the rest bars, a guide rod arranged longitudinally in said guide strip, a feed slide mounted on said guide strip and having a rest head at one end and a bottom guide block engaging said guide rod, a spring arranged in said guide strip and attached to said feed slide, and the adjustable corrugated feed rolls mounted on the machine frame above said rest bars, and geared with the saw arbor, substantially as set forth. 9th. In an edging or box making machine, the combination with the table or bed and the saws, of parallel rest bars arranged on the table or bed, a feed slide mounted on the table or bed and arranged to move between the rest bars, feed rolls arranged horizontally above the rest bars, means for lifting the stock from the feed slide and above the rest bars after leaving the rear feed roll, and means for automatically returning the feed slide to the front of the table or bed after the stock is lifted therefrom, substantially as set forth.

No. 46,719. Machine for Making Looped Fabric.
(*Machine pour faire les tissus.*)

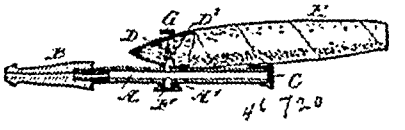
Edward Murby, St. Louis, Missouri, U.S.A., 3rd Aug., 1894; 6 years.

Claim.—1st. In a machine for making looped fabric, the combination of a needle cylinder, a dial or plate fitting within the needle cylinder, stationary points carried by the dial-plate, and a finger for moving the loops off of the points, substantially as set forth. 2nd. In a machine for making looped fabric, the combination of a needle cylinder, a dial-plate fitting within the needle cylinder, stationary



points carried by the dial-plate, and means for moving the points out of working position, and a finger for moving the loops off of the points, substantially as set forth. 3rd. In a machine for making looped fabric, the combination of a needle cylinder, a dial-plate located within the needle cylinder, points carried by the dial-plate, fingers for moving the loops from the points, and means for moving the fingers out of working position, substantially as set forth. 4th. 4th. In a machine for making looped fabric, the combination of a needle cylinder, a dial-plate located within the needle cylinder, points carried by the dial-plate, fingers for moving the loops from the points, springs for holding the fingers in their working position, and means for moving the fingers out of working position, substantially as set forth. 5th. In a machine for making looped fabric, the combination of a needle cylinder, a dial-plate located within the needle cylinder, points carried by the dial plate, fingers for moving the loops from the points, springs acting to hold the fingers in their working position, plates mounted on shafts and having out-turned ends 10, stops 11 secured to the shafts and means for moving said plates and fingers, substantially as set forth. 6th. In a machine for making looped fabric, the combination of a needle cylinder, a dial-plate located within the needle cylinder, points carried by the dial-plate, fingers for moving the loops from the points, springs acting to hold the fingers in their working positions, plates connected to the fingers, and stops for limiting the inward movement of the fingers, said plates having flat surfaces 13', substantially as and for the the purpose set forth.

No. 46,720. Cigar-Holder. (*Porte-cigare.*)



Frederick D. Van Wickel, Corona, New York, U.S.A., 3rd August, 1894; 6 years.

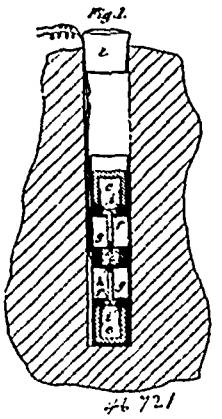
Claim.—1st. A cigar-holder, comprising a drawing tube having a mouth piece, a hollow point or pin on the said tube and provided with a slot, and a supporting band on the said tube and adapted to encircle the cigar at the said point or pin, the said supporting band having a fixed and a hinged member adapted to be locked together at their free ends, substantially as shown and described. 2nd. A cigar-holder, comprising a drawing tube having a mouth piece, a hollow point or pin on the said tube and provided with a slot, a supporting band on the said tube and adapted to encircle the cigar at the said point or pin, the said supporting band having a fixed and a hinged member adapted to be locked together at their free ends, and an apertured offset in the bottom of said drawing tube and opposite the said point or pin, substantially as shown and described. 3rd. A cigar-holder, comprising a drawing tube having a mouth-piece, a hollow point or pin on the said tube and provided with a slot, a supporting band on the said tube and adapted to encircle the cigar at the said point or pin, the said supporting band having a fixed and a hinged member adapted to be locked together at their free ends, an apertured offset in the bottom of the said drawing tube and opposite the said point or pin, and a cap for closing the said apertured offset, substantially as shown and described. 4th. A cigar-holder, comprising a drawing tube having a mouth-piece, a hollow point or pin on the said tube and adapted to encircle the cigar at the said point or pin, the said supporting band having a fixed and a hinged member adapted to be locked together at their free ends, and a second supporting band made semi-circular and

arranged on the forward end of the said drawing tube and in alignment with the first named band, substantially as shown and described.

No. 46,721. Rock Blasting.

(*Procédé d'explosion pour faire sauter des roches.*)

Fig 1.

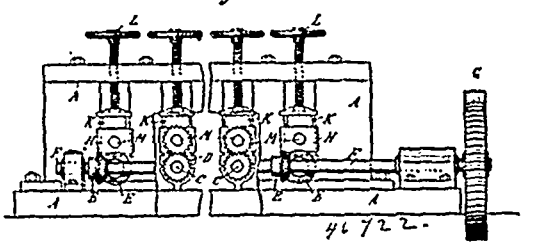


Abraham W. Schwarz, Leipsic, Plagwits, Saxony, Germany, 3rd August, 1894; 6 years.

Claim.—1st. The hereinbefore described method of blasting by the explosive combination of chlorine, bromine, or iodine with nitrogen or a source of nitrogen constructed and arranged, substantially as hereinbefore described. 2nd. Apparatus for blasting by the explosive combination of chlorine, bromine, or iodine with nitrogen or a source of nitrogen, constructed and arranged substantially as hereinbefore described.

No. 46,722. Method of Manufacturing Fibres from Wood. (*Fabrication de fibres du bois.*)

Fig 1.

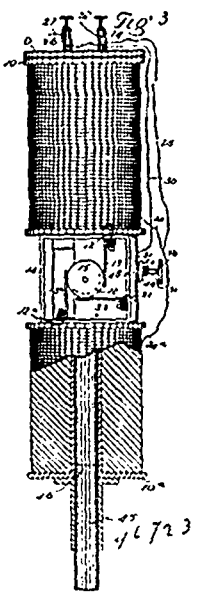


Alexander Mitscherlich, Friburg, Grand Duchy of Baden, Germany, 3rd August, 1894; 6 years.

Claim.—1st. The manufacture of fibres capable of being spun and of by products of the same from thin layers of wood or woody parts of plants by separating the fibres in the same by means of bendings frequently effected in short distances from each other and by loosening the fibres by pulling off or respectively and by prick-devices, and utilization of the waste by hardening same by means of impregnating and drying them. 2nd. The soaking of the wood by means of a diluted solution of sulphurous acid at ordinary temperature, by which means without any perceptible chemical alteration an easy disintegration of the wood will be obtained. 3rd. The bendings produced in a dry condition or in a condition impregnated with liquid *a*, by means of small press devices arranged perpendicular to the fibres of small rods placed close to each other side by side, which rods may be continuous, for instance in the form of ribs applied to rollers or plates or of rods applied as such to rollers or plates or of rods arranged side by side in layers one above the other having wood inserted between them, which rods or the wood layers inserted between them receive advantageously a pressure in the direction of the fibre, the said rods working either alone or with each other essentially in such a manner, that the projection of a rod on one side is opposite to the intermediate space between two projections on the other side, or, respectively and by means of pressure effects in the direction of the fibre in laterally fastening the wood layers in small divisions, which fastenings do not permit the wood to give way laterally on the fastened places but allow of a compression in the direction of the fibres, so that small bendings of the wood layers are produced, which pressure effects are very advantageously combined with lateral to-and-fro-motions of the one fastening device, while the following one remains stationary, by which operations the wood is gradually more and more undulatorily bent or cracked but not broken. 4th. The simultaneous manufacture of a woody mass only little disintegrated and of fibres capable of being spun from coniferous trees by loosening the lateral adhesion of the fibres by bending same only to such an extent, that the clearer wood parts difficult to be disintegrated of the annular rings are but little disintegrated, while the darker parts are entirely disintegrated. 5th. The method of preventing on the surface of the small wood boards, fractures easily produced in effecting the bending, when coniferous trees are employed, by placing one or more small wood boards one above the other in putting the projecting darker parts of the annular rings towards the outside. 6th. The pulling off of the fibres from the surface of the more or less disintegrated wood by means of tools having on the working places either sharp or blunt but rough edges by leading under pressure the said tools essentially in the direction of the fibres over the wood. 7th. The working of the fibrous masses or of the wood worked entirely or only partially by the small bendings in a somewhat wet condition by means of cards, if desired, in moistening with oil and similar substances for manufacturing finer textile fibres. 8th. The product obtained by the described process characterized by long fibres S, provided with ramifications consisting of short and very thin cells arranged side by side and showing when seen through the microscope the wood cells in their original condition. 9th. The conversion of the wood transformed by the bendings or only of the woody residues of the same, or of other chemically or mechanically softened or not softened woody parts of plants, in particular of wood waste, into a pulverulent mass by impregnating the said substances with liquids capable of being converted into brittle bodies, say with saturated solutions of sulphate of soda, common salt and the like and by subjecting this impregnated wood after it has become brittle, i.e., in the above cited example after it has been dried, which impregnation and drying may according to circumstances, be frequently repeated, to a mechanical reducing process, such as grinding, stamping, crushing and the like. 10th. For bending the fibres a rolling machinery consisting of a housing A with sets of rollers C M having longitudinal ribs D rounded off, which latter may be continuous and the lower roller of which is actuated by a common shaft F carrying conical wheels E, while the upper roller is pressed downward by a very elastic material K. 11th. For pulling off the fibres a machinery consisting of a carriage *c* with knives *e*, under which moves a plate *h* furnished with cards *j* and carrying the wood to be treated and respectively or a machine consisting of rollers seizing and slowly advancing the wood and of rollers having sharpened ribs and revolving in opposite direction and pulling off the fibres from the wood advancing slowly between them.

No. 46,723. Electrical Tool. (*Outil électrique.*)

Fig 3

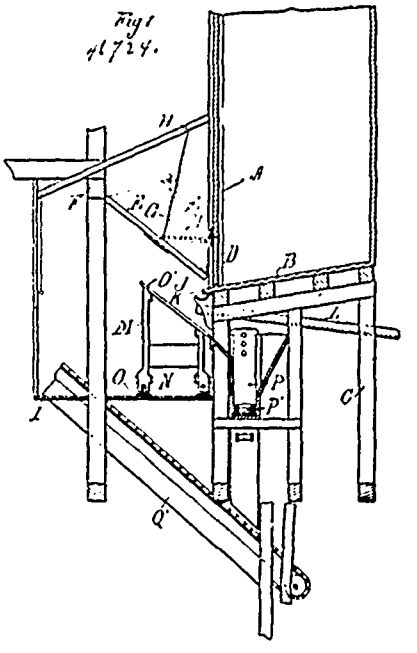


William P. Carstarphen, jr., Denver, Colorado, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. In an electrical tool, the combination with two hollow coils, of a movable bar supported therein, a circuit and a commutator located between the coils and consisting of a box or frame connecting the two coils and provided with a bottom located just above the movable bar, and a top covering the working parts, a movable plate supported upon said bottom and provided with depending arms projecting through slots formed in the bottom of the box and into the path of the bar which is provided with a shoulder adapted to alternately engage said arms as the bar reciprocates, a cylindrical circuit breaker pivoted in the frame or bottom of the box and provided with a wrist or projection located to

one side of its centre and engaging a slot formed in the movable plate, a single contact plate secured to said circuit breaker and partially surrounding the same, the upper extremity of the circuit breaker being pivoted in the top plate of the box, and three brushes, one constantly in engagement with the contact plate, and the other two alternately in contact therewith, the brushes and the coils being arranged and connected in the circuit, substantially as described, and for the purpose set forth. 2nd. In an electrical tool, the combination of two hollow coils, a movable bar supported therein, a circuit, a commutator located between the coils and consisting of a box or frame connecting the coils and provided with a bottom located just above the movable bar and a top covering the working parts, a movable plate supported on said bottom and provided with depending arms projecting through slots formed therein and into the path of the bar which is provided with a shoulder adapted to alternately engage said arms as the bar reciprocates, a cylindrical circuit breaker consisting of a block of insulating material having an exposed metallic contact plate partially surrounding the same, said circuit breaker being pivoted in the bottom of the frame and provided with a wrist or projection located to one side of its centre and engaging a slot formed in the movable plate, the upper extremity of the circuit breaker being pivoted in the top plate of the box, and three metallic brushes, one continually in direct engagement with the contact plate of the circuit breaker and the other two alternately in direct contact therewith, the brushes and coils being arranged and connected in the circuit substantially as shown and described, whereby as the movable bar reciprocates a partial rotation in reverse directions is imparted to the circuit breaker, substantially as described. 3rd. The combination, with two hollow coils enclosed by a suitable metallic shell or case, said coils being wound in a plural number of distinct sections by the use of a continuous wire, a movable bar supported in said coils, a circuit and automatic switch mechanism connected with the coils and lying within the circuit, and a movable sping plate suitably supported upon the tool and located within the shell or case, said plate having one extremity continually in electrical contact with one pole of the source of electricity, metallic contacts lying in the same plane and equal to the number of sections of each coil, these contacts being insulated from each other and each connected with a single corresponding section of both coils by a continuous conductor, said contacts forming a series of corrugations which the spring plate is fashioned to engage, and means connected with the movable spring plate and protruding through a slot formed in the enclosing case whereby said plate may be shifted at will from the outside of the shell independently of the movement of the reciprocating bar according as it is desired that the current shall pass through one or more of the coil sections, substantially as specified. 4th. In an electrical reciprocating tool, the combination with two hollow energizing coils, of a movable bar supported in said coils, a circuit, switch mechanism located between the coils and projecting into the path of the movable bar which acts directly thereon, said switch mechanism consisting of a circuit breaker composed of a solid cylindrical block of insulating material and a single exposed metallic contact plate partially surrounding said block, and three metallic brushes, two of the brushes being respectively connected with the coils and alternately in engagement with the contact plate of the circuit breaker, the third brush being connected with one pole of the electrical source and constantly in engagement with the contact plate of the circuit breaker whereby the current is alternately passed through the coils and a reciprocating movement imparted to the bar, substantially as described. 5th. In an electrical tool, the combination with two hollow energizing coils, of a movable iron bar supported therein, a circuit in which the coils lie, a commutator located between the coils which are suitably separated therefor, said commutator consisting of a cylindrical circuit breaker composed of a solid block of insulating material partially surrounded by a single exposed metallic contact plate, and three metallic brushes, two of the brushes being respectively connected with the coils and alternately in direct engagement with the contact plate of the circuit breaker, the third brush being connected with one pole of the electrical source and constantly in direct engagement with the contact plate of the circuit breaker, a sliding plate connected with the circuit breaker and having arms projecting into the path of the movable bar, said bar being provided with a ring or shoulder adapted to engage these arms and actuate the circuit breaker, whereby the current is alternately passed through the coils and a reciprocating movement imparted to to the bar, substantially as described. 6th. In an electrical reciprocating tool, the combination with two hollow energizing coils, of a movable iron bar supported therein, a circuit in which the coils lie, a switch mechanism located between the coils which are suitably separated therefor, said mechanism consisting of a circuit breaker composed of a cylindrical insulating block, surrounded by a metallic contact plate, and three metallic brushes, two of the the brushes being respectively connected with the coils and alternately in direct engagement with the contact plate of the circuit breaker, the third brush being connected with one pole of the electrical source and constantly in direct engagement with the contact plate of the circuit breaker, a sliding plate connected with the circuit breaker and having arms projecting into the path of the movable bar, said bar being provided with a shoulder centrally located thereon and adapted to engage these arms and actuate the circuit breaker, giving the same a partial rotation in reverse directions, whereby the current is alternately passed through the coils and a reciprocating movement imparted thereto, substantially as described.

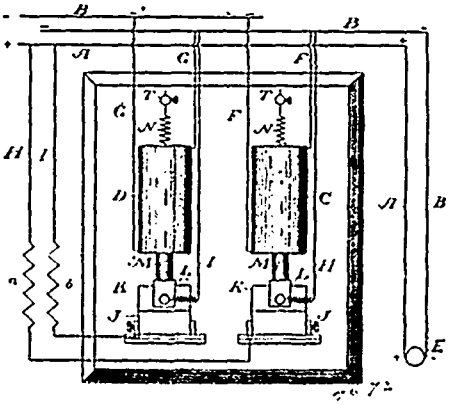
No. 46,724. Salt Bin. (*Coffre à sel.*)



Thomas Craney, Bay City, Michigan, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. The combination of a salt bin having an inclined bottom, a door at the end of the bottom in the front, a jointed brace extending from the door to a beam and a raising device connecting to the brace near the joint, substantially as described. 2nd. The combination of a series of adjacent salt bins, having a discharging door at the front, a truck having an inclined top arranged to run across the front of the bins, and hoppers beneath the bins in line with the top of the truck, substantially as described. 3rd. The combination of a series of bins, inclined bottoms therefor, doors at the front, drains beneath the lower edge of the bottoms, a wheeled truck having an inclined top arranged to run in front of the bins beneath the doors, hoppers beneath the bins in line with the top of the truck, and a conveyor, substantially as described.

No. 46,725. Automatic Electric Speed Regulator for Dynamos. (*Régulateur électrique de vitesse pour dynamos.*)

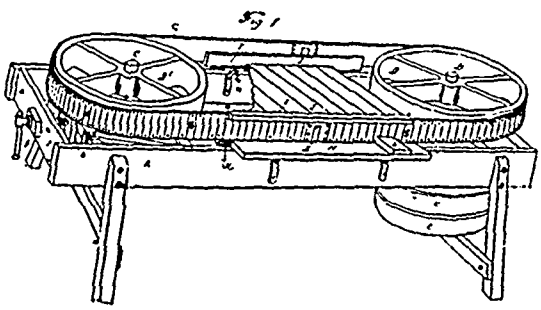


Henry D. Symmes, St. Catharines, Ontario, Canada, 3rd August, 1894; 6 years.

Claim.—1st. In an automatic electric speed regulator for dynamos, a solenoid arranged in the main circuit in combination with a resistance circuit connecting the positive and negative wires of the main circuit and having a contact therein, the solenoid being arranged to break the contact when a current of more than a predetermined number of amperes passes through the main circuit, substantially as and for the purpose specified. 2nd. In an automatic electric speed regulator for dynamos, two or more solenoids arranged in series as regards the main circuit, and in multiple arc as regards one another, in combination with two or more resistance circuits

connecting the positive and negative wires of the main circuit, each having a contact therein and each solenoid being arranged to break its corresponding resistance circuit when a current of more than a predetermined number of amperes passes through the main circuit, substantially as and for the purpose specified. 3rd. In an automatic electric speed regulator for dynamos, two or more solenoids arranged in series as regards the main circuit, and in multiple arc as regards one another, in combination with two or more resistance circuits connecting the positive and negative wires of the main circuit, each having a contact therein, the solenoids being arranged to cut out their corresponding resistance circuits at successive increases in the amperage of a current passing through the main circuit, substantially as and for the purpose specified. 4th. In an automatic electric speed regulator for dynamos, two or more solenoids each arranged to divert a proportionate amount of the current passing through the main circuit in combination with two or more resistance circuits connecting the positive and negative wires of the main circuit and each having a contact therein, each solenoid being arranged to cut out its corresponding resistance circuit at successive increases in the amperage of a current passing through the main circuit, substantially as and for the purpose specified. 5th. In an automatic electric speed regulator for dynamos, two or more solenoids through which all the current of the main circuit passes, in combination with two or more resistance circuits connecting the positive and negative wires of the main circuit and each having a contact therein, the solenoids being arranged to cut out their corresponding resistance circuits at successive increases in the amperage of the current passing through the main circuit, substantially as and for the purpose specified. 6th. In an automatic electric speed regulator for dynamos, a resistance circuit having a contact therein, in combination with a solenoid having a plunger connected at one end of the contact pieces and at the other end to an adjustable tension spring, substantially as and for the purpose specified. 7th. In an automatic electric speed regulator for dynamos, comprising the following elements: two or more solenoids such as C and D, arranged in series as regards a main circuit, and in multiple arc as regards one another, two or more resistance circuits such as H and I, connecting the positive and negative wires of the main circuit, contacts J, upper contact pieces K, plungers M, and adjustable tension springs N, substantially as and for the purpose specified.

No. 46,726. Splint Cutter. (*Coupe-éclats.*)



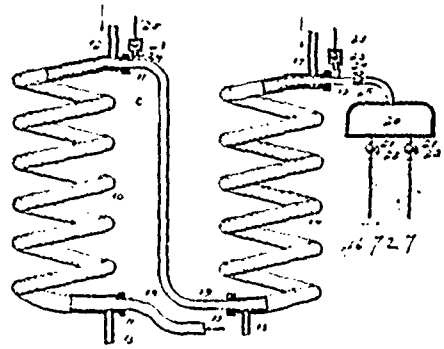
Frederic S. Baumeister, Rockwood, Michigan, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. In a splint-cutting machine, the combination of a frame-work, fixed and adjustable pulleys, a flexible belt running on said pulleys, armour plates *g*, secured in close proximity to each other along the outside thereof, knife holding frames secured thereto at intervals, and having their outer faces in line with the outer line of the armour-plates, and their inner faces flush with the inner surface of the belt, substantially as and for the purpose specified. 2nd. In a splint-cutting machine, the combination of a frame-work, a fixed pulley and an adjustable pulley, a flexible belt, armour-plates *g*, secured in close proximity to each other, knife-holding frames secured at intervals thereto, having their outer faces in line with the outer line of the armour-plates, and their inner faces flush with the inner surface of the belt, and a back support along the straight line of travel of said belt, substantially as and for the purpose described. 3rd. In a splint-cutting machine, the combination of a frame work, fixed and adjustable pulleys, a flexible belt, armour-plates secured in close proximity to each other, knife holding frames secured at intervals, having their outer faces in line with the outer line of the armour-plates and their inner faces with the inner surfaces of the belt, a back support, and upper and lower guide-ways along the straight line of travel of said belt, substantially as and for the purpose described.

No. 46,727. Apparatus for Pasteurizing and Racking-off Beer. (*Appareil pour nourrir et soutirer la bière.*)

Adelbert O. Muller and Andreas Giesen, both of Fremont, Nebraska, U.S.A., 3rd August, 1894; 6 years.

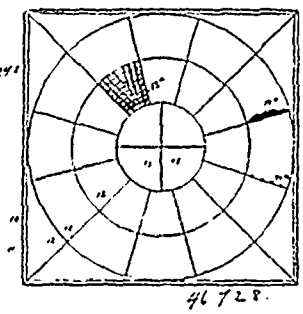
Claim.—1st. In a pasteurizing and racking-off apparatus, a gradually reduced pipe through which the liquid is adapted to flow, to cause the liquid to travel with a gradually increasing velocity toward the delivery end and keep back the froth, and means for heating



and cooling, respectively, successive portions of the said liquid-conveying pipe, substantially as described. 2nd. In a pasteurizing and racking-off apparatus, the combination, with a gradually reduced pipe, through which the liquid is adapted to flow, of a plurality of independent pipes surrounding successive portions of the said liquid conveying pipe, said surrounding pipes being adapted to contain a heating and a cooling agent, respectively, substantially as set forth. 3rd. In a pasteurizing and racking-off apparatus, the combination, with a gradually reduced pipe through which the liquid is adapted to flow, of a plurality of independent coiled pipes through which the said liquid conveying pipe passes successively, said coiled pipes being adapted to contain a heating and a cooling agent, respectively, substantially as set forth. 4th. In a pasteurizing and racking-off apparatus, the combination, with a gradually reduced pipe through which the liquid is adapted to flow, of a plurality of independent coiled pipes through which the said liquid conveying pipe passes successively, said coiled pipes being adapted to contain a heating and a cooling agent, respectively, and the inlets for the said heating and cooling agents being located at that end of each of the said coiled pipes which is next to the reduced end of the liquid conveying pipe, whereby the liquid and the heating or cooling agent, respectively, are caused to flow in opposite directions, substantially as set forth.

No. 46,728. Targets and Indicators Therefor.

(*Cible et indicateur.*)

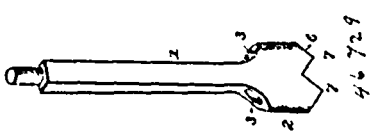


Charles Schifferdecker, Fort Assinaboine, Montana, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. An apparatus of the kind described, comprising a sectional target, each section having a depressible face, an indicator having sections corresponding to those of the target, a pointer for each section of the indicator, and electrically-operated mechanism set in operation by the depression of the target sections and adapted to operate the indicator pointer, substantially as specified. 2nd. An apparatus of the kind described, comprising a target made up of sections, each section of which is provided with inwardly movable buttons, and an indicator having a dial face divided into sections corresponding with those of the target, spring-pressed pointers adapted to protrude through the faces of the dial sections, electrically operated mechanism for releasing the pointers, and circuit-closing devices for said mechanism operated by the depression of one of the target buttons, substantially as specified. 3rd. The combination, with the indicating dial provided with pointers and electrically operated means of displaying them, of the target buttons having rearwardly-extending shanks, a conducting plate through which the shanks of the target buttons slide, insulating sleeves on the shanks of the target buttons adapted to lie normally opposite the conducting plates, and electrical connections between the conducting plate, the button shanks, and the indicating mechanism, substantially as specified. 4th. In an apparatus of the kind

described, the combination with the indicating dial, of a slidable pointer adapted to move through the face of the dial, means, as a spring, for throwing the pointer outward, a catch for holding the pointer against the tension of the spring, and an electro-magnet for releasing the catch, substantially as specified. 5th. The combination, with the perforated dial of the indicator, of spring-pressed plungers arranged behind the perforations, and provided with pointers to slide through the said perforations, lugs on the plungers, swinging levers to engage the said lugs, and electro-magnets for tilting and raising the levers, substantially as specified.

No. 46,729. Rock-Drill. (*Barre à mine.*)



Joseph H. Smith, Plymouth, Ohio, U.S.A., 3rd August, 1894; 6 years.

Claim.—1st. The herein described rock-drill, the same having at its lower end a head having external continuously curved sides approximating in cross-section an ellipse, clearance-openings located within the head at each side of the centre thereof and producing an intermediate partition having a lower cutting-edge, and a cutting-edge located at the lower end of the surrounding wall, substantially as specified. 2nd. The herein described rock-drill, the same having a head substantially elliptical in cross-section, the wall of which is bevelled to form a lower cutting-edge, clearance openings formed in the head at each side of the centre thereof, and pairs of drill-points formed at each side of each clearance-opening, substantially as specified.

No. 46,730. Compositions for Vaporizing in Treatment of Diseases. (*Composition pour vaporiser dans le traitement des maladies.*)

William B. Mason, Leeds, Yorkshire, England, 3rd August, 1894; 6 years.

Claim.—The composition for vaporizing consisting of the ingredients, in the proportions hereinbefore mentioned, in combination substantially as set forth.

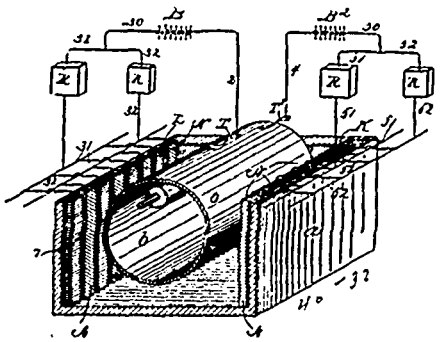
No. 46,731. Process for Producing Block Fuel.

(*Procédé pour la production de combustible en blocs.*)

Alfred Norreys, London, England, 4th August, 1894; 6 years.

Claim.—1st. Producing block fuel by a combination of soap, water, crude petroleum, stearine, or stearine water, or its equivalent, peat or sawdust and rosin in or about its proportions stated and amalgamated in the manner set forth. 2nd. The means or process of producing block fuel by mixing in about the proportions set forth, soap with water, and heating same to boiling point, afterwards adding petroleum gradually, then stearine, or stearine waste, or earth wax-waste with a further quantity of water as a paste, then the peat and rosin in powder, stirring until all the ingredients are thoroughly amalgamated, the mass being afterwards run into moulds.

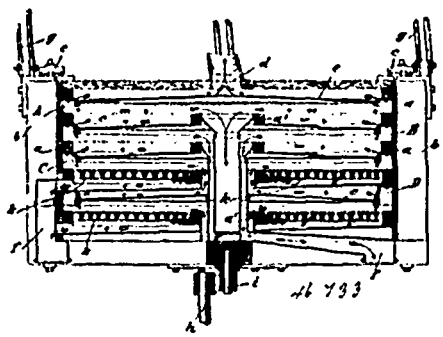
No. 46,732. Production of Alloys by Electro-Decomposition. (*Production d'alliages par la décomposition électrolyse.*)



Charles R. Fletcher, Boston, Massachusetts, U.S.A., 4th August, 1894; 6 years.

Claim.—1st. That improvement in the art or method of producing alloys by electro-deposition of metals, which consists in passing a current from separate anodes of the several metals to enter into the alloy through an electrolyte to a cathode, and so moving the cathode that its surface is repeatedly and successively presented to receive the deposit from the several separate anodes, whereby the metals of the several anodes are built up and alloyed on the cathode, substantially as and for the purpose described. 2nd. The combination of an electrolytic vat and revolving cathode therein, with anodes of different metals and independent circuit connections between said anodes and the revolving cathode, whereby currents of different density may be employed for the different anodes, substantially as described.

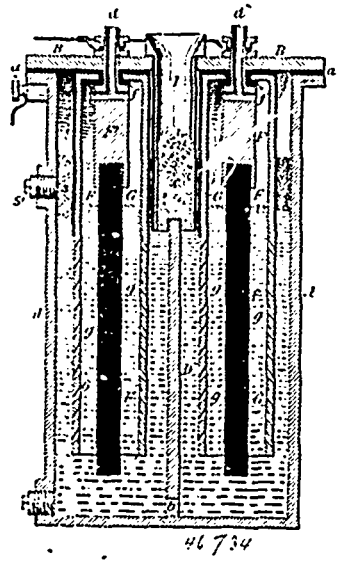
No. 46,733. Sifting Apparatus. (*Crible.*)



Wilhelm Bunge, Lubeck, Germany, 4th August 1894; 6 years.

Claim. In a sifting apparatus, a number of circular sieves, connected together, and put in rotary motion on a horizontal plane, so that the material fed by the shoot falls on to the cone shaped surface placed above each sieve and glides from there over the edges into the sieves where it is evenly spread over the sifting bottom, the coarser particles of the material thereby agglomerating automatically in the middle of the sieve and being removed thence from the machine by discharging tubes, while the finer part passes through the remaining sieves and falls to the ground, constructed and arranged, substantially as hereinbefore described.

No. 46,734. Producing Nitric Acid and Metals from Nitrates. (*Production d'acide nitrique et métaux des nitrates.*)



James D. Darling, Philadelphia, Pennsylvania, U.S.A., 4th August, 1894; 6 years.

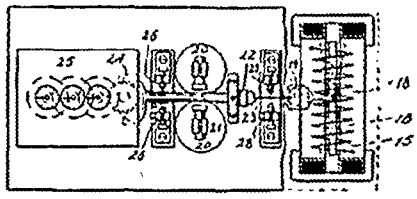
Claim.—The mode herein described of obtaining nitric acid and metallic sodium or potassium from nitrate of soda or potash, said mode consisting in electrolizing the salt while the same is in a state of fusion in a closed vessel, collecting the metallic base at the negative pole, leading off from the positive pole the nitrogen per-oxide there formed, and converting said nitrogen per-oxide into nitric acid, substantially as described.

No. 46,735. Electric Meter. (*Electromètre.*)

Oscar Frolich, Berlin, Germany, 4th August, 1894; 6 years.

Claim.—1st. An electric meter comprising a soft iron bar, capable of oscillating on a central axis, two coils through which the current

to be measured, or a fraction thereof, is made to flow, one of such coils wound transversely and the other parallel to said bar, and means for alternately reversing the direction of the current flowing through the coil wound parallel with said bar. 2nd. An electric

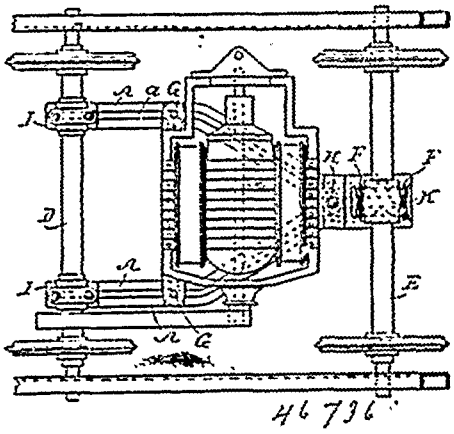


#6735

meter comprising a soft iron bar, capable of oscillating on a central axis, two coils, one of which is wound transversely to said bar and through which the current to be measured is constantly transmitted, and the other coil wound parallel to said bar and through which the current to be measured is alternately transmitted in opposite directions, and means for varying the direction of the transmitted current through the second coil. 3rd. An electric meter comprising a soft iron bar, capable of oscillating on a central axis, two coils through which the current to be measured or a fraction thereof, is made to flow, one of such coils wound transversely and the other parallel to said bar, means for alternately reversing the direction of the current flowing through the coil wound parallel with said bar, and means for indicating the number of the oscillations of the soft iron bar. 4th An electric meter comprising a soft iron bar, capable of oscillating on a central axis, means for producing a field of force the lines of which are parallel to the axis of the bar, means for producing a field of force the lines of which are at right angles to the axis of the bar, means for alternately reversing the polarity or direction of flow of said last named lines of force, and means for visibly indicating the periodicity of the oscillations of the bar. 5th. An electric meter comprising a soft iron bar, capable of oscillating on a central axis, two coils through which the current to be measured, or a fraction thereof, is made to flow, one of such coils wound transversely and the other parallel to said bar, and means consisting of a polarized relay, an intermediate mechanism and circuit connections for alternately reversing the direction of the current flowing through the coil wound parallel with said bar, and means for indicating the number of oscillations of the bar.

No. 46,736. Electro-Locomotive.

(*Locomotive électrique.*)

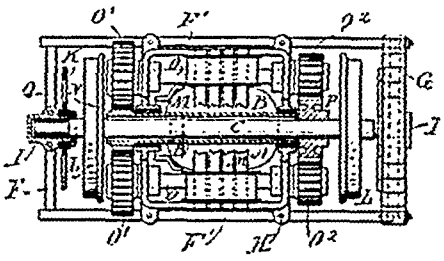


#6736

Alexander Philipsborn, Berlin, Germany, 4th August, 1894; 6 years.

Claim.—1st. The combination in an electro-locomotive, of a motor supporting frame connected at the rear with rigid bearings in which turns the rear axle, and having a free swinging connection with the front axle, shouldered standards mounted on said supporting frame, a motor sustained by said standards, and springs interposed between the shoulders of the latter and the motor, substantially as described. 2nd. The combination in an electro-locomotive motor supporting frame and rear axle, a block in which the front axle turns, and a link connection suspended therefrom and connected to the supporting frame to permit the relative longitudinal movement of the latter in relation to said axle, and the lateral torsional and vertical oscillation of the latter, substantially as described. 3rd. The combination in an electro-locomotive, of a motor supporting frame formed of compound bars, each comprising sections relatively secured to provide an intervening slot at the front portion thereof, the rear and front axles and wheels, a block in which the front axle turns, and a link suspended from said block and having heads seated and bolted in the slots of the frame bars, substantially as described. 4th. The combination in an electro-locomotive, of a motor supporting frame, rear and front axles and wheels, a block in which the front axle turns and provided with front and rear channels of increasing dimensions, and links seated in channels and connected to the supporting frame, substantially as described.

No. 46,737. Electro-Motor Car. (*Char électrique.*)

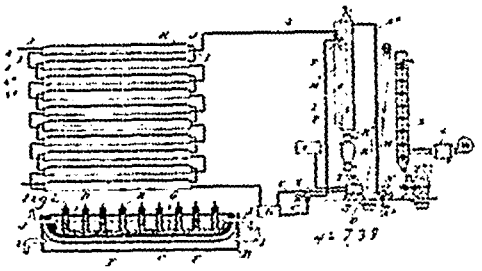


Alexander Philipsborn, Berlin, Germany, 4th August, 1894; 6 years.

Claim.—1st. In an electro-motor car, the combination with the traction-wheels, axle, and journal boxes therefor, of a truck frame supported by the traction wheels of the car, an electro-motor, the field magnets of which are elastically supported upon said truck frame, and the armature shaft of which is concentrically mounted on the car axle but revolubie independently of the same, a car body also elastically supported upon said truck frame and vertically guiding the journal boxes of the axle, and suitable means for transmitting motion from the armature to the traction-wheels of the car, substantially as described. 2nd. The combination in an electro-motor car with the traction-wheels, axle, and journal boxes therefor, of a truck frame supported by the traction-wheels of the car, an electro-motor, the armature of which is arranged concentric with the car axle and capable of eccentric play relative to the same, and the field-magnets of which are elastically supported upon said truck frame, a car body also elastically supported upon said truck frame and vertically guiding the journal boxes of the axle, and suitable means for transmitting motion from the armature to the traction-wheels of the car, substantially as described. 3rd. The combination in an electro-motor car with the traction-wheels, axle, and journal boxes therefor, of a truck frame supported by the traction-wheels of the car, an electro-motor, the armature of which is arranged concentric with the car axle, and capable of eccentric play relative to the same, and the fixed portion of which is elastically supported upon said truck frame at opposite sides of said axle, a car body also elastically supported upon said truck frame and vertically guiding the journal boxes of the axle, and suitable means for transmitting motion from said armature to the traction-wheels of the car, substantially as described. 4th. The combination in an electro-motor car with the traction-wheels, axle, journal bearing therefor, and body sills carrying guards by which said journal bearings are vertically guided, of a truck frame elastically connected to the sills, a motor having its field magnets elastically mounted on said truck, and a tubular armature shaft concentric with but revolubie independently of the axle, and suitable means for transmitting motion from the armature to the traction-wheels of the car, substantially as described. 5th. The combination in an electro-motor car with the traction-wheels, axle, journal bearings therefor, and body sills carrying guards by which said journal bearings are vertically guided, of a truck frame elastically connected to the sills, a motor having its field magnets elastically mounted on said truck, and a tubular armature shaft embracing the axle but capable of eccentric play and independent rotation relative to the same, and suitable means for transmitting motion from the armature to the traction-wheels of the car, substantially as described. 6th. The combination in an electro-motor car with the traction-wheels and axle thereof, of a motor provided with a tubular armature shaft concentric with said axle, suitable means for transmitting motion therefrom to the traction-wheels, a truck frame supporting said motor and capable of a limited oscillatory motion relative to the axle, and the axle, and body sills elastically connected to said frame, substantially as described. 7th. The combination in an electro-motor car with the traction-wheels and axle thereof, of a motor provided with a tubular armature shaft concentric with said axle, gearing for transmitting motion from the motor to the traction-wheels, an oscillatory truck frame secured to the journal boxes of the said axle for supporting the said motor and its gearings, and an elastic connection substantially as described between the said truck frame and the body of the car. 8th. The combination in an electro-motor car with the traction-wheels and axle thereof, of an electro-motor, a tubular transmission shaft surrounding said axle, a tubular armature shaft of the motor surrounding said transmission shaft, and means whereby rotation is imparted from said armature shaft to the transmission shaft, and thence to the traction-wheels, substantially as described. 9th. The combination in an electro-motor car with the traction-wheels and axle thereof, of an electro-motor, a tubular transmission shaft surrounding

said axle, a tubular armature shaft surrounding said transmission shaft and capable of eccentric play relative to the same, a yielding flexible coupling for said armature and transmission shaft, radially variable as described, and means whereby motion is imparted to the traction-wheels from the transmission shaft, substantially as described. 10th. The combination in an electro-motor car with the traction-wheels, axle thereof and a tublar transmission shaft surrounding said axle, of a motor having its field magnets elastically supported on a truck supported by the traction-wheels of the car, and a tublar armature shaft surrounding said transmission shaft and capable of eccentric play relative to the same, a yielding flexible coupling between said armature shaft and transmission shaft, radially variable as described, and means whereby motion is imparted to the traction-wheels from the transmission shaft, substantially as described. 11th. The combination in an electro-motor car with the traction-wheels, axle, journal bearings therefor, and a tubular transmission shaft surrounding said axle, of a motor provided with a tubular armature shaft surrounding said transmission shaft, a yielding flexible coupling between said armature shaft and transmission shaft, means whereby motion is imparted to the traction-wheels from the transmission shaft, and a truck frame elastically supporting said motor, and body sills elastically connected to said frame, substantially as described. 12th. The combination in an electro-motor car with the traction-wheels, axle, journal bearings therefor, and a tubular transmission shaft surrounding said axle, of a motor provided with a tubular armature shaft surrounding said transmission shaft, a yielding flexible coupling between said armature shaft and transmission shaft, means whereby motion is imparted to the traction-wheels from the transmission shaft, a truck frame elastically supporting said motor, and a car body also elastically supported on said truck frame and vertically guiding the journal bearings of the axle in their upward movement, substantially as described. 13th. The combination in an electro-motor car with the traction-wheels, axle, non-supporting journal boxes therefor, and a tubular transmission shaft surrounding said axle and having frictional transmitting wheels on its ends, connected through transmission wheels with the rim of the said traction-wheels, of a truck elastically connected to the car and having journals rigidly supporting the said transmission shaft, a motor having its field magnets elastically mounted on said truck, and having a tubular armature shaft, supported by journals in the said motor frame, and concentric with said axle and power transmission shaft, providing clearance according to the play of the said elastic connection between the said respective frames and between the two tubular shafts thus movable with reference to one another, and a flexible coupling between the armature shaft and the transmission shaft, substantially as described.

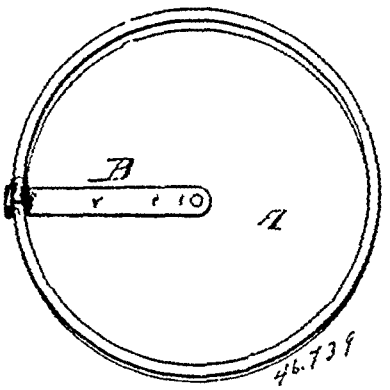
No. 46,738. Process and Apparatus for the Manufacture of Sodium Bicarbonate. (*Procédé et appareil pour la fabrication de bicarbonate de soude*)



Thomas Craney, Bay City, Michigan, U.S.A., 4th August, 1894; 6 years.

Claim.—1st. The process of producing bi-carbonate of soda, which consists in electrolyzing salt brine in an electrolytic apparatus organized for the continuous production of an aqueous solution of caustic soda, converting the product from the soda compartment into bi-carbonate of soda by conducting it into a carbonator, removing the precipitate of bi-carbonate of soda from the liquid and recharging the soda compartment of the electrolytic apparatus with bi-carbonate in solution from the carbonator, substantially as described. 2nd. Obtaining mono-carbonate of soda in solution as a product from the electrolysis of salt brine, by supplying the anode chamber or chambers of an electrolytic apparatus with salt brine, and the catrode chamber or chambers with a solution of bi-carbonate of soda, substantially as described. 3rd. Obtaining a constant increment of mono-carbonate of soda in a given quantity of solvent, by treating the product from the cathode chamber of an electrolytic apparatus organized for the continuous production of caustic soda from salt brine, with carbonic acid gas in a carbonator and returning the liquid solution of bi-carbonate of soda to the cathode chamber of the apparatus, substantially as described. 4th. In an apparatus for the manufacture of bi-carbonate of soda, the combination of an electrolytic apparatus organized for the continuous production of caustic soda in solution, a carbonator, connected in circuit with the cathode compartment of the electrolytic apparatus and provided with means for supplying it with carbonic acid gas, means for circulating the liquid through the carbonator and cathode compartment and a discharge outlet at the bottom of the carbonator, substantially as described. 5th. In a plant for manufacturing bi-carbonate of soda, the combination of the vertical series of electrolytic vats organized for the continuous production of caustic soda from salt brine and connected by suitable feed and discharge pipes for the flow of the liquid through the compartments, the receiver K into which the product of the cathode compartments is discharged, the carbonator L provided with the branch M, the carbonic acid gas pipe N^2 extending to the bottom of the carbonator, the return pipe Q from the branch M to the electrolytic vats, the pump N for maintaining the liquid in circulation, and the receiver R communicating with the carbonator, substantially as described.

No. 46,739. Pastry Tin. (*Ustensile pour pâtisserie.*)

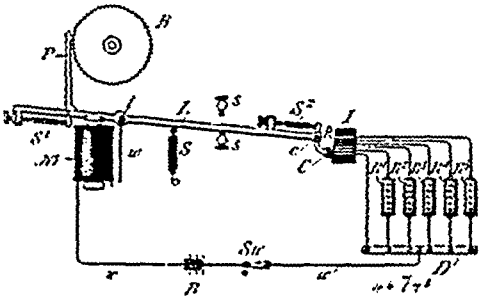


August Eiche, Lincoln, Nebraska, U.S.A., 4th August, 1894; 6 years.

Claim.—1st. A new article of manufacture, consisting of a plate or pan, a spring metal knife or cutter pivotally secured at one end to the plate or pan and provided at its opposite end with a catch adapted to take under the rim of the plate or pan, substantially as set forth. 2nd. A new article of manufacture, consisting of a plate or pan, a spring metal knife or cutter pivotally secured at one end to the plate or pan and provided at its opposite end with a catch adapted to take under the rim of the plate or pan, and a loop or handle located adjacent to said catch, substantially as set forth. 3rd. A new article of manufacture consisting of a plate or pan, a spring metal knife or cutter pivotally secured at one end to the centre of said plate or pan, and resting normally in an inclined position, the opposite end being provided with a catch adapted to engage the under side of the rim of the plate or pan, substantially as set forth.

No. 46,740. Electro-Motive Device.

(*Appareil électro-moteur.*)

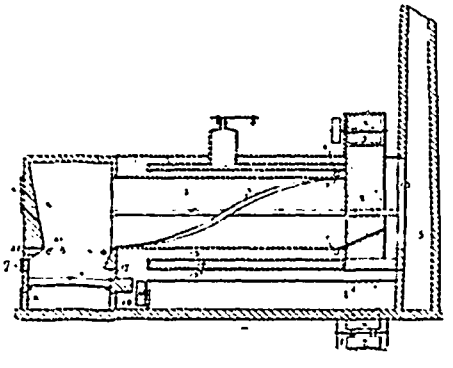


Romaine Callender, Brantford, Ontario, Canada, 4th August, 1894; 6 years.

Claim.—1st. An electro-motive device consisting of an electro-magnet having an armature located in the magnetic field thereof, and provided with means tending to withdraw it out of said field, in combination with circuit connections through the coils of the magnet and the armature lever for varying the current supply as it approaches the coil, said armature being operatively connected to mechanism to be propelled, substantially as described. 2nd. An electro-motive device consisting of an electro-magnet having an armature carried by an armature lever provided with a retractile spring and operatively connected to mechanism to be propelled, in combination with current varying devices operatively connected through the armature lever, and the coils of the magnet whereby the movement is maintained constant throughout the forward stroke of the armature lever, substantially as described. 3rd. An electro-motive device consisting of an electro-magnetic coil, an armature or

solenoid core therefor having circuit connections for varying the current from the source of current supply to the coil at will or in any desired order of variation in combination with an independent mechanism operatively connected to the armature or core and requiring a variable application of power, substantially as described. 4th. An electro-motive device consisting of an electro-magnetic coil having circuit connections on one side with a source of electric energy and a series of variable resistances connected in multiple arc relation therewith; with an armature or solenoid core connected through a circuit-changing device, with the aforesaid resistances on the other side of the coil, substantially as described. 5th. An electro-motive device consisting of an electro-magnetic coil operatively connected on one side with a battery and a multiple arc series of variable resistance coils and on the other side through the armature lever with a circuit-changing device carried thereby and having operative connection with the opposite ends of the variable resistances; the arrangement being such that the circuit-changing device is in contact with the coil of lowest resistance when the armature is farthest from the pole of the magnet and *vice versa*, substantially as described. 6th. An electro-motive device consisting of an electro-magnet having an armature and an armature lever operatively connected through a pawl to a ratchet mechanism and a variable resistance with a source of current supply and circuit connections carried by the movable armature lever, said connections being operatively connected through the smallest portion of the variable resistance when the armature is farthest from the magnet core and through the greatest resistance when the armature is closely adjacent to said core, and through the other resistance in proportion to the distance of the armature from the core, whereby a continuous and steady pull in imparted to the ratchet-wheel during the entire stroke of the armature lever, substantially as described. 7th. An electro-motive device consisting of an electro-magnet M, having an armature lever and a propelling pawl P, engaging a ratchet-wheel R, in combination with a source of current supply and a multiple arc series of resistance coils connected on one side to the source of current supply and on the other side to a circuit-changing device carried by the armature lever, the circuit connections being arranged so that the resistance coil of least resistance is in direct circuit with the magnet coil when the armature is farthest from the pole of the magnet and the coil of greatest resistance is in direct circuit therewith when the armature is nearest said pole, substantially as described.

No. 46,741. Incinérateur. (*Incinérateur.*)



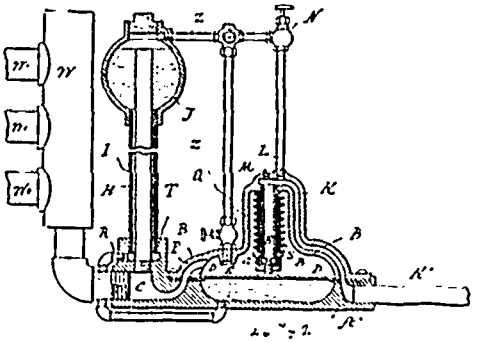
Jean François Chazotte et Joseph Chazotte tous deux de Montréal, Québec, Canada, 4ème Août 1894, 6 years.

Résumé.—Un incinérateur composé des parties suivantes: Ascenseur 2, cylindre 4, arbre à hélice 8, chaudière 14, foyer 11, composé des parties suivantes: grille 10, ouvertures 22, 17, 16, 21, avec les régistres pour les fermer cendrier 12, chambre 18, clef 24, le tout tel que décrit précédemment et pour les fins indiquées dans la spécification ci annexée.

No. 46,742. Steam Trap. (*Purge de tuyau à vapeur.*)

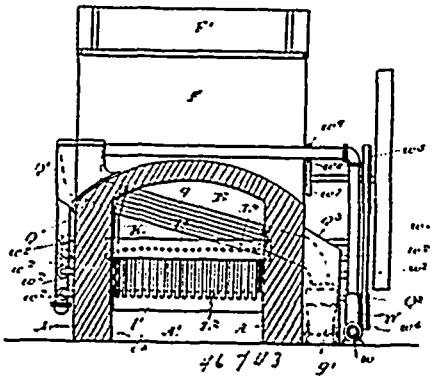
Richard J. Flynn, Boston, Massachusetts, U.S.A., 4th August, 1894; 6 years.

Claim.- 1st. The combination of two chambers separated by a partition or diaphragm adapted to be moved by variations of pressure, a pressure device such as a spring, arranged to exert a constant pressure on one side of said partition, connections between said chambers and a source of steam supply, whereby steam and water of condensation from said source may be admitted to both sides of the diaphragm, said connections including a condensing chamber or reservoir located above the level of the partition, and conduits connecting said reservoir and the two chambers, said reservoir and one of said conduits being adapted to contain a column of water which, with the steam pressure equal in the two chambers, overcomes the constant pressure on the diaphragm, the arrangement being such that an accumulation of water of condensation in the conduit connecting the reservoir with the constantly pressed side of the partition causes a variation of pressure on one side of the partition, and a device, such as a valve, operated by fluctuations of the partition, as set forth. 2nd. The combination of two chambers, separated by a movable partition or diaphragm, a pressure device, such as a spring, arranged to exert a constant pressure on one side of said partition, a condensing chamber or reservoir elevated above



said partition, a stand-pipe, communicating at its upper end with said reservoir, and its lower end with the constantly pressed side of the partition, another stand-pipe, communicating at its lower end with the opposite side of the partition, and at its upper end with the reservoir, and an inlet for steam and water of condensation, the arrangement being such that before the accumulation of water of condensation in the apparatus the steam pressure is equal on both sides of the partition and the water in one of said stand-pipes, aided by the steam pressure, overcomes the constant pressure on the partition, while an accumulation of water causes a variation of pressure on one side of the partition, as set forth. 3rd. The combination of two chambers, separated by a movable partition or diaphragm, a pressure device, such as a spring, arranged to exert a constant pressure on one side of said partition, a condensing chamber or reservoir elevated above said partition, a stand-pipe, communicating at its upper end with said reservoir, and at its lower end with the constantly pressed side of the partition, another stand-pipe, communicating at its lower end with the opposite side of the partition, and at its upper end with the reservoir, a chamber at the base of one of said stand-pipes, said chamber communicating with the chamber at the constantly pressed side of the partition, and an inlet for steam and water of condensation communicating with said chamber, the arrangement being such that when said chamber is open to receive steam, there is a uniform steam pressure on both sides of the partition, and when the water of condensation accumulates in said chamber, it shuts off the direct steam pressure from one side of the diaphragm, and reduces the pressure thereat, as set forth. 4th. The combination of two chambers, separated by a single diaphragm or partition adapted to be moved by variations of pressure, one of said chambers having an inlet, an outlet-controlling valve supported by the diaphragm, a stand-pipe communicating with the chamber from which the outlet extends, another stand-pipe communicating with the other chamber, said stand-pipes being adapted to receive water of condensation from a source of steam supply, and means whereby an accumulation of water is caused to vary the pressure on the diaphragm and open the valve, as set forth.

No. 46,743. Incinerator. (*Incinérateur.*)



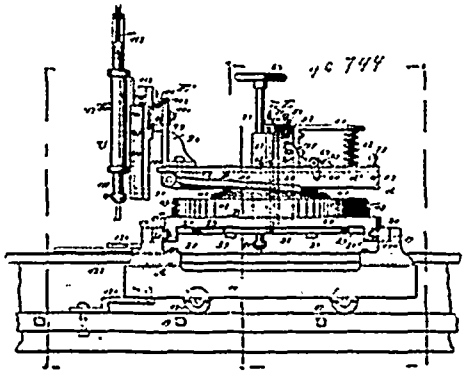
Adulphus Davis, Montreal, Quebec, Canada, 4th August, 1894; 6 years.

Claim.- 1st. An incinerator having water containing walls and partitions forming steam generating parts and mechanical devices operated by the steam produced therefrom for the purpose set forth. 2nd In an incinerator, the combination of a single combustion or reducing chamber, a number of receiving sections or receivers for different kinds of refuse and effete matter, having separate and independent receiving and discharging points for the

purpose set forth. 3rd. In an incinerator, the combination of a single combustion or reducing chamber, a number of receiving sections or receivers for different kinds of refuse and effete matter, having separate and independent reducing and discharging points and the walls of which are constructed to contain water for the purposes set forth. 4th. In an incinerator, the combination of a single combustion or reducing chamber, a number of receiving sections or receivers, for different kinds of refuse and effete matter, having separate and discharging points, and walls constructed to contain water, and a fire or ignition chamber proper located at one end of the reducing chamber. 5th. In an incinerator, the combination of a single combustion or reducing chamber, a number of receiving sections or receivers for different kinds of refuse and effete matter, having separate and independent receiving and discharging points, and walls constructed to contain water, and a fire or ignition chamber proper located at one end of the reducing chamber, and having a grate constructed to contain water, as set forth. 6th. In an incinerator, a combustion or reducing chamber partitioned or subdivided into various compartments by water containing walls for the purpose set forth. 7th. An incinerator of combined furnace and boiler form, internal fittings or receptacles for refuse constructed with hollow walls constituting the boiler portion thereof. 8th. An incinerator having a fire chamber at one end thereof, a chimney at the opposite end, a passage for the hot gases between these points with a suction device for withdrawing such gases from said passage as they approach the chimney and returning same to the fire chamber for the purposes set forth. 9th. In an incinerator, a hopper, for the reception of garbage, furnished with heat conducting pipes and a heat supply for same, for the purpose set forth. 10th. In an incinerator, a hopper, for the reception of garbarge, furnished with perforated steam conducting pipes and a steam supply for same, for the purposes set forth. 11th. In an incinerator, the combination with a hopper for the reception of garbage, having one of its sides inclined, and a row of teeth projecting from one edge of the delivery opening of same, of a rotatable toothed drum, located in such delivery opening, with driving belt and pulley rotating same for the purpose set forth. 12th In an incinerator, the combination with a hopper for the reception of barbage, located above the fire chamber thereof, of a shield below such hopper, for the purpose set forth. 13th. In an incinerator having a combustion or reducing chamber, a receptacle for night soil of a trough-like form extending in an inclined position across such combustion chamber and communicating with a receiving hopper at one end and a delivery opening at the other, for the purpose set forth. 14th. In an incinerator, a receptcle for night soil of a trough-like form with hollow walls adapted to contain water, for the purpose set forth. 15th. In an incinerator, a receptacle for night soil formed of a number of tubes adapted to contain water, arranged close together, as shown and described. 16th. In an incinerator, a receiving section for dead animals, in the form of a water jacketed compartment, as shown and described. 17th. In an incinerator, a receiving section for tin cans formed of a number of tubes adapted to contain water arranged some little distance apart, for the purpose set forth. 18th. In an incinerator, the combination of the enclosing structure proper, having a chimney, a fire grate, and means for regulating the draft, a main hopper adjacent to and above said fire grate, a number of receiving sections or receivers within the structure, for different kinds of refuse and effete matter, and having separate and independent receiving and discharging points, for the purposes set forth.

No. 46,744. Stone-Carving Machine.

(*Outil pour sculpter la pierre.*)

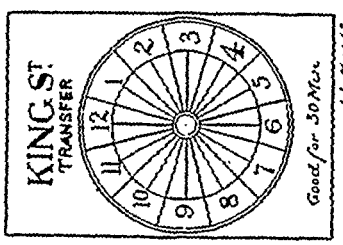


Antonio Zanardo, New York, State of New York, U.S.A., 4th August, 1894; 6 years.

Claim.—1st. In a stone-carving machine, a bed, a table having movement in the bed, a tool carriage held to revolve upon the table, a plate adjustably located in the bed, and adjusting devices whereby the bed plate may be set eccentric to the carriage, as and for the purpose set forth. 2nd. In a stone-carving machine, a bed, an eccentric adjustably carried by the bed, a table having sliding movement in the bed over the plate, the plate and table being each provided with a central aperture, a carriage having rotary movement upon the table, a tool-holding mechanism attached to the carriage and extending downward through an opening in the carriage and openings in the table and eccentric plate, and mechanism, substantially as shown and described, for changing the position of the eccentric plate with reference to the carriage, as and for the purpose set forth. 3rd. In a stone-carving machine, a bed provided with an eccentric plate having a central aperture and capable of sliding movement in the bed, a support of substantially circular character having rotary movement upon the body of the bed, a table provided with an opening therein, having sliding movement in the rotary section of the bed, a tool carriage having rotary movement upon the table, and adjusting devices connecting the eccentric plate with the carriage, whereby the said plate may be adjusted concentrically or eccentrically to the carriage, as and for the purposes specified. 4th. In a stone-carving machine, a base constructed of adjustable sections, said base having wheeled supports, a bed adjustably connected with the base, a slide capable of lateral movement in ways produced in the bed, and a tool carriage having rotary movement upon the table, as and for the purpose specified. 5th. In a stone-carving machine, an adjustable base, a bed adjustably located upon the base, a table having sliding movement in the bed, a collar having a fluted surface secured upon the table, a tool carriage having rotary movement upon the table, and a reciprocating mechanism connecting the fluted section of the collar with the carriage, and imparting to the latter a vibratory movement, as and for the purpose specified. 6th. In a stone-carving machine, a base, a bed adjustably connected with the base, the bed being provided with an opening to admit a tool, a table having sliding movement in the bed and likewise provided with a tool receiving opening, means for anchoring the table to the bed, a carriage having rotary movement upon the table, and a tool-carrying mechanism adjustably located upon the carriage and extending through the openings in the bed and table, as and for the purpose set forth. 7th. In a stone-carving machine, adjustable base, a bed adjustably connected with the base, a table having sliding movement in the bed, and means for anchoring the table to the bed, a carriage having rotary movement upon the table, a tool-carrying mechanism having spring-controlled connection with the table and comprising a series of sections adjustably connected with the table and with each other, substantially as shown and described. 8th. In a stone-carving machine, the combination with a carriage, of a tool-holding device, the same consisting of a tool post having yielding spring connection with the carriage, an adjusting device connected with the tool post, whereby it is moved horizontally upon its support, a tool plate having pivotal connection with the tool post and lateral adjustment thereon, and a tool casing having vertical adjustment upon the tool plate, as and for the purpose specified. 9th. In a stone-carving machine, the combination with a carriage, of a tool-holding device, the same consisting of a tool post having yielding spring connection with the carriage, an adjusting device connected with the tool post, whereby it is moved horizontally upon its support, a tool plate having pivotal connection with the tool post and lateral adjustment thereon, a tool casing having vertical adjustment upon the tool plate, a limiting device controlling the vertical movement of the tool casing, a tool holder held to revolve in the casing, and means, substantially as shown and described, for connecting the holder rigidly with the casing, as and for the purpose set forth. 10th. In a stone-carving machine, the combination, with a bed comprising an adjustable body, and a support having rotary movement in the body, a sliding table carried by the rotary section of the bed, and means for anchoring the table to the bed, the table being provided with an opening, of a fluted surface located upon the table around its opening, a carriage comprising a body section and a tool carrying section having hinged connection with the body section, the body section being held to turn upon the table, a rock shaft carried by the body section of the carriage, an arm projected from the rock shaft and engaging with the tool-carrying section of the carriage, and a connection between the rock shaft and the fluted surface of the table, whereby a vibratory movement is imparted to the tool carrying section of the carriage, as and for the purpose set forth. 11th. In a stone-carving machine, the combination with an adjustable base having a wheeled support, a bed comprising a body section having adjustable connection with the base, and a supporting section having a rotary movement upon the supporting section, and a table having sliding movement in the supporting section of the bed, of a carriage constructed in two sections, a body section having rotary movement upon the table, and a cover section having hinged connection with the body, a spring-controlled pivotal support located upon the cover section of the carriage, a tool post having sliding movement upon the spring-controlled support, and a tool holder having lateral and vertical adjustment upon the tool post, the tool holder being adapted to extend through the carriage, the table, bed and base, substantially as shown and described. 12th. In a stone carving machine, the combination, with a bed comprising an adjustable body section and a supporting section mounted to turn upon the body section, both sections being of ring-like construction, a slide carried by the body section of the bed, having an opening therein for the reception of a tool, and a table provided with an opening registering with that of the slide, the table having lateral movement upon the supporting section of the bed, of a tool carriage having movement upon the slide, and adjusting devices having fixed connection with the carriage and adjustable connection with the slide of the bed, whereby the said slide

may be placed eccentrically or concentrically to the carriage, substantially as shown and described. 13th. In a stone-carving machine, the combination, with a bed comprising a sliding and a rotary section, both sections being of substantially ring like construction, an apertured plate having a sliding movement in the sliding section of the bed, an apertured table having sliding movement in the bed over the rotary section, and means, substantially as shown and described, for anchoring the table to the bed, and a fluted rib carried by the table, of circular construction, a carriage comprising a bed and a cover section, one hinged to the other, the body section having rotary movement upon the slide, a vibratory mechanism connecting the cover section of the carriage with the slide, an adjusting mechanism fixedly secured to the body of the carriage and adjustably connected with the slide in the bed, whereby the latter may be placed concentric or eccentric to the carriage, and a tool-holding mechanism adjustably supported upon the cover section of the carriage, the said tool-holding mechanism comprising sections, the several sections having independent adjustment in various directions, as and for the purpose set forth. 14th. In a stone-carving machine, the combination, with an expansible base, a bed adjustably connected with the base, a slide having rotary and sliding movement on a portion of the base, a tool carriage having rotary movement upon the slide, a tool-holding mechanism located upon the carriage and extending through the central portion of the carriage, slide and base, the said tool-holding mechanism being adapted to carry a finishing tool, and a second tool holding mechanism removably attached to the carriage near one end and adapted to carry a roughing tool, both of the tool holding mechanisms having independent adjustment laterally and vertically, substantially as shown and described. 15th. In a stone-carving machine, the combination, with an expansible base having wheeled supports, a bed comprising a body having sliding movement upon the base, and a supporting section having rotary movement upon the body, an eccentric plate or slide adjustably located upon the body of the base, and a table having sliding movement in the rotary section of the bed, of a tool carriage, an adjusting mechanism adjustably connected with the eccentric plate and having fixed connection with the carriage, and tool-holding mechanisms supported by the carriage, one tool-holding mechanism being located at the end of the carriage and another about centrally thereof, both tool-carrying mechanisms having independent adjustment vertically and laterally, the inner mechanism being spring-controlled, as and for the purpose set forth.

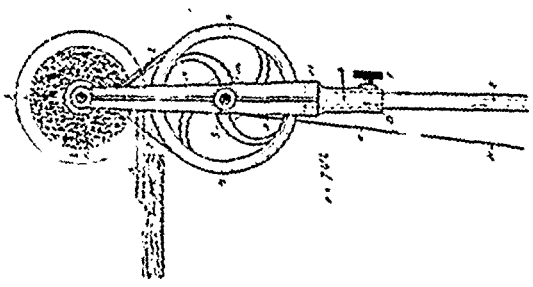
No. 46,745. Transfer Ticket. (*Billet de correspondance.*)



William Johnston and Thomas Heenan, Toronto, Ontario, Canada, 4th August, 1894; 6 years.

Claim.—A transfer ticket of a particular colour to indicate the day on which it is issued and having marked on it the name or symbol of the route issuing the ticket and a clock dial with two rings, a punch mark within one ring indicating a.m., and a punch mark within the other ring indicating p.m., substantially as and for the purpose specified.

No. 46,746. Foot Power. (*Moteur à pieds.*)

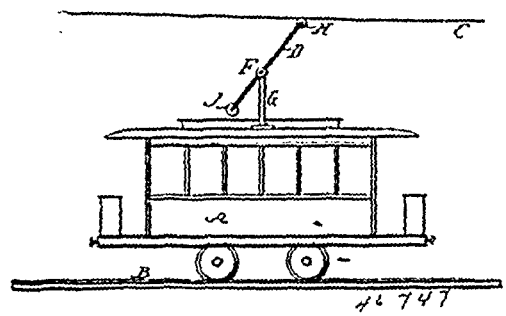


James T. Barnard and Samuel Briggs, both of Hamilton, Ontario, Canada, and Samuel C. Rogers, Buffalo, New York, U.S.A., 6th August, 1894; 6 years.

Claim.—1st. The frame A, having shank D, with adjustable standard E, and the bench projection B, in combination with the cross shafts S and S¹, the belt wheels N and T, and the emery wheel U, substantially as described and set forth. 2nd. The combination of the frame A, having shank D, with standard E, and screw F, the drive wheel having corrugated casing M, with interior clutch J, having dogs L, the coil spring O¹, in rigid casing O, the hubs I, with flange P, the foot belt H, the shafts S and S¹, the belt wheels T and N, and the emery wheel or wheels, substantially as described and set forth.

No. 46,747. Electric Railway Trolley.

(*Trollée de chemin de fer électrique.*)



Adolf Worner, Budapest, Austria Hungary, 6th August, 1894; 6 years.

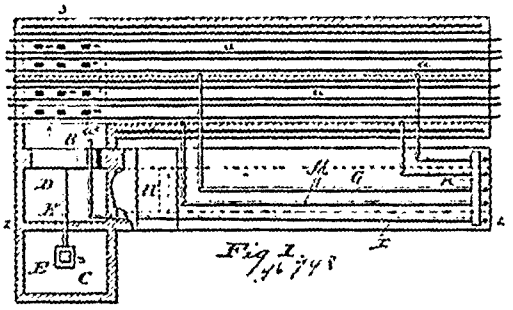
Claim.—1st. In an electric railway, the combination with a moving vehicle having an electro-motor mounted thereon, of an electric conductor situated above the vehicle, a contact device consisting of a metallic frame provided with a revolving sleeve which covers the upper surface of said frame, said frame pivoted at about its center in suitable supports on the top of said vehicle and adapted to make an upwardly-yielding and laterally-sliding contact through said sleeve with said conductor, and means for maintaining said contact device in apposition with said conductor, irrespective of the direction of motion of said vehicle. 2nd. An upward-pressure contact for electric railways, comprising the combination of a metallic frame pivoted at about its centre, pivotal supports for said frame connected to but extending above the body of the vehicle, and springs for imparting an upward movement to the upper portion of said frame. 3rd. An upward-pressure contact for electric railways, comprising the combination of a metallic frame pivoted at about its centre, pivotal supports for said frame connected to but extending above the body of the vehicle, and means, such as described, whereby the angular inclination of the contact-frame relative to the body of the vehicle may be automatically altered by change of direction of the motion of the vehicle without disturbing the contact between it and the conductor, upon which it bears. 4th. An upward-pressure contact for electric railways, comprising the combination of a metallic frame, pivotal supports for the frame connected to but extending above the body of the vehicle and supporting said frame above its centre of gravity, whereby upward movement will be given to the upper portion of said frame and contact preserved between it and the conductor upon which it bears, irrespective of the direction of motion of the vehicle upon which it is placed. 5th. An upward-pressure contact for electric railways, comprising the combination of a swinging metallic frame, a revolving sleeve covering the upper portion of said frame, pivotal supports for the frame, which carry it so far above the top of the vehicle that its lower portion may swing clear of the top of said vehicle when the angular inclination of the frame is altered by a change of direction in the motion of the vehicle, and a device which will maintain the said contact device in apposition with said conductor, irrespective of the direction of motion of the vehicle upon which it is placed.

No. 46,748. Kiln. (*Four.*)

Franklin David Cummer, Cleveland, Ohio, U.S.A., 6th August, 1891; 6 years.

Claim.—1st. The process herein described of heating a kiln or dryer, consisting in establishing a forced draft through the furnace of the dryer or kiln, and forcing the heat from the furnace into the kiln or dryer-proper, substantially as set forth. 2nd. The process herein described of producing hot air and supplying the same to the kiln or dryer-proper, consisting in establishing a forced draft through and from the furnace of the kiln or dryer and from the atmosphere outside of the furnace, into a chamber, wherein the air is heated by the products of combustion from the furnace, and thence forcing the hot air into the kiln or dryer-proper, substantially as set forth. 3rd. The process herein described of producing hot air for a kiln or dryer, consisting in establishing a forced draft through the furnace of the dryer or kiln and sucking or drawing the products of combustion from the furnace together with a suitable quantity of air from outside the furnace into a chamber wherein the air is heated by said products of combustion, and thence blowing or forcing the hot air

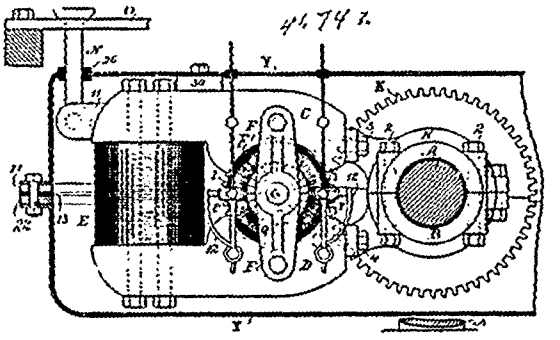
into the kiln or dryer-proper, substantially as set forth. 4th. The process herein described of producing hot air for a kiln or dryer, consisting in using from twenty to twenty-five pounds of air to one



pound of fuel in the furnace of the kiln or dryer and forcing the products of combustion, together with a suitable quantity of air from outside the furnace, into a chamber and uniting the same preparatory to entering the chamber, and thence forcing the hot air into the kiln or dryer-proper, substantially as set forth. 5th. The combination with the kiln-proper, furnace for the kiln, and suitable passage-ways for conducting the heat from the furnace to the kiln-proper, of suitable means for establishing a forced draft through the furnace and forcing the heat from the furnace, through the aforesaid passage-ways, into the kiln-proper, substantially as set forth. 6th. The combination with the kiln-proper, furnace for the kiln, and passage-ways for conducting the heat from the furnace to the kiln-proper, of a fan or blower for establishing a forced draft through the furnace and forcing the heat from the furnace, through the aforesaid passage-ways, into the kiln-proper, substantially as set forth. 7th. The combination with the kiln or dryer-proper, furnace for the kiln or dryer, a commingling-chamber, and passage-ways for conducting the products of combustion from the furnace, and air from outside the furnace, into said chamber, and a passage-way for conducting the heated air from said chamber into the dryer or kiln-proper, of suitable means for establishing a forced draft through the furnace and through the aforesaid passage-ways into the aforesaid chamber and from the latter into the kiln or dryer-proper, substantially as set forth. 8th. The combination, with the kiln or dryer-proper and tunnel or duct located below and in open relation with the dryer or kiln-proper, of a furnace, a commingling-chamber, passage-ways for conducting the products of combustion from the furnace, and air from outside the furnace, into said chamber, and a fan or blower located between the commingling-chamber and aforesaid tunnel and adapted to create a draft through the furnace and aforesaid passage-ways into the commingling-chamber and from the latter through the aforesaid duct or tunnel into the kiln or dryer-proper, substantially as set forth. 9th. The combination, with the kiln or dryer-proper, furnace for the kiln or dryer, a commingling-chamber, and passage-ways for conducting the products of combustion from the furnace, and air from outside the furnace, into said chamber, and a passage-way for conducting the heated air from said chamber into the dryer or kiln-proper, of suitable means for establishing a forced draft through the furnace and through the aforesaid passage-ways into the aforesaid chamber and from the latter into the kiln or dryer-proper, and one or more valves or dampers for regulating the supply of air to the aforesaid chamber, substantially as set forth. 10th. The combination of the kiln or dryer-proper, a commingling-chamber in open relation with the dryer or kiln-proper, furnace for the kiln, a stack or off-take flue for the furnace, said stack or flue being in open relation or adapted to be placed in open relation with the aforesaid chamber and having one or more openings for the admission of air, one or more valves or dampers for regulating the size of or closing said openings, and suitable means for establishing a forced draft, through and from the furnace and through and from the aforesaid openings, into the stack or off-take flue, from the latter into the aforesaid chamber, and from said chamber into the dryer or kiln-proper, substantially as set forth. 11th. The combination of the kiln or dryer-proper, a commingling-chamber C in open relation with the dryer or kiln-proper, furnace for the kiln or dryer, said furnace having a comparatively long chamber G^1 in open relation with and extending rearwardly of the fuel-chamber, stack or flue H in open relation with chamber G^1, a passage-way from said stack or flue to chamber C, one or more valves or dampers for closing said passage-way, the stack or flue having one or more openings for the admision of air from outside the furnace, one or more valves or dampers for regulating the size of or closing said openings, and suitable means for establishing a forced draft, through and from the furnace and through and from the aforesaid openings, into the aforesaid stack or flue, from the latter into chamber C, and from said chamber into the kiln or dryer proper, substantially as set forth. 12th. The combination with the dryer or kiln proper, furnace for the kiln or dryer, a passageway for conducting the heat to the kiln or dryer proper, and a suitable device or means for establishing a forced draft through said passageway, of a pipe leading from the discharge end of said draft-producing device or means to the outside, and a heat-measuring device or instrument exposed to the heat circulating through said pipe, substantially as set forth. 13th. In a kiln or dryer, pipes leading from different points of the dryer or kiln proper to the front end of the furnace of the dryer or kiln, and heat-measuring devices or instruments connected with said pipes at the front end of the furnace and exposed to the heat circulating through the pipes, substantially as set forth. 14th. The combination with the dryer or kiln proper, furnace for the kiln or dryer, a passageway for conducting the heat to the dryer or kiln proper, and a suitable device or means for establishing a forced draft from the ash-pit of the furnace through the aforesaid passageway, of devices or instruments for measuring the heat in different parts of the kiln or dryer, respectively, pipes properly connecting the heat-measuring devices or instruments with the respective parts of the dryer or kiln, and pipes or passageways establishing open relation between the aforesaid pipes and the path of the aforesaid draft, substantially as set forth.

No. 46,749. Car Lighting Apparatus.

(Appareil d'éclairage pour chars électriques.)



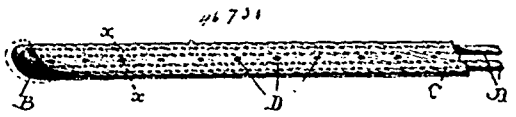
William Biddle and Patrick Kennedy, both of Brooklyn, New York, U.S.A., 6th August, 1894; 6 years.

Claim.—1st. The combination with the external circuit containing the electric lamps and secondary battery, in multiple arc, of a pole changing switch, a dynamo and a connection for driving the same from the car axle, and a revolving cam and lever for moving the pole changing switch according to the direction of rotation of the armature shaft and car axle, substantially as set forth. 2nd. The combination with a car axle and a dynamo, of a divided sleeve bolted upon the car axle, a divided ring around the sleeve and bolts for connecting the same to the dynamo frame, and a connection between the dynamo frame and the truck frame for holding the dynamo, substantially as set forth. 3rd. The combination with the car axle and truck frame, of a dynamo, a divided sleeve and bolts for securing the same to the car axle, a ring around the sleeve and bolts for connecting the same to the dynamo, a connection from the dynamo to the car truck, a divided gear wheel around the sleeve, and a pinion upon the armature shaft, and a coupling or clutch for connecting and disconnecting the gear-wheel and sleeve, substantially as set forth. 4th. The combination with the car axle and truck frame, of a dynamo, a divided sleeve and bolts for securing the same to the car axle, a ring around the sleeve and bolts for connecting the same to the dynamo, a suspending link from the dynamo to the car truck, a divided gear wheel around the sleeve, a pinion upon the armature shaft, a coupling or clutch for connecting and disconnecting the gear wheel and sleeve, there being recesses in the divided gear and in the ring of the armature frame for containing lubricating material, and rings around the sleeve and within the recesses for supplying the lubricating material to the surfaces of the sleeve, substantially as set forth. 5th. The combination with the external circuit and incandescent lamps and storage battery in multiple arc and within a railway car, of a dynamo, a pole changing switch and an automatic means for moving the same for maintaining uniformity in the direction of the current in the external circuit, regardless of the direction of rotation of the armature of the dynamo, a magnet and armature controlled by the magnet and acting as a switch, a resistance thrown into the external circuit by the movement of the armature when the rotation of the dynamo armature is lessened or stops, one helix of the armature field being in a shunt, and the other in series with the external circuit, substantially as set forth. 6th. The combination with the dynamo, of the axle, a sleeve upon the axle, a supporting ring around the sleeve and connected with the dynamo, a gear surrounding the sleeve, a clutch for connecting and disconnecting the sleeve and the gear, and a pinion upon the axle of the armature, a two-part case with edge bars for supporting the meeting edges of the case, and an elastic intervening packing, and packing glands around the axle and connected with the case for excluding dust and moisture from the dynamo and gear, substantially as set forth. 7th. The combination with the car-wheel axle, of the divided rings $G\,G^1$, clamped upon the axle, a sleeve of metal between the said rings cast around the axle, an armature surrounding the axle, and armature rings in halves at the ends of the armature, screws for

clamping the same to the sleeve, the field magnets at opposite sides of the armature, the supporting frames for the same, and half circle bearings surrounding the sleeve upon the axle and the bolts for connecting the half circle bearings, substantially as set forth. 8th. The combination with the car-wheel axle, of the divided rings G G¹, clamped upon the axle, a sleeve of metal between the said rings cast around the axle, an armature surrounding the axle, and armature rings in halves at the ends of the armature, screws for clamping the same to the sleeve, the field magnets at opposite sides of the armature, the supporting frames for the same, and half circle bearings surrounding the sleeve upon the axle, the bolts for connecting the half circle bearings, a slotted bracket extending out at one side of the dynamo, and a cross-bar connected at its ends with the truck, substantially as set forth. 9th. The combination with the car-wheel axle, of the divided rings G G¹, clamped upon the axle, a sleeve of metal between the said rings cast around the axle, an armature surrounding the axle and armature rings in halves at the ends of the armature, screws for clamping the same to the sleeve, the field magnets at opposite sides of the armature, the supporting frames for the same, and half circle bearings surrounding the sleeve upon the axle, the bolts for connecting the half circle bearings, commutator plates at one end of the armature, the clamping ring for the outer ends of the commutator plates and by which they are held to the sleeve, and commutator brushes supported by the frames of the dynamo, substantially as set forth.

No. 46,750. Dress and Corset Stay.

(*Busc de robe et corset.*)

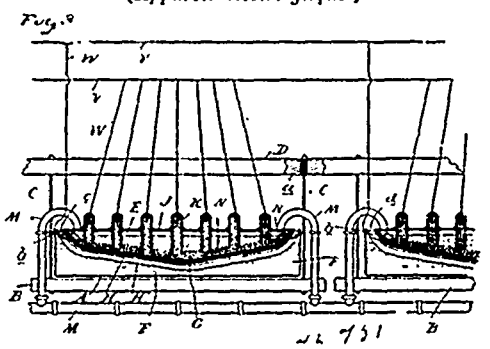


Julius Janowitz, New York, State of New York, U.S.A., 6th August, 1894; 6 years.

Claim.—1st. A multiplex wire stay having a hard resilient coating, covering the members of the stay on all sides, and forming a filling connecting the contiguous edges of said members, substantially as described. 2nd. A metallic stay covered with a hard compound and having perforations through the covering only, whereby the metal is left of its original strength, substantially as described. 3rd. A stay having a central steel covered with a hard resilient coating, projecting beyond the edges of the steel, the edges of the coating being reinforced, substantially as and for the purpose specified. 4th. A stay having a hard composition coating on the body and soft composition cushions at the ends, substantially as described.

No. 46,751. Electrolytic Apparatus.

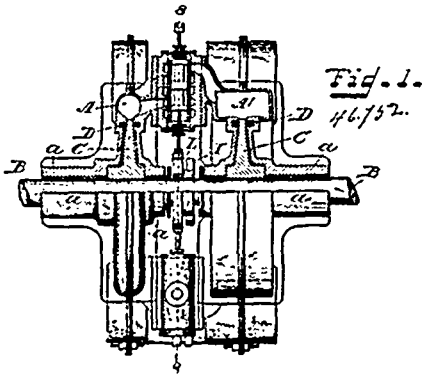
(*Appareil électrolytique.*)



Thomas Craney, Bay City, Michigan, U.S.A., 6th August, 1894; 6 years.

Claim.—1st. In an electrolytic cell, a containing vessel, a porous vessel therein consisting of an outer supporting frame or screen, the walls of which are inclined and of a lining of incompact material forming the inner walls of the vessel and constituting a diaphragm and the electrode, substantially as described. 2nd. In an electrolytic cell, a containing vessel, a porous vessel therein, consisting of a vessel shaped supporting frame or screen provided with outwardly inclined sides, and of an inner lining of incompact material co-extensive with the supporting frame and constituting a diaphragm and the electrode, substantially as described. 3rd. In an electrolytic cell, a containing vessel, a porous vessel therein consisting of the wire screen G having the form of a vessel with outwardly inclined sides and a bottom sloping toward the centre, and of asbestos sheet applied as an inner lining to the screen and the electrode, substantially as described. 4th. In an electrolytic cell, the combination, with an outer containing vessel forming the cathode compartment of an inner porous vessel forming the anode compartment and consisting of a vessel shaped frame or screen secured in the outer vessel and having inclined walls, and of a lining of incompact material co-extensive with the frame and the electrodes, substantially as described. 5th. In an electrolytic cell, the combination, with an outer vessel forming the cathode compartment of a porous inner vessel forming the anode compartment and consisting of a vessel shaped screen, cross bars upon which said screen is suspended in the outer vessel and forming a marginal opening between the walls of the outer vessel and the screen, and an inner lining *of incompact material, substantially* as and for the purpose described. 6th. In an electrolytic cell, the combination with an outer vessel or cathode compartment, of a vessel-shaped metallic screen supported in the outer vessel above the bottom thereof, a diaphragm of incompact material supported by said screen and forming an inner porous vessel, a layer of broken carbon supported upon said diaphragm and constituting the anode and electrodes projecting into the anode compartment, substantially as described. 7th. In an electrolytic cell, the combination with an outer vessel, of a vessel-shaped metallic screen, cross-bars supporting the same in the outer vessel and provided with flattened ends, bolts securing the edges of the screen and the ends of the cross-bars to the edges of the outer vessel, washers interposed between the cross-bars and screen and through which said bolts pass, and an inner lining of incompact material supported by the screen and dividing the outer vessel into anode and cathode compartments, substantially as described. 8th. In an electrolytic cell, the combination with a containing vessel forming a cathode compartment, a suspended diaphragm in the vessel having a lining of disintegrated material, a coating of carbon on the lining, and electrodes entering the vessel above the diaphragm, substantially as described. 9th. In an electrolytic cell, the combination of an outer vessel forming the cathode compartment, a vessel-shaped metallic screen supported in said vessel, a lining of incompact material supported by the screen and forming a porous inner vessel, a layer of broken carbon upon the incompact material forming a vessel-shaped compartment for the liquid to be electrolized and constituting the anode and carbon contained in tubular supports electrically connecting said anode with the source of electricity, substantially as described. 10th. In an electrolytic cell, the combination of the outer vessel A, the cross-bars H¹, secured in said vessel and forming a vessel shaped support with inclined curved sides and a bottom sloping towards the longitudinal centre of the tank, the metallic screen H, supported upon said cross bars, and the diaphragm G, supported by the screen and dividing the outer vessel into an anode and cathode compartment, substantially as described. 11th. In an electrolytic apparatus, the combination with a plurality of cells divided into anode and cathode compartments by an electrolytic diaphragm, of the communicating pipes RR¹, having valve-controlled connections with the opposite ends of the cathode compartments respectively, the valves T, in said communicating pipes between the connections and valve controlled feed and overflow connecting into and from said cathode compartments, substantially as described.

No. 46,752. Steam Engine. (*Machine à vapeur.*)



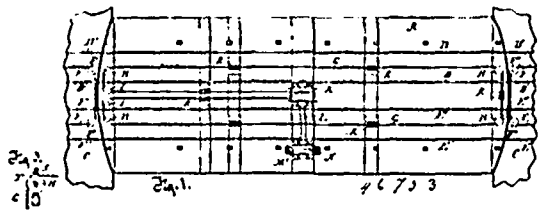
John Henry Eickershoff, Cincinnati, Ohio, U.S.A., 6th August, 1894; 6 years.

Claim.—1st. In a steam engine, a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft, taking into the slot and carrying a pair of pistons, a pair of resistance slides taking diagonally across the section of the cylinder, and balanced piston valves controlling the distribution of steam. 2nd. In a steam engine, a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft, taking into the slot and carrying a pair of pistons, a pair of self seating resistance slides, link connections between the parts of the slides and the operating mechanism, and balanced piston valves controlling the admission and exhaust of steam. 3rd. In a steam engine, a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft, taking into the slot and carrying a pair of pistons, a pair of resistance slides taking diagonally across the cylinder, a rock shaft operated from the main shaft, levers and links connecting the rock-shaft and the resistance slides, and steam tight housings enclosing the bearings for the rock

shaft, the resistance slides, the links and the levers. 4th. In a compound engine, two continuous cylinders having slots in their peripheries, plates mounted upon the shafts taking into the slots, and each carrying a pair of pistons, a pair of resistance slides taking diagonally across the cylinders, and balanced piston valves each controlling the admission of steam to the cylinders and the exhaust therefrom. 5th. In a compound engine, two continuous cylinders *having slots in* their peripheries, plates mounted upon the shafts, taking into the slots and each carrying a pair of pistons, a pair of resistance slides in each of the cylinders taking diagonally across the cylinder, and balanced piston valves each controlling the admission, expansion and exhaust of steam. 6th. In an engine, a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft, taking into the slot and carrying a pair of pistons mounted opposite each other, and a pair of resistance slides taking diagonally across the cylinder and mounted opposite each other. 7th. In an engine, the combination of a continuous cylinder, one or more pistons adapted to travel therein, one or more retractable resistance plates, an exhaust normally open, and means for closing the exhaust as the piston approaches a resistance plate, thereby balancing the pressure upon the resistance plates, substantially as set forth. 8th. The combination, in an engine of distribution valves, a shaft, a cam revolving therewith and adapted to actuate the valves, the cam having one face adapted to hold the valves in position for the admission of steam, a second adapted to hold them in place for the expansion and exhaust of steam, and a third adapted to hold them in position to shut off the exhaust, substantially as set forth. 9th. The combination in an engine of distribution valves, a shaft, a cam revolving therewith having one face adapted to hold the valves in postion for the admission of steam, a second adapted to hold them in place for the expansion and exhaust of steam, and a third adapted to hold them in position to shut off the exhaust, and a yoke connecting the distribution valves and adapted to be actuated by the cam, substantially as and for the purpose specified. 10th. The combination in an engine of distribution valves, a shaft, a cam revolving therewith having one face adapted to hold the valves in position for the admission of steam, a second adapted to hold them in place for the expansion and exhaust of steam and a third adapted to hold them in position to shut off the exhaust, a yoke connecting the distribution valves, embracing and adapted to be actuated by the cam, and a guide for the yoke, substantially as and for the purpose specified. 11th. The combination in an engine of distribution valves, a shaft, a yoke revolving therewith having one face adapted to hold the valves in position for the admission of steam, a second adapted to hold them in place for the expansion and exhaust of steam, and a third adapted to hold them in position to shut off the exhaust, a yoke connecting the distribution valves and adapted to be actuated by the cam, a movable bearing mounted on the yoke and adapted to engage with the cam, and means for adjusting the position of the bearing, substantially as and for the purpose specified. 12th. The combination in an engine of distribution valves, a shaft, a cam, a sliding yoke connecting the distribution valves, a movable bearing mounted on the yoke and adapted to engage the cam, a governor, and a connection between the governor and the movable bearing whereby the position of the bearing and distribution valves may be controlled by the governor, substantially as and for the purpose specified. 13th. The combination, in an engine of distribution valves, a connection between the valves, a cam adapted to actuate the valves, a movable bearing adapted to engage with the cam, a lever adapted to adjust the position of the bearing, a governor, a connecting-rod from the governor, and a slotted connection between the lever and the connecting-rod, substantially as and for the purpose specified. 14th. In an engine, the combination of a cam, distribution valves normally operated thereby, a governor, and connections between the governor and the distribution valves whereby the engine may receive counter steam and be reversed, substantially as and for the purpose specified. 15th. In a steam engine, the combination of a continuous cylinder having a slot in its periphery, a plate mounted upon the the shaft, taking into the slot, and carrying one or more pistons, one or more resistance plates, grooves in the shank portion of the cylinder sections, a packing in said grooves adapted to be operated by steam pressure, and composed of jointed segments, and regulating screws adapted to support the packing. 16th. In a steam engine, the combination of a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft taking into the slot and carrying one or more pistons, grooves in the shank portion of the cylinder sections, a packing in the grooves composed of segments and operated in one direction by steam pressure, and wedges securing the segments and adapted to press the packing against its other bearing, substantially as and for the purpose specified. 17th. In a steam engine, the combination of a continuous cylinder having a slot in its periphery, a plate mounted upon the shaft, taking into the slot and carrying one or more pistons, grooves d in the shank portion of the cylinder sections, a sectional packing d^1 in the grooves, grooves d^1 in the sections of the packing, grooves a^2 in the shank of the cylinder sections, wedges E adapted to take into the grooves d^1 and a^2, and means for actuating the wedges, substantially as and for the purpose specified. 18th. In a compound engine, the combination of two or more continuous piston cylinders, of different form in cross-section, having slots in their peripheries, plates mounted on the shaft taking into the slots, and carrying one or more pistons, retractable resistance for each cylinder, and a rock-shaft adapted to actuate the resistance plates, the form of the cylinders in cross-section being such that the same movement operates the resistance plates in the high and low pressure cylinders, substantially as and for the purpose specified.

No. 46,753. Cable Street Railway.

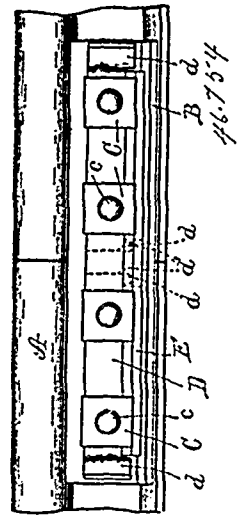
(*Cable pour chemins de fer de rue.*)



Fred Hoch, Wauwatosa, Wisconsin, U.S.A., August 6th, 1894; 6 years.

Claim.—1st. The combination with a movable bridge having two longitudinal lines of railway tracks, of an endless cable running in opposite directions between and parallel with the rails of the two tracks, small pulleys H, H, and H', H', axled in the bridge at the extremities of said parallel lines of said cable about which the cable runs, said pulleys being arranged in two sets, one set at each end of the bridge, the pulleys of each set being at a distance apart, two intermediate pulleys I, I, at one end of the bridge about which also the cable runs, idle wheels supporting the cable medially, a horizontal drum journalled in the bridge about which drum the cable runs in a loop intermediate of the pulleys I, I, one line of the cable extending from a pulley I, to the top of the drum and the other line extending from the other pulley I, to the bottom of the drum, the two lines of the cable being so disposed as not to cross or contact with each other, and means on the bridge for driving the drum, substantially as described. 2nd. The combination of a movable bridge, pulleys axled vertically therein, an endless cable running about the pulleys adapted to take cars across the bridge, and rollers T, so placed near to the pulleys as to retain the cable in place thereon when lengthened and loose on the pulleys by expansion under heat or otherwise, substantially as described.

No. 46,754. Nut Lock. (*Arrête-écrou.*)

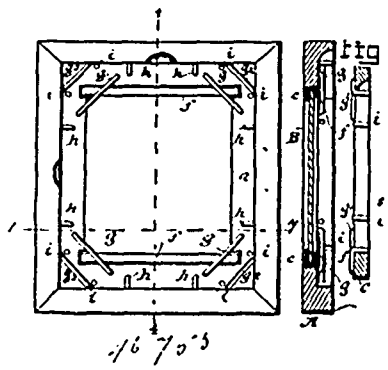


Julius C. Brown, Santa Barbara, California, U.S.A., August 6th, 1894; 6 years.

Claim.—1st. In a nut-lock, to be used in conjunction with a fish-plate and its bolts and nuts, the combination with a key-piece in the form of an angle-bar having two leaves, one of said leaves being adapted to lie behind the nuts and the other of said leaves, being adapted to fill the space between the nuts and the foot of the fish plate, and a washer having a lug adapted to engage the end of the key-piece, and prevent its longitudinal movement, substantially as described. 2nd. In a nut-lock for use in conjunction with a fish-plate and its bolts and nuts, the combination with a key-piece in the form of an angle-bar adapted to have one of its leaves lie behind the several nuts and the other of its leaves fill the space between the nuts and the foot of the fish plate, of a washer-strap apertured for the reception of the several bolts and having lugs at its ends adapted to engage the ends of the key, and prevent its longitudinal movement, substantially as described.

No. 46,755. Negative and Screen Holder.

(*Porte-négatif et écran.*)

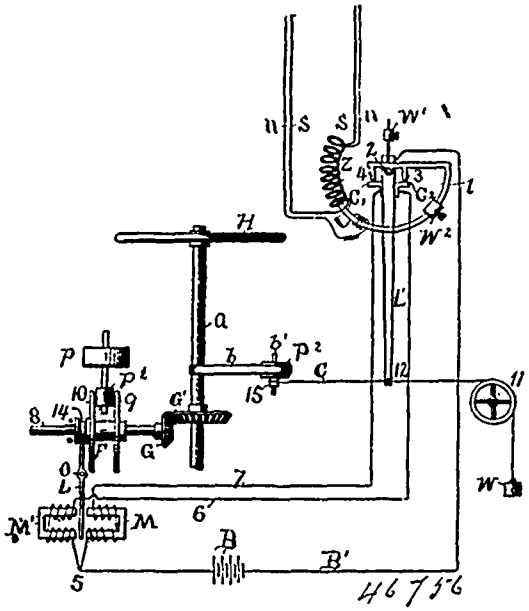


James Scouler, San Francisco, California, U.S.A., August 6th, 1894; 6 years.

Claim.—1st. The combination with a frame rabbeted on one side and provided with supports for supporting a sensitive plate in the rabbeted side of the frame, of spring buttons pivoted on the opposite side of the frame for holding a screen in this side of the frame, substantially as described. 2nd. The combination with a frame A, having one side rabbeted and provided with the recesses *b*, *c*, and with supports for a sensitive plate, of the spring buttons *c*, pivoted in the recesses *b*, and adapted to hold a screen in the frame and the cross-bars *f*, having their ends fitting in the recesses *c*, and serving to space the sensitive plate from the screen, substantially as described.

No. 46,756. Electrical Governor for Water-Wheel.

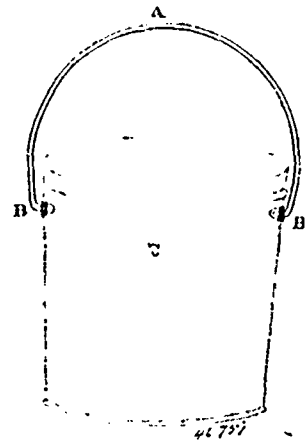
(*Gouverneur électrique pour roues d'eau.*)



Carl S. English, Lowell, Michigan, U.S.A., 6th August, 1894; 6 years

Claim.—1st. In an electrical water-wheel governor, the combination of the dynamo conductor having a coil S, a pivoted arm or needle carrying two contacts, a pivoted oscillating arm carrying contacts adapted to engage the contacts carried by said arm or needle, suitable connections between said oscillating arm and the water-wheel-gate, a circuit breaking device actuated by the movement of the gate mechanism, and means for actuating the gate operating mechanism, substantially as described. 2nd. The combination of the coils S, and the coil *n*, a needle *i*, suitable connections between said needle and the gate of the water-wheel whereby the flow of water is automatically controlled through the magnetic energy exerted from the dynamo connections, substantially as described. 3rd. The combination of the coils S and *n* the needle *i*, the swinging lever L^1, the flexible connection C, pulley P^2 with its hub 15, the weight W, a battery, electro magnets, conductors connecting said magnets and battery, circuit closing devices actuated by the needle for closing the circuit through either of said magnets, an armature actuated by said magnets, and gearing for actuating a water-gate controlled by said armature, substantially as described. 4th. The combination of the coils S and *n*, the needle provided with contact points for opening and closing the electric current, the battery B, the electro-magnets M^1 and M, suitable coils thereon, connections between such coils and battery, an armature as 11, shifting device as F, provided with friction discs 9 and 10, revolving pulley P^1, and suitable mechanism connecting the shaft of F to the water-wheel, substantially as described. 5th. The combination of the coil of the dynamo, a needle turning upon a pivot having contact points adapted to open and close an electric current, a battery as B, electro-magnets as M and M^1, suitable conductors extending from said electro-magnets to said battery whereby the current may be directed through either one or the other of said electro-magnets at pleasure, lever armature as 11, a shifting mechanism as F, operated by means of a pulley as P, suitable mechanism connecting said shifting mechanism F, with the gate of the water-wheel, a band as *b*, pulley P^2, lever L, flexible connection C, and weight W, all constructed substantially as and for the purpose described.

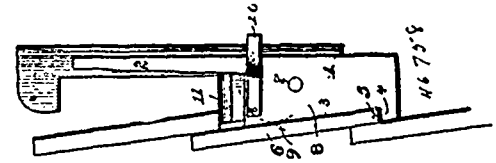
No. 46,757. Pail. (*Seau.*)



David Macdonald and William T. Tassie, both of Toronto, Ontario, Canada, 6th August, 1894; 6 years.

Claim.—As a new article of manufacture, a pail having thimbles B, B firmly secured thereto, into which is sprung the wire handle A, substantially as and for the purpose described.

No. 46,758. Siding Gage. (*Jauge.*)



Thomas L. Wint, Kalb, and Samuel J. T. Young, of Camden, both of South Carolina, U.S.A., 6th August, 1894; 6 years.

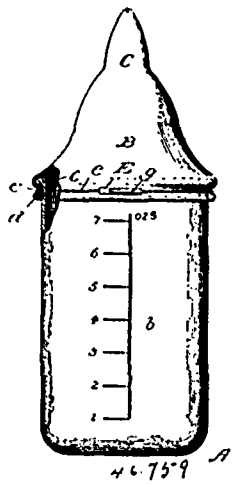
Claim.—In a weather board or siding gage, the combination of a body-portion provided at its lower end with a spurred shoulder to engage the lower edge of a fixed board, an adjustable rest having its upper end arranged above said spurred shoulder and adapted to support the board which is being applied, a pivoted retaining arm having its pivotal lower end arranged between the planes of the spurred shoulder and the upper end of said rest provided adjacent to said pivotal end with a spurred head to engage the surface of the fixed board, said arm extending above the upper end of the rest when in its normal or operative position to prevent diplacement of the lower edge of the board which is supported on the rest, and a shouldered spring catch to engage and hold said arm in its upright or operative position, substantially as specified.

No. 46,759. Nursing Bottle. (*Biberon.*)

William M. Decker, Kingston, New York, and Elihu Bunker, New Bedford, Massachusetts, both in the U.S.A., 6th August, 1894; 6 years.

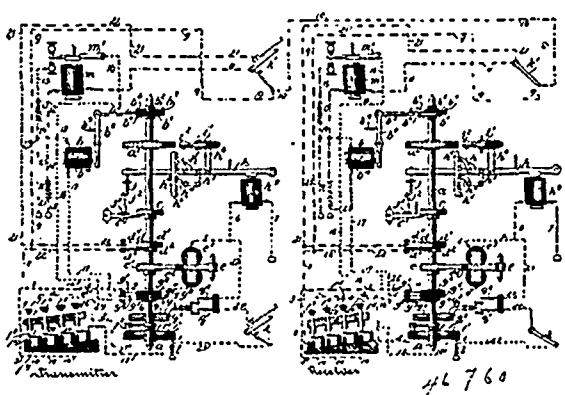
Claim.—1st. A nursing device consisting of a cell or receptacle having substantially an uncontracted and open upper portion closed by an elastic breast of dome-shaped form, terminating at its apex in a perforated nipple, substantially as and for the purposes set forth. 2nd. In a nursing device, the combination, with a receptacle having an uncontracted open upper end and an elastic dome-shaped cover terminating at its apex in a dome-shaped nipple, of a clamping device

for the cover consisting of a pliable band and a locking bar pivoted in a slot of the link and attached by its inner end to the other end of the band, substantially as described. 3rd. As a new article of



manufacture, a cover for a nursing cell or food receptacle, consisting of an elastic dome-shaped breast open at its base and adapted to embrace the cell, and terminated near its upper portion and made integral with a perforated nipple, substantially as and for the purpose set forth.

No. 46,760. Printing Telegraph. *(Télégraphe imprimant.)*



The Fowden Printing Telegraph Company, Trenton, New Jersey, assignee of Robert Ashworth Fowden, Philadelphia, Pennsylvania, all in the U.S.A., 6th August, 1894; 6 years.

Claim.—A printing telegraph system, comprising relay electro-magnets adapted to control local motor circuits at the transmitter and receiver and responding to makes and breaks in a line circuit, and a revoluble circuit maker and breaker interposed in the conductor of said line circuit and mounted on the transmitter type-wheel shaft, substantially as and for the purposes set forth. 2nd. A printing telegraph system, comprising relay electro-magnets interposed in the line circuit and adapted to control the local motor circuits at the transmitter and receiver, a conducting disc and a disc having peripheral insulations alternating with contacts in electrical connection with the conducting disc mounted on the transmitter type-wheel shaft, and contact springs bearing on said discs and interposed in the line circuit, substantially as and for the purposes set forth. 3rd. A printing telegraph system, comprising a transmitter and receiver having motors responding to makes and breaks in a line circuit, and a revoluble circuit maker and breaker interposed in the conductor of said line circuit and mounted on the transmitter type-wheel shaft, substantially as and for the purpose set forth. 4th. A printing telegraph system, comprising a transmitter and receiver provided with motors responding to makes and breaks in a normal line circuit, a conducting disc and a disc having peripheral insulations alternating with contacts in electrical connection with the conducting disc mounted on the transmitter type-wheel shaft, and contact springs bearing on said discs and interposed in the line circuit, substantially as and for the purposes set forth. 5th. A printing telegraph system comprising motors at each instrument responding to makes and breaks in line produced by the revolution of a circuit maker and breaker interposed in the line conductor and mounted on the type-wheel shaft at the transmitter, a local printing circuit and devices independent of the line circuit for effecting an impression and arresting the type-wheel shaft at the transmitter, whereby the motor at the receiver is caused to arrest its type-wheel shaft, and a local printing circuit at the receiver controlled by a ratchet-switch and adapted to effect an impression upon the arrest of the type-wheel shaft of the receiver, substantially as and for the purposes set forth. 6th. A printing telegraph system comprising motors at each instrument responding to makes and breaks in line produced by a circuit interrupter interposed in the line conductor and mounted on the receiver type-wheel shaft, and a local printing circuit and device independent of the line circuit for effecting an impression and arresting the circuit interrupter at the transmitter, whereby the motor at the receiver is caused to arrest its type-wheel shaft, substantially as and for the purposes set forth. 7th. A printing telegraph system provided at each instrument with a relay electro-magnet controlling the local circuits of motor electro-magnets, and responding to makes and breaks in line produced by the revolution of a circuit interrupter interposed in line and mounted on the type-wheel shaft at the transmitter, a local printing circuit and devices independent of the line circuit for effecting an impression and arresting the type-wheel shaft at the transmitter, whereby the relay electro-magnet at the receiver causes the arrest of its motor and type-wheel shaft, and a local printing circuit at the receiver controlled by a ratchet-switch and adapted to effect an impression upon the arrest of the type-wheel shaft of the receiver, substantially as and for the purposes set forth. 8th. A printing telegraph system comprising a relay electro-magnet adapted to control local motor circuits at each instrument and responding to makes and breaks in line produced by a circuit interrupter interposed in the line conductor and mounted on the type-wheel shaft of the transmitter, and a local printing circuit and devices independent of the line circuit for effecting an impression and arresting the type-wheel shaft and circuit interrupted at the transmitter, whereby the occurrence of makes and breaks in line is checked and the motor at the receiver is caused to arrest its type-wheel shaft, and a local printing circuit at the receiver and adapted to effect an impression upon the arrest of the type-wheel shaft of the receiver, substantially as and for the purposes set forth. 9th. A printing telegraph system comprising a receiver and transmitter normally operated by motors responding to makes and breaks produced in line by ths revolution of the type-wheel shaft of the transmitter, a local printing circuit and devices operating by the depression of a key at the transmitter to effect an impression and arrest the type-wheel shaft before the completion of the stroke of the transmitter motor and before the line circuit is made or broken, whereby the motor at the receiver arrests its type-wheel shaft and effects an impression through the intervention of a local printing circuit controlled by the revolution of the receiver type-wheel shaft and whereby the motors of both instruments are permitted to again start upon the release of the key and by the completion of the partial stroke of the transmitter motor, substantially as set forth. 10th. A printing telegraph system comprising a receiver and a transmitter normally operated by motors and local motor circuits controlled by relay electro-magnets responding to makes and breaks produced in line by a circuit interrupter on the type-wheel shaft of the transmitter, a local printing circuit and devices operating by the depression of a key at the transmitter to effect an impression and arrest the type-wheel shaft before the completion of the stroke of the transmitter motor and before the circuit interrupter makes and breaks the line circuit, whereby the relay electro-magnet at the receiver, acting through its local motor circuit, causes the motor to arrest the receiver type-wheel shaft, and whereby the motors of both instruments are permitted to again start upon the release of the key and by the completion of the partial stroke of the transmitter motor, substantially as set forth. 11th. A printing telegraph system comprising a receiver and a transmitter normally operated by motors responding to makes and breaks produced in line by a circuit interrupter on the type-wheel shaft of the transmitter, a local printing circuit and devices operating by the depression of a key at the transmitter to effect an impression and arrest the type-wheel shaft before the completion of the stroke of the transmitter motor and before the circuit interrupter makes or breaks the line circuit, whereby the motor at the transmitter is arrested and arrests its type-wheel shaft, and whereby the motors of both instruments are permitted to again start upon the release of the key and by the completion of the partial stroke of the transmitter motor, substantially as set forth. 12th. A printing telegraph system comprising a transmitter and a receiver each having an electro-motor adapted to drive a type-wheel shaft and responding to makes and breaks in the normal line circuit produced by a circuit interrupter at the transmitter and each having a unison latch adapted to arrest its type-wheel shaft with the retracting spring of the motor thereof in tension and with the circuit interrupter in position for breaking the normal line circuit, whereby the motors are adapted to start under the influence of their retracting springs and by the release of the type-wheel shafts, substantially as set forth. 13th. A printing telegraph system comprising a transmitter, and a receiver each having a relay electro-magnet responding to makes and breaks in the normal line circuit produced by an interrupter on the type-wheel shaft of the transmitter, a motor operating the driving shaft and controlled by the armature lever of said relay electro-magnet through circuit connections, and a unison latch adapted to arrest its type-wheel shaft with the retracting spring of the motor in tension, and with the circuit interrupter in position for breaking the normal

line circuit, whereby the motors are permitted to start under the influence of their retracting springs, and by the release or the type-wheel shafts, substantially as and for the purposes set forth. 14th. A printing telegraph system, comprising a transmitter and a receiver, and each provided with a motor responding to makes and breaks in a line circuit and adapted to drive the type-wheel shaft, a unison device for locking the type-wheel shaft in such position that the retracting spring of the motor tends to start it, a detent for locking said shaft, magnets for operating said unison latch and detent, a revoluble switch actuated by the type-wheel shaft and adapted to cut out the line circuit and include the local unison position of the shaft, a double contact unison key at the transmitter for controlling the local printing circuit to release said unison device and lock and unlock the transmitter type-wheel shaft and for controlling the unison line circuit to release said unison device and lock and unlock the receiver type-wheel shaft through the intervention of a relay electro magnet and a local circuit, substantially and for the purposes set forth. 15th. A printing telegraph system, comprising a single line conductor adapted to be inclined in a line circuit and in a unison line circuit, a transmitter and a receiver normally operated by motors responding to makes and breaks in the line circuit and provided with means for automatically closing the unison line circuit through said conductor at the unison position and for closing the line circuit through said conductor at other positions, local motor circuits at each instrument, a local printing circuit and devices controlled by a key at the transmitter, a local printing circuit and devices controlled by the type-wheel shaft at the receiver, a local unison circuit and devices controlled by a unison key at the transmitter, a locoal unison circuit and devices controlled by a relay armature lever and an automatic switch on the type-wheel shaft at the receiver, substantially as and for the purpose set forth. 16th. In a printing telegraph system, a single line conductor adapted to be included in a line circuit and in a unison line circuit, combined transmitters and receivers normally operated through relay electro-magnets controlling the local circuits of motors and responding to makes and breaks in said line circuits and provided respectively with two sets of local unison and printing circuits and devices, automatic switches mounted on the type-wheel shafts and adapted to include one set of local circuits at unison position and the other set at other positions, and manual switches for changing the circuits to cause the instruments to operate as transmitters and receivers, substantially as and for the purposes set forth. 17th. A printing telegraph system comprising a receiver and a transmitter having unison and locking electro-magnets and devices, a relay electro-magnet at the receiver adapted to control a local unison circuit through its armature lever and through the coils of the unison and the locking electro-magnets at the receiver, a double contact unison key adapted to close a local unison circuit through the coils of the unison and locking electro-magnets of the transmitter and to close a unison line circuit through the coils of the relay electro-magnet at the receiver, substantially as and for the purposes set forth. 18th. A printing telegraph system comprising a receiver and a transmitter having unison and locking electro-magnets and devices, a relay electro-magnet at the receiver adapted to control a local unison circuit through its armature lever and through the coils of the unison and of the locking electro-magnets at the receiver, a double contract unison key adapted to close one branch of the circuit through the coils of the unison and locking electro-magnets of the transmitter and to close the other branch through a resistance and through the coils of the relay electro-magnet at the receiver, substantially as and for the purposes set forth. 19th. In a printing telegraph system, a transmitter provided with a line circuit maker and breaker mounted on its type-wheel shaft and with a locking electro-magnet and its devices for arresting the type-wheel shaft and its line circuit maker and breaker, a local circuit through the coils of said electro-magnet, and a unison key and character keys and their accessories adapted to make and break said local circuit to stop and release the type-wheel shaft and cause the circuit maker and breaker to suspend the makes and breaks in line, substantially as and for the purposes set forth. 20th. In a printing telegraph system, a receiver provided with a locking and a unison electro-magnet, a local circuit through the coils of said magnets and adapted to be made and broken by the armature lever of a relay magnet responding to makes and breaks in line, and a revoluble switch mounted on the receiver type-wheel shaft and adapted to close said local circuit through the locking and unison magnets only at unison position, substantially as and for the purposes set forth. 21st. In a printing telegraph system, a transmitter provided with a local printing circuit independent of the line circuit, keys and a type-wheel shaft locking magnet interposed in said local circuit, a receiver provided with a local printing circuit and its accessories and adapted to automatically effect printing upon the arrest of the receiver type-wheel shaft, and electrical and mechanical devices and circuits independent of the local circuits and keys and operating upon the arrest of the transmitter type-wheel shaft to stop the motor of the receiver type wheel shaft, substantially as and for the purposes set forth. 22nd. In a printing telegraph system, an instrument provided with a switch tending to close a local printing circuit and restrained from such action by the movement of said instrument and at unison position, substantially as and for the purposes set forth. 23rd. In a printing telegraph instrument, a locking electro-magnet for arresting the type-wheel shaft, a printing and unison electro-magnet, a local circuit having one branch controlled by keys and adapted to be closed through the coils of both of said magnets, and having the other branch controlled by a switch tending to close it through the printing electro-magnet and restrained from such action by the movement of the instrument, and a manual switch for opening and closing the second branch circuit to permit of the operation of the instrument as a receiver or transmitter, substantially as and for the purposes set forth. 24th. A printing telegraph system having a combined transmitting and receiving instrument provided with a switch tending to close a local circuit and restrained from such action by the actuation of said instrument, and means for automatically restraining such action of the switch at unison position, substantially as and for the purposes set forth. 25th. A printing telegraph system having a combined transmitting and receiving instrument, means tending to close a local printing circuit and restrained from such action by the actuation of said instrument, means, substantially as described, for restraining such action of the switch at the unison position, and means adapted to open and close said local circuit to permit of its actuation either as a transmitting or as a receiving instrument, substantially as and for the purposes set forth. 26th. A printing telegraph provided with an instrument having a ratchet-switch tending to close a local printing circuit and restrained from such action by the rotation of a toothed wheel and means for restraining such action of the switch at unison position, substantially as and for the purposes set forth. 27th. A printing telegraph provided with an instrument having a ratchet switch tending to close a local printing circuit at positions other than unison and normally restrained from such action by the rotation of a toothed wheel, and a manual-switch for opening and closing said local circuit to permit of the operation of the instrument as a receiver or as a transmitter, substantially as and for the purposes set forth. 28th. A printing telegraph provided with an instrument having a pivotal-switch tending to close a local printing circuit through its contacts at positions other than unison and restrained from such action by the movement of the instrument, substantially as and for the purposes set forth. 29th. A printing telegraph provided with an instrument having a pivotal switch tending to close a local printing-circuit through its contacts at positions other than unison and restrained from such action by the movement of the instrument, and a manual switch for opening and closing said local circuit to permit of the operation of the instrument as a receiver or as a transmitter, substantially as and for the purposes set forth. 30th. A printing telegraph provided with a toothed wheel moving with a type-wheel shaft and a ratchet-switch controlling a local printing circuit and riding over the teeth of said wheel as the shaft is rotated and entering a space between said teeth upon the arrest of the shaft at positions other than unison, substantially as and for the purposes set forth. 31st. A printing telegraph provided with a toothed wheel moving with a type-wheel shaft and a ratchet switch controlling a local printing circuit and riding over the teeth of said wheel as the shaft is rotated and entering a space between said teeth upon the arrest of the shaft at positions other than unison, and a manual-switch for opening and closing said local circuit to permit of the operation of the instrument as a receiver and transmitter, substantially as and for the purposes set forth. 32nd. A printing telegraph provided with a toothed wheel moving with a type wheel shaft and a pivotal ratchet-switch, whereof one end is provided with contacts controlling a local printing circuit and whereof the other end rides over the teeth of said wheel as the shaft is rotated and enters a space between the said teeth upon the arrest of the shaft at positions other than unison, substantially as and for the purposes set forth. 33rd. A printing telegraph provided with a toothed wheel moving with a type-wheel shaft and a pivotal ratchet switch, whereof one end is provided with contacts controlling a local printing circuit, and whereof the other end rides over the teeth of said wheel as the shaft is rotated and enters a space between said teeth upon the arrest of the shaft at positions other than unison, and a manual-switch for opening and closing said local circuit to permit of the operation of the instrument as a receiver and transmitter, substantially as and for the purposes set forth. 34th. The combination, of a revoluble wheel provided with teeth, and a ratchet-switch tending to enter the spaces between said teeth at positions other than unison and normally restrained from such action by the revolution of the wheel, substantially as and for the purposes set forth. 35th. The combination, of a revoluble wheel and a pivotal switch tending to engage with said wheel at positions other than unison and normally restrained from such action by the revolution of the wheel, substantially as and for the purposes set forth. 36th. The combination, of a revoluble wheel provided with teeth and a pivotal switch, whereof one end is provided with contacts and the other end tends to enter the spaces between said teeth at positions other than unison, normally restrained from such action by the revolution of said wheel, substantially as and for the purposes set forth. 37th. A printing telegraph provided with a wheel having a series of teeth and a comparatively wide tooth, a ratchet-switch controlling a local printing circuit and tending to enter a space between said teeth upon the arrest of the wheel and restrained from such movement at the unison position by the wide tooth, and a manual switch for opening and closing said local circuit, substantially as and for the purposes set forth. 38th. A printing telegraph provided with a wheel having a series of teeth and a comparatively wide tooth, and a pivotal

ratchet-wheel controlling a local printing circuit and tending to enter the spaces between said teeth upon the arrest of the wheel and restrained from such movement at the unison position by the wide tooth, substantially as and for the purposes set forth. 39th. A printing telegraph provided with a wheel actuated by a type-wheel shaft and having a wide tooth, a pivotal ratchet-switch controlling a local printing circuit and tending to enter the spaces between said teeth upon the arrest of the shaft and restrained from such movement at the unison position of the shaft by the wide tooth, substantially as and for the purposes set forth. 40th. A printing telegraph provided with a toothed wheel actuated by a type-wheel shaft and having a wide tooth, a pivotal ratchet switch controlling a local printing circuit and tending to enter the spaces between the teeth of said wheel upon the arrest of the shaft and restrained from such movement at the unison position of the shaft by the wide tooth, and a manual-switch for opening and closing said local-circuit, substantially as and for the purposes set forth. 41st. A printing telegraph provided with a wheel having a series of teeth and a comparatively wide tooth, and a ratchet-switch controlling a local printing circuit and tending to enter the spaces between said teeth upon the arrest of the wheel and restrained from such movement at the unison position by the wide tooth, substantially as and for the purposes set forth. 42nd. A printing telegraph provided with a wheel actuated by a shaft and having a wide tooth, and a ratchet-switch controlling a local circuit and tending to enter spaces between said teeth upon the arrest of the shaft and restrained from such movement at a certain position of the shaft by the wide tooth, substantially as and for the purposes set forth. 43rd. The combination of a revoluble wheel provided with small teeth and one wide tooth, and a switch tending to enter spaces between said small teeth and restrained at a certain position by the wide tooth, substantially as and for the purposes set forth. 44th. The combination, of a normally revolving shaft provided with a type-wheel, means for arresting said shaft with the divisions of the type-wheel at the printing position, mechanical and electrical devices and a local printing circuit, a wheel on said shaft provided with recesses in alignment with the characters of the type-wheel, and a ratchet-switch controlling the local circuit and engaging said recesses upon the arrest of said shaft at positions other than unison, substantially as and for the purposes set forth. 45th. The combination, of a normally revoluble shaft provided with a type-wheel having characters and a blank space, means for arresting said shaft with the divisions of the type-wheel in the printing position, mechanical and electrical devices, a local printing circuit, a wheel on said shaft provided with recesses in alignment with the characters on the type-wheel and with a projection in alignment with the blank space, and a ratchet-switch controlling said local circuit and adapted to enter said recesses and to rest on said projection, substantially as and for the purposes set forth. 46th. A printing telegraph having an armature-lever provided with printing, feeding and unison latch actuating devices and having an electro-magnet, and local circuit connections independent of the line circuit and controlled by keys at the transmitter and by a ratchet-wheel having a wide tooth at the receiver, substantially as and for the purposes set forth. 47th. In a printing telegraph, a pivotal spring printing lever having at its free end a printing pallet an armature-lever provided with an arm having an enlarged extremity to engage a projection on said printing lever to actuate said pallet under the influence of the spring, and an electro-magnet and circuit connections for actuating said armature-lever, substantially as and for the purpose set forth. 48th. In a printing telegraph, a spring controlled unison-latch, a system of levers for operating said latch, a printing and paper feeding armature lever provided with a wedge in sliding engagement with one of said levers, and an electro-magnet and circuit connections for actuating said armature-lever, substantially as and for the purposes set forth. 49th. In a printing telegraph, a spring controlled unison-latch, a system of levers for operating said latch, an armature-lever actuating printing devices and provided with a wedge in sliding engagement with one of said levers, and an electro-magnet and circuit connections for actuating said armature-lever, substantially as and for the purposes set forth. 50th. In a printing telegraph, a spring controlled unison-latch, a system of levers for operating said latch, a pivotal printing hammer, an armature-lever provided with an arm having a projection in range of a rod on the printing-hammer and with a wedge for operating the system of levers, and an electro-magnet and circuit connections for actuating said armature-lever, substantially as and for the purposes set forth. 51st. In a printing telegraph, a spring controlled unison-latch, a system of levers for operating said latch, a pivotal printing-hammer, an armature-lever provided with pawl and ratchet connections for feeding a paper-carriage and with a wedge for operating the system of levers, a projection on said armature lever disposed in range of a rod on the printing-hammer, and an electro-magnet for actuating said armature-lever, substantially as and for the purposes set forth. 52nd. In a printing telegraph, a spring controlled unison-latch, a bell crank lever having one arm in range of said latch, a pivotal lever having one arm in range of the bell crank lever, a paper feeding and printing armature lever provided with a wedge in sliding contact with the pivotal lever, and an electro-magnet and circuit connections for actuating said armature-lever, substantially as and for the purposes set forth. 53rd. The combination, in a printing telegraph, of a pivotal printing-hammer, a unison-latch, an armature-lever provided with a projection for operating the printing-hammer and with a wedge for operating link-work engaging the unison-latch, an electro-magnet and local printing circuit for operating said armature-lever, a normally rotating wheel provided with teeth, and a ratchet switch controlling said local circuit and adapted to enter spaces between the teeth of said wheel, substantially as and for the purposes set forth. 54th. The combination, in a printing telegraph, of a type-wheel shaft provided with a type-wheel and a toothed wheel, means for normally rotating said shaft, a pivotal printing-hammer, a unison-latch, an armature-lever provided with a projection for operating the printing-hammer and with a wedge for operating link-work engaging the unison-latch, an electro-magnet and a local printing circuit for orperating said armature-lever, and a ratchet-switch controlling said local circuit and adapted to enter spaces between the teeth of said wheel, substantially as and for the purposes set forth. 55th. The combination, in a printing telegraph, of a shaft provided with a type-wheel and a toothed-wheel, means for normally rotating and arresting said shaft, a pivotal printing-hammer, a unison-latch, an armature-lever provided with a projection for operating the printing-hammer, and with a wedge for operating link-work engaging the unison-latch, pawls actuated by said armature-lever and adapted to feed a paper-carriage, an electro-magnet and local printing circuit for operating said armature-lever, and a pivotal ratchet-switch controlling said local circuit and adapted to enter spaces between the teeth of said wheel, substantially as and for the purposes set forth. 56th. The combination, in a printing telegraph receiver, of a type-wheel shaft provided with a toothed wheel and with a type-wheel, a motor responding to makes and breaks in a normal line circuit and adapted to rotate and check said shaft, a pivotal printing-hammer, a unison-latch, an armature-lever provided with a projection for operating the printing-hammer and with a wedge for operating link-work engaging the unison-latch, an electro-magnet and local printing circuit for operating said armature-lever, and a ratchet-switch controlling said local circuit and adapted to enter spaces between the teeth of said wheel, substantially as and for the purposes set forth. 57th. The combination, in a printing telegraph, of a type-wheel shaft provided with a type-wheel and a toothed wheel, means for normolly rotating said shaft, a pivotal printing-hammer having a spring shank, an armature-lever provided with a projection for operating the printing-hammer, an electro-magnet and local printing-circuit for operating said armature-lever, and a ratchet-switch controlling said local-circuit and adapted to enter spaces between the teeth of said wheel at positions other than unison, substantially as and for the purposes set forth. 58th. The combination, in a printing telegraph, of a type-wheel shaft provided with a toothed-wheel and a type-wheel having characters disposed in alignment with the spaces of the toothed-wheel, and having a blank space in alignment with a tooth of said wheel, means for normally rotating and arresting said shaft, a pivotal printing-hammer, a unison-latch, an armature-lever provided with a projection in range of a rod connected with the printing-hammer, an electro-magnet and local printing circuit for operating said armature lever, and a pivotal ratchet-switch whereof one end controls said local circuit, and whereof the other end is adapted to enter spaces between the teeth of said wheel at positions other than unison, substantially as and for the purposes set forth. 59th. A printing telegraph provided with a sunflower device comprising a conducting annulus, and an annulus having conducting and insulating segments, an insulated brush sweeping over each annulus, circuit connections from earth through a generator to the conducting annulus and through the brush and conducting segments to character keys controlling a local printing circuit and devices, and to a double contact unison key controlling said local printing circuit and a unison line circuit, substantially as and for the purpeses set forth. 60th. A printing telegraph provided with a sunflower device comprising a conducting annulus, and an annulus having conducting and insulating segments, an insulated brush sweeping over each annulus, circuit-connections from earth through a generator to the conducting annulus and through the brush and conducting segments to character keys controlling a local printing circuit and devices, and to a double contact unison-key controlling said local printing circuit and devices and a unison line circuit and devices, and a high resistance interposed in the unison line circuit, substantially as and for the purposes set forth. 61st. A printing telegraph provided with a sunflower device, comprising a conducting annulus and an annulus having conducting and insulating segments, an insulated brush sweeping over each annulus, circuit connections from earth through a generator to the conducting annulus and through the brush and unison conducting segment to a double contact unison key controlling a local printing circuit and devices and to a unison line circuit, substantially as and for the purposes set forth. 62nd. A printing telegraph provided with a sunflower device comprising a conducting annulus and an annulus having conducting and insulating segments, an insulated brush sweeping over each annulus, circuit connections from earth through a generator to the conducting annulus and through the brush and unison conducting segments to a double contact unison key controlling a local printing circuit and devices, and a unison line circuit and devices and a high resistance interposed in the unison line circuit, substantially as and for the purposes set forth. 63rd. The combination, in a printing telegraph, of a sunflower-device comprising a conducting annulus and an annulus having conducting and insulating segments and connections, local printing circuit connections from

earth through a generator to the conducting annulus through the contacts of a ratchet switch, the coils of a locking electro-magnet, and the coils of a printing and unison electro-magnet to earth, substantially as and for the purposes set forth. 64th. The combination, in a printing telegraph, of a sunflower device comprising a conducting annulus and an annulus having conducting and insulating segments and connections, local printing circuit connections from earth through a generator to the conducting annulus, the contacts of a ratchet-switch and coils of a locking electro-magnet and a printing and unison electro magnet to earth, and a manual-switch for controlling the local printing circuit, substantially as and for the purpose set forth. 65th. A printing telegraph provided with a motor and its local circuit, a printing and a unison electro-magnet, a local circuit controlled by the armature-lever, of a relay electro-magnet interposed in line and a three-way revoluble switch moving with the type-wheel shaft and adapted to interrupt the motor local circuit and to close the armature-lever local circuit only at unison position and adapted to close the motor local circuit and interrupt the armature lever local circuit at positions other than unison, substantially as and for the purposes set forth. 66th. A printing telegraph provided with a three-way revoluble switch having its conducting parts in electrical communication and comprising a conducting disc, an insulating disc having a conducting segment in alignment with a blank space on the type-wheel and a conducting disc having a similarly disposed insulating segment, a contact spring riding over the conducting disc and interposed in a local circuit, a contact spring riding over the conducting disc having an insulating segment and interposed in the local motor circuit, and a contact spring riding over the insulating disc having an insulating segment and interposed in the local printing circuit, substantially as and for the purposes set forth. 67th. A printing telegraph provided with a circuit interrupter moving with the type-wheel shaft and adapted to control electro-motors at the respective instruments, a spur-wheel mounted on said shaft, a detent for engaging said spur-wheel and arresting the circuit interrupter just before its contact passes off the segment over which it is traveling, whereby the transmitter motor is arrested before the completion of its stroke, substantially as and for the purposes set forth. 68th. The combination of a revolving shaft provided with a type-wheel having characters and a blank space, means for arresting said shaft with the divisions of the type-wheel in the printing position, mechanical and electrical printing devices, a local printing circuit, a wheel on said shaft provided with recesses in alignment with the characters on the type-wheel and with a projection in alignment with the blank space, means for controlling said local circuit and adapted to enter said recesses at positions other than unison and to engage with said projection at unison position, substantially as and for the purposes set forth. 69th. A printing telegraph provided with a type wheel shaft having two conducting discs, whereof one is provided with insulated segments alternating with conducting segments, a spur-wheel mounted on said shaft, a detent for engaging said spur-wheel and arresting said disc, double contact springs interposed in a line circuit controlling an electro-motor at each instrument, and means for adjusting one of said springs, substantially as and for the purposes set forth. 70th. The combination, in a printing telegraph, of a type-wheel shaft provided with a ratchet and a stop wheel, a reciprocating bar slotted for the accommodation of said shaft and provided at the sides of said slot with spring controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop-wheel, pawls and detents co-operating with said wheel, a spring-controlled armature-lever connected with said bar, an electro-magnet responding to makes and breaks in line produced by a circuit breaker and closer on the transmitter type-wheel shaft and a ratchet-switch controlled by a toothed-wheel on said shaft and adapted to make and break a local printing circuit, substantially as and for the purposes set forth. 71st. The combination, in a printing telegraph, of a type-wheel shaft provided with a ratchet and a stop-wheel a reciprocating-bar slotted for the accommodation of said shaft and provided at the sides of said slot with spring controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop wheel with pawls and detents co-operating with said wheel, a spring controlled armature-lever connected with said bar and actuated by a motor electro-magnet and circuit, a relay electro-magnet controlling said local circuit through its armature-lever and responding to makes and breaks in line produced by a circuit breaker and closer on the transmitter type-wheel shaft and a ratchet-switch controlled by a toothed-wheel on said shaft and adapted to make and break a local printing circuit, substantially as and for the purpose set forth. 72nd. The combination, in a printing telegraph, of a receiver and a transmitter, each having a type-wheel shaft provided with a ratchet and a stop-wheel, a reciprocating bar slotted for the accommodation of said shaft and provided at the sides of said slot with spring controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop-wheel, pawls and detents co-operating with said wheels, a spring controlled armature-lever connected with said bar and an electro-magnet responding to makes and breaks in line, a ratchet-switch at the receiver controlled by a toothed-wheel on the receiver type-wheel shaft and adapted to make and break a local printing circuit, and a circuit interrupter mounted on the type-wheel shaft of the transmitter and interposed in the line circuit, substantially as and for the purposes set forth. 73rd The combination, in a printing telegraph, of a receiver and a transmitter each having a type-wheel shaft provided with a ratchet and a stop-wheel, a reciprocating bar provided with pawls and detents co-operating with said wheels, a spring controlled armature-lever connected with said bar and actuated by a motor electro magnet and circuit, a relay electro-magnet controlling said local circuit through its armature-lever and responding to makes and breaks in line, a ratchet-switch at the receiver controlled by a toothed wheel on the receiver type-wheel shaft and adapted to make and break a local printing circuit, and circuit interrupter mounted on the type-wheel shaft of the transmitter and interposed in the line circuit, substantially as and for the purposes set forth. 74th. A printing telegraph having an instrument provided with a ratchet and a stop-wheel, a reciprocating bar having pawls and detents co operating with said wheels, a spring controlled armature-lever connected with said bar, a relay electro-magnet responding to makes and breaks in line and controlling through its front stop the local circuit of the magnet appertaining to the spring controlled armature lever and a ratchet switch controlled by a toothed wheel on said shaft and adapted to make and break a local printing circuit, a circuit interrupter interposed in line, and a manual-switch interposed in the local printing-circuit, substantially as and for the purposes set forth. 75th. The combination, in a printing telegraph, of a type-wheel, a type-wheel shaft provided with a ratchet and a stop-wheel, a reciprocating-bar provided with pawls and detents co-operating with said ratchet and stop-wheels, a spring controlled armature-lever connected with said bar, a motor electro-magnet responding to makes and breaks in line, a pivotal printing-hammer, a printing electro-magnet provided with an armature lever having a projection for actuating the printing-hammer, and a ratchet-switch controlled by a toothed-wheel on said shaft and adapted to make and break the local circuit through the coils of the printing electro-magnet, substantially as and for the purposes set forth. 76th. The combination, in a printing telegraph, of a type-wheel, of a type-wheel shaft provided with a ratchet and a stop-wheel, a reciprocating bar provided with pawls and detents co-operating with said ratchet and stop wheels, a spring controlled armature-lever connected with said bar, a motor electro-magnet, a relay electro-magnet responding to makes and breaks in line and controlling through its armature-lever the local circuit of the motor electro-magnet, a pivotal printing-hammer, a printing electro-magnet provided with an armature-lever having a projection for actuating the printing hammer, and a ratchet-switch controlled by a toothed-wheel on said shaft and adapted to make and break said local circuit through the coils of the printing electro-magnet, substantially as and for the purposes set forth. 77th. The combination, in a printing telegraph, of a type-wheel shaft provided with a unison spiral and with ratchet and stop-wheels, a reciprocating-bar provided with pawls and detents co-operating with said ratchet and stop-wheels, a spring controlled armature-lever connected with said bar, a motor electro-magnet responding to makes and breaks in line, and a unison latch adapted to arrest said shaft in position for maintaining the spring of the armature-lever in tension, substantially as and for the purposes set forth. 78th. The combination, in a printing telegraph, of a type wheel shaft provided with a unison spiral and with ratchet and stop wheels, a reciprocating-bar provided with pawls and detents co-operating with said ratchet and stop-wheels, a spring controlled armature lever connected with said bar, a motor electro-magnet disposed in a local motor circuit controlled through the armature-lever of a relay electro-magnet responding to makes and breaks in line, and a unison latch adapted to arrest said shaft in position for maintaining the spring of the armature-lever in tension, substantially as and for the purposes set forth. 79th. The combination, in a printing telegraph, of printing mechanism, a paper-carriage, a type-wheel shaft provided with a unison spiral and with ratchet and stop-wheels, a reciprocating-bar slotted for the accommodation of said shaft and provided at the sides of said slot with spring controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop-wheel, a spring controlled armature-lever connected with said bar, a motor electro-magnet responding to makes and breaks in line produced by a circuit maker and breaker on the transmitter type-wheel shaft, a printing and unison electro-magnet and circuit connections having an armature-lever provided with devices for actuating the unison-latch, printing mechanism and paper carriage, substantially as and for the purposes set forth. 80th. The combination, in a printing telegraph, of printing mechanism, a paper carriage, a type-wheel shaft provided with a unison spiral and with ratchet and stop-wheels, a reciprocating-bar provided with pawls and detents co-operating with said ratchet and stop-wheels, a spring controlled armature-lever connected with said bar, a motor electro magnet interposed in a local motor circuit controlled by the armature lever of a relay electro-magnet responding to makes and breaks in line, and a printing and unison electro-magnet and circuit connection having an armature-lever provided with devices for actuating the unison-latch, printing mechanism and paper carriage, substantially as and for the purposes set forth. 81st. A printing telegraph provided with type-wheel shafts having ratchet and stop-wheels, reciprocating-bars slotted for the accommodation of said shaft and provided at the sides of said slots with spring controlled pivotal pawls engaging said ratchet-wheels and at the ends of said slots with fixed detents for engaging the stop-wheels, spring controlled armature-levers connected with said bars, motor electro-magnets, relay electro-magnets interposed in the line circuit and adapted to control the local circuits of the motor electro-magnets at the trans-

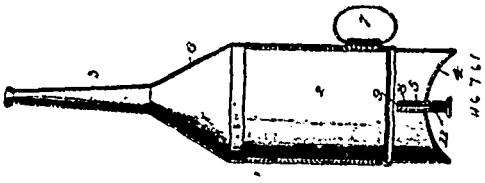
mitter and receiver, whereby synchronism in movement is ensured of the type-wheels of both instruments, substantially as and for the purposes set forth. 82nd. A printing telegraph provided with relay electro-magnets interposed in the line circuit and adapted to control local motor circuits at the transmitter and the receiver, magnetic devices interposed in said local motor circuits and provided with spring controlled armature-levers, ratchet and stop-wheel shafts of each instrument, a bar attached to said armature-lever and slotted for the accommodation of said shaft and provided at the sides of said slot with spring controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop-wheel, and a circuit interrupter mounted on the receiver type-wheel shaft and adapted to control the line circuit, substantially as and for the purposes set forth. 83rd. A printing telegraph provided with a relay interposed in a line circuit and adapted to control a local motor circuit or circuits at both transmitting and receiving instruments, devices interposed in the motor circuit or circuits, ratchet and stop-wheels on a shaft carrying a type-wheel of each instrument, mechanism co operating with said wheels, and a circuit interrupter located on the type-wheel shaft of the transmitter and adapted to control the line circuit, substantially as and for the purposes set forth. 84th. A printing telegraph provided with a transmitter and a receiver having motor electro-magnets responding to makes and breaks in a normal line circuit and provided with spring controlled armature-levers, ratchet and stop-wheels on the type-wheel shaft of each instrument, and a bar attached to said armature-lever and slotted for the accommodation of the type-wheel shaft and provided at the sides of said slot with spring-controlled pivotal pawls engaging said ratchet-wheel and at the ends of said slot with fixed detents for engaging the stop wheel, substantially as and for the purposes set forth. 85th. A printing telegraph provided with a transmitter and a receiver having motors responding to makes and breaks in a line circuit, a bar actuated by an electro-magnet and provided with pawls and detents, a ratchet and a stop-wheel on the type-wheel shaft of each instrument and a circuit maker and breaker mounted on the transmitter type wheel shaft and having its contact springs interposed in the line circuit, substantially as and for the purposes set forth. 86th. A printing telegraph provided with a transmitter and a receiver, each having a motor responding to makes and breaks in a line circuit produced by an interrupter on the transmitter type-wheel shaft and comprising stop and ratchet-wheels on the type-wheel shaft and a bar provided with pawls and detents and actuated by the spring-controlled armature lever of an electro-magnet, and each having a unison-latch adapted to arrest its type-wheel shaft and cause the same to hold the retracting spring of said armature-lever in tension and to hold the circuit interrupter in position for breaking the line circuit and permitting of the closing of the circuit of a unison key to line, substantially as and for the purposes set forth. 87th. In a printing telegraph, a single line conductor adapted to be included in a line circuit and in a unison circuit, combined transmitters and receivers normally operated through relay electro magnets controlling local circuits and responding to makes and breaks in the line circuit, a motor electro-magnet in said local circuit, bars provided with detents and pawls and connected with the spring controlled armature-levers of said motor electro-magnets, ratchet and stop-wheels on the type-wheel shafts, independent local printing circuits controlled at the transmitter by keys and at the receiver by an automatic switch on the type-wheel shaft, unison circuits controlled at the transmitter by a unison key and in parallel to line and through the devices of the transmitter to earth, a local unison circuit at the transmitter controlled by the armature lever of the relay electro-magnet in response to the branch unison circuit in line, three-way switches for automatically controlling the circuits at unison position and manual switches for reversing the circuits to permit the instruments to interchangeably operate as transmitters or receivers, substantially as and for the purposes set forth. 88th In a printing telegraph, a transmitter provided with a local printing circuit and its accessories, a receiver provided with a local printing circuit and its accessories and adapted to automatically effect printing upon the arrest of the type-wheel shaft of the receiver at positions other than unison, a motor electro-magnet at the receiver having a spring controlled armature-lever provided with a bar having pawls and detents co-operating with ratchet and stop-wheels on the type-wheel shaft, and mechanical and electrical devices and circuits operating upon the arrest of the transmitter type-wheel shaft to cause said bar to arrest the type-wheel shaft at the receiver, substantially as and for the purposes set forth. 89th. The combination, in a printing telegraph, of a type-wheel shaft provided with a type-wheel and a toothed wheel, a motor electro-magnet and circuit connections, a bar connected with the spring controlled armature-lever of the motor electro-magnet and provided with pawls and detents engaging ratchet and stop-wheels on said shaft, a pivotal printing-hammer, a unison latch, an armature-lever provided with a projection for operating the printing-hammer and with a wedge for operating link-work engaging the unison-latch, an electro-magnet and local printing circuit for operating said armature-lever, and a ratchet-switch controlling said local circuit and adapted to enter spaces between the teeth of said wheel, substantially as and for the purposes set forth. 90th. The combination, in a printing telegraph, of a type-wheel shaft provided with ratchet and stop-wheels, a bar provided with pawls and detents co-operating with said wheels, an electro-magnet provided with circuit connections and with a spring controlled armature-lever connected with said bar and a switch tending to close a local printing circuit and restrained from such action by the movement of the instrument and at unison position, substantially as and for the purposes set forth. 91st. The combination, in a printing telegraph, of a type-wheel shaft provided with ratchet and stop-wheels, a bar provided with pawls and detents co-operating with said wheels, an electro-magnet provided with circuit connections and with a spring controlled armature-lever connected with said bar, a switch tending to close a local printing circuit and restrained from such action by the movement of said type-wheel shaft and at unison position, and a manual-switch for making and breaking said local circuit to permit of the operation of the instrument as a receiver and as a transmitter, substantially as and for the purposes set forth. 92nd. The combination, in a printing telegraph, of a type wheel shaft provided with ratchet and stop-wheels, a bar provided with pawls and detents co-operating with said wheels, an electro-magnet provided with circuit connections, an armature-lever connected with said bar, and a pivotal switch tending to close a local printing circuit through its contacts and restrained from such action by the movement of the type-wheel shaft at the unison position, substantially as and for the purposes set forth. 93rd. The combination, in a printing telegraph, of a type-wheel shaft provided with ratchet and stop-wheels, a bar provided with pawls and detents co-operating with said wheels, an electro magnet provided with circuit connections and with a spring controlled armature-lever connected with said bar, a pivotal switch tending to close a local printing circuit through its contacts and restrained from such action by the movement of the type-wheel shaft, and at unison position, and a manual-switch for making and breaking said local circuit to permit of the operation of the instrument as a receiver and as a transmitter, substantially as and for the purposes set forth. 94th. The combination, in a printing telegraph of a toothed-wheel movable on a shaft, a pivotal ratchet-switch, whereof one end is provided with contacts controlling a local printing circuit, and whereof the other end rides over the teeth of said wheel as the shaft is rotated and enters a space between said teeth upon the arrest of said shaft except at the unison position, a bar provided with spring controlled pawls and detents co-operating with ratchet and stop-wheels on said shaft, and an electro-magnet provided with circuit connections and with a controlled armature-lever attached to said bar, substantially as and for the purposes set forth. 95th. The combination, in a printing telegraph, of a toothed-wheel movable on a type-wheel shaft, a pivotal ratchet switch, whereof one end is provided with contacts controlling a local printing circuit, and whereof the other end rides over the teeth of said wheel as the shaft is rotated and enters a space between said teeth upon the arrest of said shaft, except at unison position, a manual-switch interposed in the local printing circuit, a bar provided with spring controlled pawls and detents co-operating with ratchet and stop-wheels on said shaft, and an electro-magnet interposed in a local motor circuit and provided with a spring controlled armature-lever attached to said bar, substantially as and for the purposes set forth. 96th. The combination, in a printing telegraph receiver, of a wheel mounted upon a shaft and having a series of teeth and a comparatively wide tooth, a ratchet-switch controlling a local printing circuit and tending to enter one of the spaces between said teeth upon the arrest of the shaft and restrained from such action at unison position by the wide tooth, a motor electro-magnet provided with circuit connections and with a spring actuated armature-lever having pawls and detents co-operating with a detent and a stop-wheel on the shaft, and a unison latch and its accessories for arresting said shaft, substantially as and for the purposes set forth. 97th. In a printing telegraph, a spring controlled unison latch, a system of links for operating said latch, an armature lever provided with a wedge adapted to actuate said links, an electro-magnet and circuit connections for actuating said armature-lever, a type-wheel shaft provided with a ratchet and a stop-wheel, a spring controlled bar provided with pawls and detents co-operating with said wheels and a motor electro-magnet and connections for operating said bar, substantially as and for the purpose set forth. 98th. A printing telegraph provided with receivers and transmitters each having a motor electro-magnet adapted to reciprocate a spring controlled bar provided with pawls and detents co-operating with ratchet and stop wheels mounted on the type-wheel shaft a circuit interrupter moving with the type-wheel shaft of the transmitter and provided with circuit connections and devices adapted to control the motor electro-magnets at the respective instruments, a spur-wheel mounted on the shaft of the receiver, a detent for engaging said spur-wheel and arresting the circuit interrupter just before its contact passes off the segment over which it is trailing, whereby the transmitter bar is arrested before its armature-lever completes its stroke, substantially as and for the purposes set forth. 99th. In a printing telegraph instrument, a printing and unison electro-magnet and a locking electro-magnet and their devices, a generator, an automatic switch tending to close a local printing circuit and restrained from such action by the movement of the instrument and at unison position, circuit connections from earth through the generator, and in parallel by one branch through a manual switch and the contacts of the automatic switch and the coils of the printing and unison electro-magnet to earth, and by the other branch through the contacts of the sunflower device and the contacts of depressed keys and the coils of both of said magnets to earth, and a switch mounted on the type-wheel shaft and adapted

to control the second branch circuit, substantially as and for the purposes set forth. 100th. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, an automatic switch tending to close a local printing circuit and restrained from such action by the movement of the instrument and at unison position, a manual-switch, circuit connections from earth through the generator and the manual-switch and the contacts of the automatic switch and the coils of the printing and unison electro-magnet to earth, normally open keys and a sunflower device, a locking electro-magnet, and circuit connections from said generator through the contacts of the sunflower device to the contacts of the keys and the coils of both of said magnets, substantially as and for the purposes set forth. 101st. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, a switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action by the movement of the instrument, a locking electro-magnet interposed in the other branch of the local printing circuit, and keys tending to normally interrupt the branch circuit through the coils of the locking electro-magnet, substantially as and for the purposes set forth. 102nd. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, an automatic switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action by the movement of the instrument, a manual switch interposed in said branch of the local circuit, a locking electro-magnet interposed in the other branch of the local printing circuit, and keys tending to normally interrupt the branch circuit through the coils of the locking electro-magnet, substantially as and for the purposes set forth. 103rd. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, a switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action by the rotation of a toothed-wheel, a locking electro-magnet interposed in the other branch of the local printing circuit, and keys tending to normally interrupt the branch circuit through the coils of the locking electro-magnet, substantially as and for the purposes set forth. 104th. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, an automatic switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action by the rotation of a toothed-wheel, a manual switch interposed in said branch of the local circuit, a locking electro-magnet interposed in the other branch of the local printing circuit, and keys tending to normally interrupt the branch circuit through the coils of the locking electro-magnet, substantially as and for the purposes set forth. 105th. In a printing instrument, a printing and unison electro-magnet and devices, a generator, an automatic switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action at unison position by a projection on a revoluble toothed-wheel, a locking electro-magnet adapted to be included in the other branch of the local printing circuit and in a local unison circuit controlled by impulses in line, and means for automatically breaking the branch of the printing circuit appertaining to the locking electro-magnet and for closing the local unison circuit at unison position, substantially as and for the purposes set forth. 106th. In a printing telegraph instrument, a printing and unison electro-magnet and devices, a generator, an automatic switch tending to close one branch of a local printing circuit through the coils of said electro-magnet and restrained from such action at unison position, a locking electro-magnet adapted to be included in the other branch of the local printing circuit and in a unison circuit controlled by a unison key and means for automatically breaking the branch of the local printing circuit appertaining to the locking electro-magnet and for closing the local unison circuit at unison position, substantially as and for the purposes set forth. 107th. A printing telegraph system comprising a double contact unison key and circuit connections and devices adapted to release the transmitter type-wheel shaft and to cause a relay electro-magnet and its circuit connections to synchronously release the transmitter type-wheel shaft, substantially as and for the purposes set forth. 108th. A printing telegraph system comprising character keys and circuit connections for synchronously arresting and releasing a transmitter and a receiver and a local printing circuit and mechanical and electrical devices tending to automatically effect an impression upon the arrest of the receiver at positions other than unison, substantially as and for the purposes set forth. 109th. A printing telegraph system comprising character keys and circuit connections for synchronously arresting and releasing a transmitter and a receiver, and a local printing circuit and mechanical and electrical devices independent of the line circuit and tending to automatically effect an impression, feed the paper, and actuate the unison latch at the receiver at positions other than unison, substantially as and for the purposes set forth. 110th. In a printing telegraph, relay electro-magnets for controlling the instruments, a line through the coils of said relay electro-magnets, branch circuits from said line through circuit interrupters on the type-wheel shafts of the respective instruments and a manual-switch at each instrument for controlling said branch circuits, substantially as and for the purposes set forth.

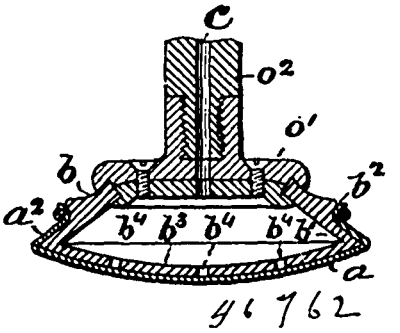
No. 46,761. Drenching Bottle. (*Bouteille pour purger.*)

Peter Schaefer and Charles R. Davis, both of St. Peter, Minnesota, U.S.A., 7th August, 1894; 6 years.

Claim.—1st. A drenching bottle comprising two separate telescoping sections and provided with a vent, one of the sections having a spout, substantially as described. 2nd. A drenching bottle comprising the upper and lower separable telescopic sections, the upper section being provided with a spout and the lower section having an inwardly extending concavo-convex bottom provided with a vent opening, and a spring actuated valve for closing the vent opening, substantially as described.



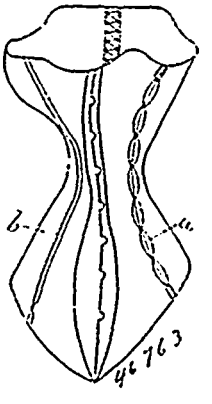
No. 46,762. Buffing Pad. (*Coussinet de tampon.*)



The Globe Buffer Company, Boston, assignee of Harold A. Webster, Haverhill, Massachusetts, all in the U.S.A., 7th August, 1894; 6 years.

Claim. 1st. As an article of manufacture, a buffing-pad marginally slotted or recessed to form a series of tongues, and molded to form a flange which includes said tongues, said flange standing substantially at right angles with the acting face of the pad, whereby the pad is adapted to be readily applied to a holder having a seat for said tongues, as set forth. 2nd. As an article of manufacture, a buffing-pad having in its margain tapered slots or recesses forming a series of tapered tongues which are widened at their outer portions, the pad being molded to form a flange which includes said tongues and stands substantially at right angles with the acting face of the pad, said flange being sent from the body of the pad along a line somewhat within the inner ends of the slots, so that the margin of the acting face of the pad is continuous or unbroken, as set forth. 3rd. A buffing-pad holder having an elastic pad-supporting face, and an elastic tapering or frusto-conical seat surrounding said face and arranged at an acute angle therewith, said seat having a shoulder at its upper portion, combined with a pad marginally slotted or recessed to form a series of tongues, and molded to form a flange which includes said tongues, the flange being formed to surround said seat, and a clamp adapted to press the upper portions of said tongues against the seat and shoulder, as set forth.

No. 46,763. Corset. (*Corset.*)

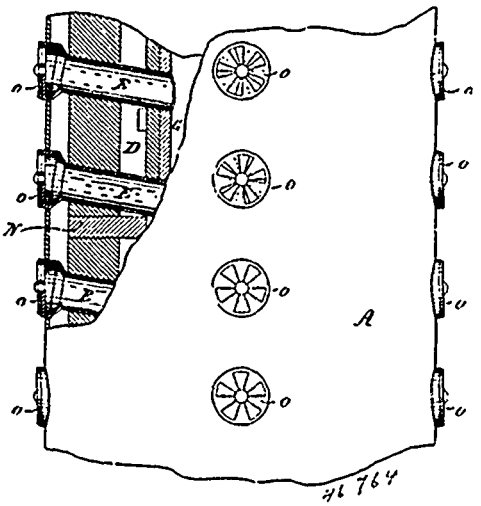


George Airey, St. Leonards-on-Sea, Sussex, England, 7th August, 1894; 6 years.

Claim.—A support for corsets or for similar purposes consisting of

a number of lengths of wire or other suitable material interlaced, plaited or arranged in any suitable fashion so as to form a compact strand, and having capped ends and a protective covering.

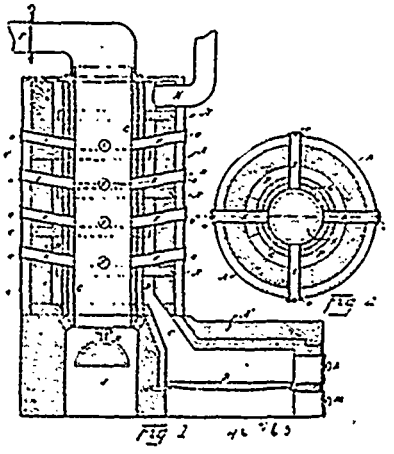
No. 46,764. Method of and Apparatus for Treating Ores. (*Méthode et appareil pour le traitement des minerais.*)



Henry Hugh Eames, Detroit, Michigan, U.S.A., 7th August, 1894; 6 years.

Claim.—1st. The herein described method of treating sulphureous ores, which consists in heating a body of the ore in a chamber closed against the entrance of products of combustion, first without admission of air, then with a regulated admission of air to the bottom of said chamber, and as the process progresses gradually admitting air at points in different zones in regular succession from bottom to top, substantially as described. 2nd. The herein described method of treating sulphureous ores containing arsenic, which consists in heating a body of the ore in a chamber, closed against the entrance of products of combustion, admitting air to the bottom of said chamber and as the process progresses gradually admitting air at points in different zones in regular succession from bottom to top, and leading off and condensing the resulting products, substantially as described.

No. 46,765. Method of and Apparatus for Treating Ores. (*Méthode et appareil pour le traitement des minerais.*)



Henry Hugh Eames, Detroit, Michigan, U.S.A., 7th August, 1894; 6 years.

Claim.—1st. The herein described mode of treating ores of the character described, which consists in heating a body of the ore in a chamber closed to the entrance of the products of combustion without admitting air, to a temperature suitable to produce volatilization of the constituents of the ore to be separated, then oxidizing such constituents by admitting air first to the bottom of the chamber only, and then as the process progresses in regular succession from bottom to top and in causing such air to pass first through that portion of the heated ore from which the volatilization constituent has been eliminated, substantially as described. 2nd. The herein described mode of treating ores of the character described, which consists in oxidizing the volatilizable constituent of the ore, first by heating a body of the ore in a chamber closed to the entrance of products of combustion to a suitable temperature, then admitting the air to portions of the body of the heated ore in zones gradually ascending from the bottom to the top and leading off and condensing the resulting oxide, substantially as described. 3rd. An apparatus for the treatment of ore consisting of a chamber closed to the entrance of products of combustion and communicating into a condenser, controllable air openings into said chamber at different zones, means for heating said chamber and feed and discharge openings at the top and bottom of the chamber respectively, substantially as and for the purpose set forth.

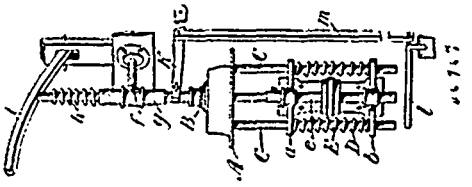
No. 46,766. Process of Treating Nettle Fibre.

(*Procédé pour le traitement des fibres d'orties.*)

Rudolf Spoendlin, Zurich, Switzerland, 7th August, 1894; 6 years.

Claim.—1st. The process herein described of treating or animalizing nettle-fibres and preparing the same for the manufacture of underwear, which consists in subjecting said fibres to the action of a vegetable oil that has been purified by sulphuric acid, neutralized by a suitable alkali and mixed with ammonia, substantially as set forth. 2nd. As a new article of manufacture, animalized nettle-fibres, treated with a mixture of purified vegetable oil and ammonia, substantially as set forth.

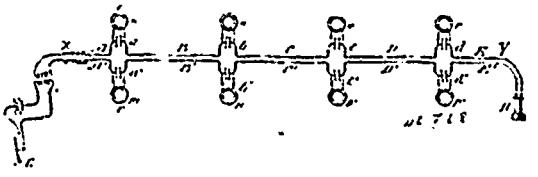
No. 46,767. Machine for the Manufacture of Lime Pencils, &c. (*Machine pour la fabrication de crayon de chaux.*)



Adoniram J. Bird, Rockland, Maine, U.S.A., 7th August, 1894; 6 years.

Claim. 1st. In combination with the rotary cutter, the vertically movable table supported upon sliding rods, springs for holding the table normally raised, and the work out of contact with the cutter, a pressure disc supported from a vertically reciprocating rod, a spring surrounding said rod for keeping the pressure disc normally raised, a hand lever bearing upon the upper end of the rod, and a foot lever also connected to said rod for forcing the table and material thereon down upon the cutter, substantially as described. 2nd. In combination with the rotary cutter, the vertically movable table supported upon sliding rods, springs for holding the table normally raised, and the work out of contact with the cutter, and means for depressing the table to force the material upon the cutter, substantially as described.

No. 46,768. Method of and Apparatus for Electrical Transmission. (*Méthode et appareil de transmission électrique.*)



Michael T. Pupin, New York, State of New York, U.S.A., 7th August, 1894; 6 years.

Claim.—1st. Overcoming the impedance which long electrical circuits possessing considerable self-induction, static capacity, electrostatic absorption and large time-constant offer to variable currents by tuning such a circuit so as to give to it a previously selected periodicity by dividing said circuit into a number of parts, preferably equal and similar, and bringing said parts into inductive relation to each other either by electrodynamic or electrostatic induction, or both. 2nd. The construction and arrangement of an electrical conductor composed of parts of sections placed in series and provided with condensers in circuit with and interposed between said sections, a coil in shunt with each condenser and a closed or substantially closed magnetic circuit surrounded by said coil.

No. 46,769. Hair Structure. (*Ouvrages en cheveux.*)

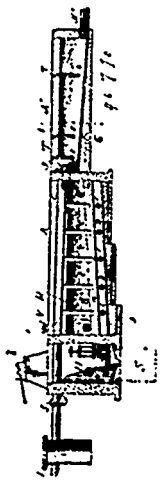
Hildebert Dorenwend, Toronto, Ontario, Canada, 7th August, 1894; 6 years.

Claim.—As an improved article of manufacture, a hair structure

comprising a border ribbon, a series of intermediate ribbons secured by each end thereto, each of said border and intermediate ribbons

being folded upon itself and thereby forming a casing, hair weaving, one edge of which is secured to cords, the latter being disposed within the casings formed by said border and intermediate ribbons, and the remaining portion of said hair weaving being without said casings formed by the border and intermediate ribbons, substantially as and for the purpose set forth.

No. 46,770. Treatment of Sewage and Apparatus therefor. (*Traitement d'égout et appareil pour cet objet.*)



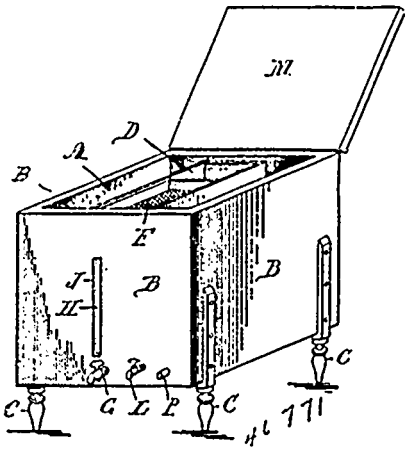
William Dundas Scott-Mongrieff, Westminster, London, England, 7th August, 1894; 6 years.

Claim. 1st. The herein described method of treating sewage by concentration and slow upward filtration in such manner that micro-organisms developed from it effect its purification. 2nd. An apparatus for the treatment and purifying of sewage by the action of microbes, consisting of the tank A, with sloped bottom *a*, and concentrating compartment B, inclined to a sludge pit D, and of a superficial area preferably less than that of the tank A, perforated diaphragm C, overlapping same and upper compartment containing filtering and intercepting material M, inlet pipe I, and conduit F, at one end of the tank connecting with the concentrating compartment B, and valved sludge pipe H, at the other end of the tank, and effluent discharge orifices N, substantially as described. 3rd. In combination, the tank A, having the upper compartment with sloped bottom *a*, containing filtering and intercepting material M, the inclined concentrating compartment B, extending below and of less superficial area than the tank A, the perforated diaphragm C, the inlet pipe I, and the conduit F, at one end of the tank connecting with the concentrating compartment B, at one end, and the valve H, at the other end of the compartment in the sludge pit D, the outlet orifices N, connecting with the supplementary filter carriers or beds A^1, substantially as described. 4th. In an apparatus for treating and purifying sewage by the action of microbes, the combination with tanks A, with compartments B, and perforated diaphragm C, sewage inlet I and F, sludge outlet H, and effluent discharge orifices N, as above set forth, of hot water circulating pipes P, arranged above diaphragm C, and embedded in the material M, substantially as and for the purpose above described. 5th. In combination, a plurality of tanks A, pipes connecting one end of each with the crude sewage supply compartment B, and diaphragm C, filtering material M, and outlet orifices N, and the pumping and exhausting apparatus R, having pipes *r*, and r^1, leading therefrom to the two filters, substantially as and for the purposes described. 6th. In combination with a pair of primary tanks A, A, such as is above referred to, the valve V, situate in the lowest part of the dividing wall, and the pumping apparatus R and r^1, for aerating the filtering material when required, substantially as set forth. 7th. The apparatus for the treatment of sewage for its purification by the action of micro-organisms constructed and arranged, substantially as described.

No. 46,771. Creamer. (*Crémeuse.*)

Allan Cass, Cassburn, Ontario, and Nathaniel Boyd, Carberry, Manitoba, both in Canada, 7th August, 1894; 6 years.

Claim.—A creamer, comprising a metal tank A, having a jacket B, and a casing N, perforated tubes K, connecting with a tap or valve L, externally and provided with a lid M, and aperture J, a cream chamber or vessel D, attached to said tank internally and



having an inclined bottom E, and observing glass H, a removable sieve or strainer F, fitting the top of said cream chamber, and a tap or valve G, to draw off the milk and cream separately, as set forth.

No. 46,772. Manufacture of Food.

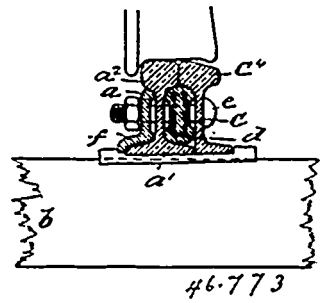
(*Fabrication d'aliment.*)

William Clark, Montreal, Quebec, Canada, 7th August, 1894; 6 years.

Claim.—1st. In the process of manufacturing food preparations containing the albuminoidal elements of wheat, deriving said elements by first soaking in water the wheat germ containing such elements to dissolve the soluble albuminoids and then drawing off the liquor containing same, with or without further treatment by heating such liquor without stirring to coagulate the albumin, removing the coagulated albuminoids, draining therefrom the dextrinous liquor and pressing and granulating the same, as set forth. 2nd. A food preparation consisting of the albuminoidal elements of wheat and extract of meat, as set forth. 3rd. A food product consisting of coagulated albuminoids of wheat prepared from the dextrinous liquor. 4th. A food product consisting of soluble albuminoids of wheat. 5th. A food preparation consisting of coagulated albuminoids or essence of wheat and solid extract of meat as set forth. 6th. A food preparation consisting of soluble albuminoids or essence of wheat and fluid extract of meat, combined in fluid form, as set forth.

No. 46,773. Railway Rail Joint.

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



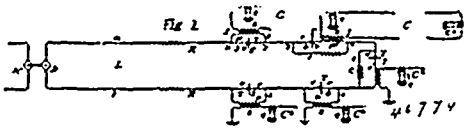
George A. Hoffman and Max Friedlaender, both of Berlin, Germany, 7th August, 1894; 6 years.

Claim.—1st. In a railway rail-joint, the combination with the rail proper of a safety rail arranged outside the track, said safety-rail having its ends sloping downwards, and being sloping outwards in its entire length, substantially as and for the purpose hereinbefore set forth. 2nd. In a railway rail-joint, the combination with the rail proper of a safety rail arranged outside the track, said safety-rail having its ends sloping downwards, and being sloping outwards in its entire length, a fish plate resting on the foot of the main rail and supporting the heads of both the rails being arranged between the stems of the latter, substantially as and for the purpose hereinbefore set forth. 3rd. In a railway rail-joint, the combination with the rail proper of a safety rail arranged outside the track, said safety-rail having its ends sloping downwards, and being sloping outwards in its entire length, a fish plate resting on the foot of the

main rail and on a rib of the auxiliary rail, and supporting the heads of both the rails being arranged between the stems of the latter, substantially as and for the purpose hereinbefore set forth. 4th. In a railway rail-joint, the combination with the rail proper of a safety-rail arranged outside the track, said safety-rails having its ends sloping downwards, and being sloping outwards in its entire length, a double-headed fish-plate resting with its lower head on the foot of the main rail and on a rib of the auxiliary rail, and supporting with its upper head the heads of both the rails being arranged between the stems of the latter, substantially as and for the purpose hereinbefore set forth. 5th. In a railway rail-joint, the combination with the double-headed main-rail proper of a double-headed safety-rail arranged outside the track, said safety-rail having its ends sloping downwards, and being sloping outwards in its entire length, a double-headed fish-plate resting with its lower head on the foot of the main rail and on a rib of the auxiliary rail, and supporting with its upper head the heads of both the rails being arranged between the stems of the latter, substantially as and for the purpose hereinbefore set forth. 6th. In a railway rail-joint, the combination with the double-headed main rail proper, of a double-headed safety-rail arranged outside the track, said safety-rail having its ends sloping downwards, and being sloping outwards in its entire length, a double-headed fish-plate resting with its lower head on the foot of the main-rail and on a rib of the auxiliary rail, and supporting with its upper head the heads of both the rails being arranged between the stems of the latter, the whole being connected by bolts with each other, as well as with an ordinary fish-plate arranged inside the track, substantially as and for the purpose hereinbefore set forth.

No. 46,774. Telephonic Transmission.

(Transmission téléphonique.)



The Bell Telephone Company of Canada, Montreal, Quebec, Canada, assignee of John S. Stone, Boston, Massachusetts, U.S.A., 7th August, 1894; 6 years.

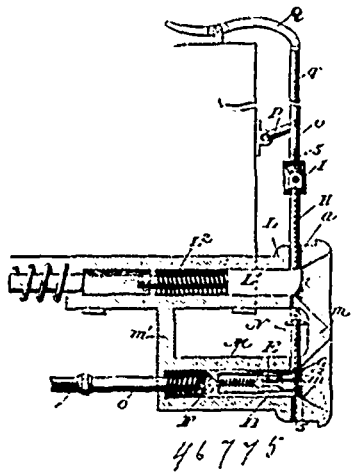
Claim.—1st. The combination in a telephone transmitting apparatus of a variable resistance telephone transmitter, and an induction coil therefor, a current supply circuit divided into two parallel branches containing respectively the said transmitter and the primary helix of the said induction coil, the branch including said primary being conductively continuous, and a direct or conversation circuit extending to a receiver telephone, and including the secondary helix of the said induction coil. 2nd. The combination of a plurality of variable resistance telephone transmitters in series with each other, each provided with an associated induction coil, a current supply circuit extending from a suitable source of electrical energy to the said transmitters and divided at each into two parallel branches, containing respectively the variable resistance of the transmitter and the primary helix of its associated circuit for each of the said transmitters connected with or adapted to be connected with the secondary helix of the said induction coil and extending to a receiving telephone, whereby a suitably located common source of electricity may be common to a number of transmitters without any interference with their independence of operation, substantially as described. 3rd. The combination with a current supply circuit containing a suitable source of current, and a current regulating device, substantially as described, of a plurality of variable resistance transmitters in series with each other, with said current regulating device and with said source of current, and of a series of branch circuits, each bridging one of said transmitters, thereby forming local circuits, substantially as hereinbefore shown in which are included the primary helices of induction coils, the secondary circuits of which are, or are adapted, to be connected with, or operated in main circuits extending to receiving telephone, whereby a suitably located common source of current may be common to a number of transmitters without any interference with their independence of operation, substantially as described. 4th. The combination substantially as hereinbefore described; of a magneto or dynamo machine constituting a source of transmitter currents, a current supply circuit extending therefrom and excited thereby, a number of variable resistance telephone transmitters having associated induction coils connected in series in the said supply circuit, a shunt or branch circuit including the primary helix of its associated induction coils connected round each transmitter, self induction coils included in the supply circuit mains between the said dynamo machine and the transmitter nearest thereto, and a series of direct telephone or conversation circuits extending to receiving telephones, and including the secondary helices of the said transmitters respectively, substantially as described.

No. 46,775. Combined Car and Air Brake Coupling.

(Attelage de chars et frein atmosphérique combinés.)

Samuel J. Galloway, Santiam, and Nimrod P. Payne, Albany, both of Oregon, U.S.A., 7th August, 1894; 6 years.

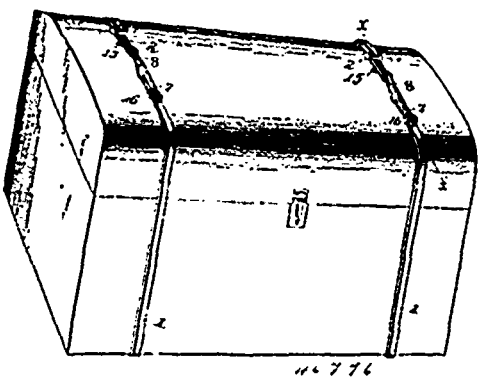
Claim.—1st. The combination of the draw-bar, with a movable hollow block therein, the air pipe connected to said block, and the air valve in said block opened automatically by the link in the coupling, substantially as described. 2nd. The combination of the



draw-bar, with a hollow block therein adapted to uphold the pin, an air pipe connected to said block, and an air valve for said pipe, substantially as specified. 3rd. The combination of the draw-bar, with a hollow block therein adapted to uphold the pin, an air pipe connected to said block, an independently movable air valve in said block, and a hollow link adapted to unseat said air valve and establish communication between the air pipes of opposite couplings, as and for the purpose set forth. 4th. The combination of the draw-bar, a movable block therein, and a spring controlled pin-upholding plate connected to said block, as and for the purpose specified. 5th. The combination of the draw-bar, a movable block therein, an air pipe connected to said block, a valve for said pipe within the draw-bar, adapted to be automatically opened by the entrance of a coupling pin, and a spring controlled pin-upholding plate connected to said block, substantially as set forth. 6th. The combination of the draw-bar, the movable hollow spring controlled block therein, the air pipe attached to said block, the spring controlled tube, and the independently spring controlled air valve in said block, substantially as described. 7th. The herein described hollow link for combined car and air brake couplings, consisting of hollow oval link having extensions at its ends provided with globular heads, substantially as and for the purpose set forth. 8th. The combination of the upper and lower connected draw-bars, the automatic pin upholding devices therein, and the air pipe coupling devices in the lower draw bar, all substantially as specified. 9th. The combination of the draw-bars L and M, the yoke I, the pins H and N, the rock shaft P, the link connection between said rock shaft and yoke, and the oscillating lever Q, and the connection between said lever and said rock shaft, all constructed and arranged to operate, substantially as and for the purpose set forth.

No. 46,776. Trunk Strap Fastener.

(Attache de couvercle de coffre.)



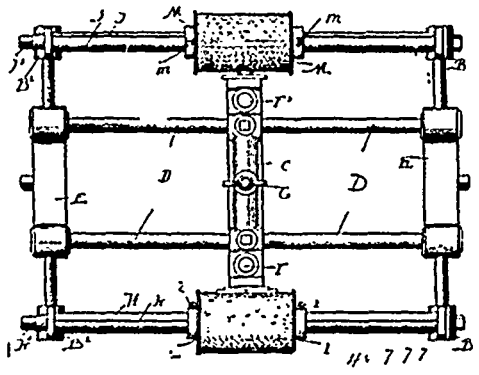
Peter Mundry, Henry Pomtier, and John Mundry, all of Delta, Colorado, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. In a trunk strap fastener, the combination with a strap, of a ratchet bar permanently attached to one end of the strap, a link provided with a series of cross-bars forming strap openings, one of the cross-bars being arranged in a plane higher than the end one, whereby the other end of the strap is adapted to be passed over the higher bar and backward between the strap and the under side

of the end bar to clamp the strap adjustably, and a locking lever pivotally secured to the link and engaging the ratchet-bar, substantially as described. 2nd. In a trunk strap fastener, the combination with a strap, of a ratchet bar attached to one end of the strap, a link connected with the other end of the strap, and locking lever pivotally connected with the link and adapted to engage the ratchet bar and provided at its engaging end with a groove 9, forming oppositely situated shoulders 10, and having a recess 11, forming side flanges to hold the lever against lateral movement, substantially as described.

No. 46,777. Moulding Sand Papering Machine.

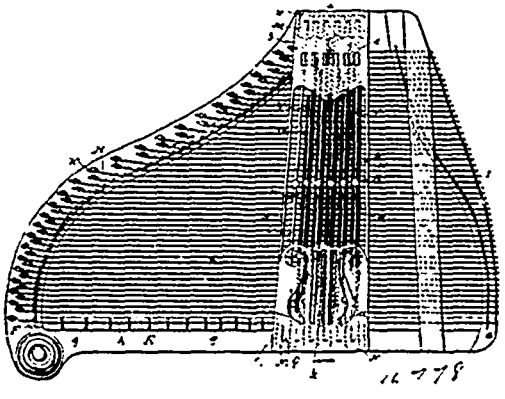
(*Machine à appliquer le papier de verre.*)



Charles L. Ruehs, Chicago, Illinois, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. The combination, in a sand papering machine with a suitable bed, driving and feeding devices and a reciprocating frame suitably connected with the driving device of a series of block carriers mounted upon said frame, a series of grooved blocks secured in said carriers, each carrier having a pair of rolls located at the opposite ends of the block and a pair of fingers to fold the paper, and a strip of sand paper or cloth adapted to cover the face of the block, said cloth being wound upon the rolls and stretched through the fingers and longitudinally of the block, substantially as described. 2nd. The combination, in a sand papering machine and with a suitable bed, driving and feeding devices and a reciprocating frame provided with a series of cross-bars A, A^1, and suitably connected with the driving mechanism, of the block carrying frame having a head C, supported from the cross-bars by suitable means, the rollers K, J, also supported from the cross-bars and at the opposite ends of the head, the box H, having rods F, F^1, G, guided in the head, the block I secured in the box, the fingers O, O^1 secured to said box and a strip of sand cloth wound upon the rollers and stretched longitudinally across the face of the block, substantially as shown and described.

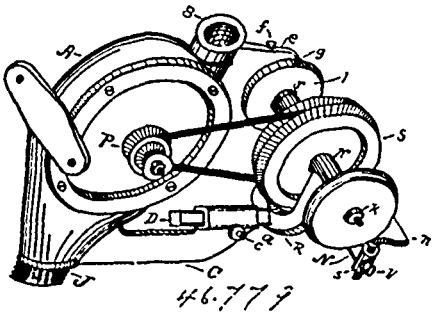
No. 46,778. Harp. (*Harpe.*)



The C. F. Zimmermann Company, assignee of Aldis J. Gery, both of Dolgeville, and Rudolf Dolge, New York, all in the State of New York, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. The combination, with a stringed instrument, of a series of damper bars made moveable and shiftable independently of one another, and adjustable dampers carried by and movable independently of one of said shiftable damper bars, substantially as described. 2nd. The combination, with a stringed instrument, of a series of damper bars made lengthwise shiftable independently of one another and a slide having dampers and carried by and movable independently of one of said damper bars, substantially as described. 3rd. The combination, with a stringed instrument, of a shiftable damper bar provided with a slide mounted to move along a side face of the bar, dampers supported by said slide clear of the bar, and a shifter or trigger for moving said slide, substantially as described.

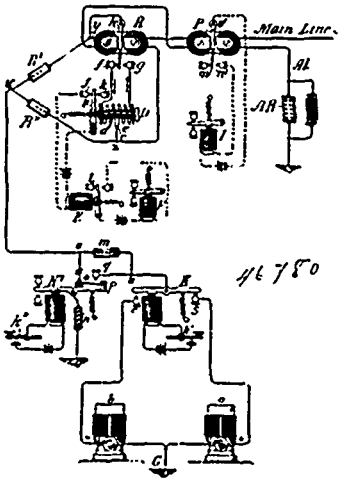
No. 46,779. Grinding Machine. (*Moulin à blé.*)



Elijah B. Benham and Howard E. Barlow, both of Providence, and Henry Howard, Phenix, all in Rhode Island, U.S.A., 8th August, 1894; 6 years.

Claim.—As an article of manufacture, the combination of a hydraulic motor, having a case with a supply opening at the top and discharging aperture at the bottom, a horizontal arm projecting out in front with a socket, an extension arm fitted to slide in said socket, a horizontal cross-bar held in bearings supported by said extension bar, a pulley and grinding wheels secured on said shaft, a cross-bar also held on said extension bar and having sockets at its ends to hold rests before the grinding wheels, and a feed pipe for one of the grinding wheels inserted in the supply pipe of the motor.

No. 46,780. Telegraphy. (*Télégraphie.*)



The Western Union Telegraph Company, New York, assignee of Pierson J. Wicks, Brooklyn, all in the State of New York, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. In a quadruplex or other telegraph in which two messages or signals are transmitted in the same direction, one by current reversals and the other by change in current strength, a relay which is responsive to current reversals, a relay for recording signals by changes in current strength, and means for developing the same magnetic polarity in said relay during mainline reversals. 2nd. In a telegraph system for simultaneously transmitting two messages in the same direction in one line, the combination of a receiving instrument which is responsive to current reversals for recording signals due to such currents, a main-line relay for recording signals due to changes in current strength, and means for maintaining the same direction of magnetic effect upon the armature of said second relay by main-line currents, irrespective of their direction. 3rd. In a quadruplex or duplex telegraph, a relay at a receiving station, a second relay for recording signals due to changes in current strength, and a relay for directing main-line currents to said second relay in either of two directions, according to the direction of main-line current. 4th. In a telegraph system for simultaneously transmitting two messages in the same direction over one wire, two relays, both of which are responsive to current reversals, one being employed to record signals due to such currents, and the other to actuate a commutator or switch, and a relay for recording signals due to changes in current strength, the arrangement being

such that the main-line currents shall be directed through said relay in either of two ways, according to the direction of main-line current during reversals. 5th. In a telegraph system for simultaneously transmitting messages over a single conductor, a relay for receiving signals due to current reversals, and means for receiving independent signals due to changes in current strength, said means consisting of a main-line relay which is responsive to current reversals, a relay placed in a breach or branches of the main line, and a circuit-changing device for directing main-line currents through said relay in either of two ways according to the direction of flow during reversals of current on the main line. 6th. In a quadruplex telegraph, a main and an artificial line at each station, two relays which are responsive to alternating currents received from a distant station, a third relay placed in a bridge joining the main and artificial lines, and controlling devices actuated by one of said relays for maintaining the same direction of magnetic effect in said bridge relay, irrespective of the direction of main-line flow. 7th. In a quadruplex telegraph, the combination at one station, of a main and an artificialline, relays R, and P, which are responsive to current reversals, a bridge conductor joining points x and y, of said lines, a relay D, included in said bridge, relay coils d, e, and armature lever h, for alternately directing the bridge current through said coils according to the direction of main-line flow. 8th. In a quadruplex telegraph, the combination at one station of two polarized relays which are differentially wound, a bridge conductor joining the main and artificial lines of said system, a relay placed in said bridge having two coils d, e, and an armature lever h, for alternately connecting said coils in circuit, whereby the same direction of magnetic effect may be maintained in relay D, irrespective of the direction of main-line flow.

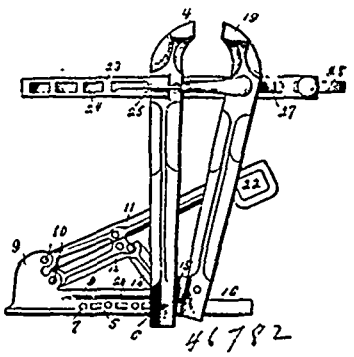
No. 46,781. Fireproofing Composition.

(*Composition à l'épreuve du feu.*)

Max Backert, New York, assignee of Lina Schuler, Whitestone, all in the State of New York, U.S.A., 8th August, 1894; 6 years.

Claim.—As a new article of manufacture, a fireproofing composition composed of phosphate of ammonia and sulphate of ammonia in a solidified form and in about the proportions specified.

No. 46,782. Vise. (*Etau.*)



Julius W. Flowers and Bernhard H. Barwick, both of Newport, Oregon, U.S.A., 8th August, 1894; 6 years.

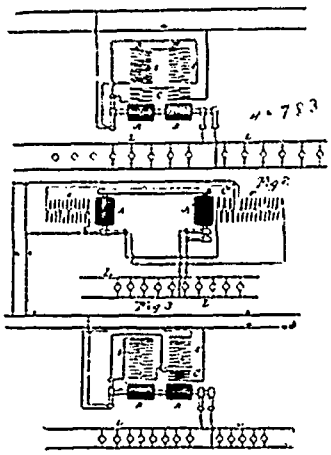
Claim.—1st. In a vise, the combination of a stationary jaw, a movable jaw, an adjusting bar extending through the upper portions of said jaws, a clamping lever or regulator attached to said bar and adapted to engage the outer upper portion of the movable jaw, and a block or shoe attached to the lower portion of the movable jaw, a spring connected to said block or shoe, an operating lever and a link between said operating lever and the block or shoe, substantially as described. 2nd. In a vise, the combination of a stationary jaw, a bar movable and adjustable attached to said stationary jaw, a carrying tube on said bar, an operating lever pivotally connected to the upper portion of said bar, a fulcrum lever also pivotally attached to the rear portion of said bar and connected to the lever by a link, a movable jaw adjacent to said stationary jaw, a block or shoe attached to said movable jaw and having a spring secured in a tubular portion thereof and opposite end of said spring being connected within the tube of the aforesaid bar, a link connecting fulcrum bar with the shoe, and an upper secondary adjustment for the jaws, substantially as described.

No. 46,783. System of Electric Conversion.

(*Système de conversion électrique.*)

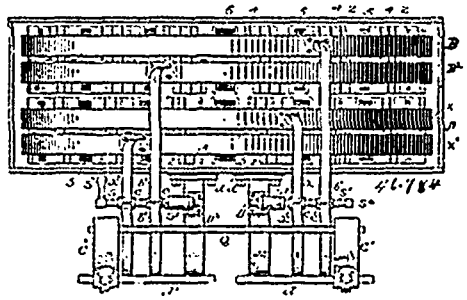
The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Edwin W. Rice, jr., Swampscott, Massachusetts, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. In a combined electric motor and generator, a regulating or controlling coil for the generator connected to a point whose potential varies with the counter electro-motive force of the motor armature, as and for the purpose described. 2nd. In a combined electric motor and generator, a regulating or controlling coil or circuit for the generator consisting of a field magnet coil in circuit



with the armature for the motor. 3rd. In a combined motor and generator, two field sustaining coils for the generator, one in a circuit with the motor armature and the other in a separate circuit from the supply main. 4th. In an electric transformer or converter, a regulating coil or circuit for the part thereof connected with the local circuit, said regulating coil being connected with the supply main and to a point of the transformer circuit supplied therefrom where the potential varies with the counter-electro motive force of said transformer.

No. 46,784. Mechanism for Converting Electrical Currents and Method of Applying the Same. (*Mécanisme pour convertir les courants électriques et méthode de les appliquer.*)



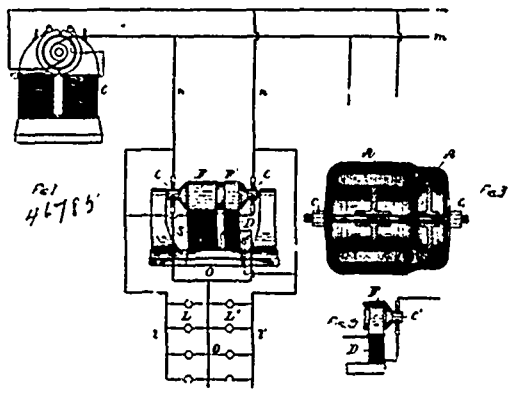
George D. Burton, Boston, Massachusetts, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. The combination, in an apparatus for electric heating of metal holders arranged to hold the metal to be heated, with two converters arranged to furnish electric currents of different potential to the metal during the heating process, substantially as described. 2nd. The combination, in an apparatus for electric heating, of metal holders arranged to hold the metal to be heated, with two converters arranged to furnish electric currents of different potential, and intervening connecting mechanism arranged to connect and disconnect either of said converters from the metal holders at the will of the operator, substantially as described. 3rd. The method of heating metals by the electric currents, which consists in commencing the heating process with a current of lower potential, and when the resistance of the metal is increased by the heat in employing a current of higher potential to complete the heating process, substantially as described. 4th. The combination of two converters, divided arms or conductors x^2, x^4, and b^2, b^4, and b^1, b^3, and x^1, x^3, respectively having movable conducting blocks of metal interposed between their parts, and metal holders arranged to hold the metal to be heated by the electric currents flowing through them from said converters, substantially as described. 5th. The combination of two converters, divided arms or conductors x^2, x^4, and b^2, b^4, and b^1, b^3, and x^1, x^3, connected thereto and respectively having rotating conducting blocks of metal interposed between their parts, and metal holders arranged to hold the metal to be heated, and connected to said conductors, substantially as described. 6th. The combination of the metal holder C^1, the two converters, the divided conductors b^1, b^3, and x^1, x^3, connecting the metal holder with the converters, and the shaft s^1, carrying metal blocks arranged to partially or wholly disconnect the parts of one conductor when it connects the parts of the other one, substantially as described. 7th.

In an electric current converter, the combination of positive and negative rings connected to the secondary circuit of the converter and detachable conductors of electricity connected to said rings. 8th. In an electric current converter, the combination of positive and negative rings connected to the secondary circuit of the converter and detachable conductors of electricity connected to said rings and composed of bars of metal. 9th. In an electric current converter, the combination of positive and negative rings arranged on the exterior of the converter and connected to the secondary circuit of the converter and detachable conductors composed of bars of metal, and metal holding device adjustable on said conductors. 10th. An electric converter for converting electric currents by induction from a higher to a lower potential provided with two continuous rings of different polarity, disposed on the outside of the converter and connected with opposite terminals of the secondary coils thereof. 11th. In an electric current converter, the combination of a converter for converting electric currents from a higher to a lower potential provided with rings of opposite polarity, connected to opposite terminals of the secondary coils and disposed on the exterior of the converter, and metal holders connected with said rings for holding the metal to be heated.

No. 46,785. System of Electric Distribution.

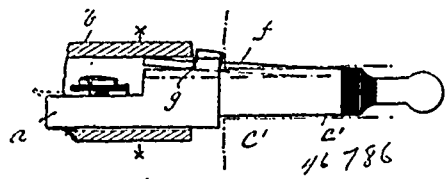
(*Système de distribution électrique.*)



The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Elihu Thomson, Swampscott, Massachusetts, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. The herein described method of supplementing the transfer of energy from one to another portion of a system of electrical distribution so as to avoid a drop of potential on the heavily loaded portion, consisting in varying an auxiliary magnetic field in accordance with changes in the relation of the load on the said portions of the system between which the transfer is to take place, and subjecting a moving conductor in circuit with an armature conductor of the transformer apparatus, to the action of such field. 2nd. In a system of electric distribution having portions of a circuit subject to changes in the relation or proportion of their loads and provided with an energy transferring apparatus between such portions, the herein described method of compensating or regulating for the tendency to drop of potential on a more heavily loaded side, consisting in varying the relative efficiency of the two sides of the transfer apparatus as electro-motive force generators, as and for the purpose described. 3rd. The herein described method of regulating the action of an energy transferring apparatus placed between different portions of a circuit subject to changes in their relative loads, consisting in subjecting one or both sides of the machines to the action of an auxiliary regulating coil or coils, and varying the current in such coil or coils in accordance with the changes in the relation of the loads in the two portions of the circuit between which a transfer is to take place. 4th. In a transfer apparatus connected to circuits as and for the purpose described, the method of regulating the capacity of the machine in transferring energy from a more lightly load to a more heavily loaded part of the system, consisting in subjecting a side or portion of the apparatus to the action of an auxiliary or compomnding or regulating coil carrying current varying with the load and adapted to change the relative efficiency of two sides of the transfer apparatus. 5th. In a system of electric distribution, the combination with two parts or portions of circuit fed from the same mains but subject to variations of the relative potential from normal, of a converter comprising two armature circuits or conductors connected to said parts and revolving in a common magnetic field, and an auxiliary magnetic field variable with a change in the relative load on the two parts and constituting a field for the conductor which forms an extension of the circuit of said armature conductor. 6th. The combination with outer and intermediate wires for different portions of a system of distribution, of an armature carrying different windings connected to said wires as described, an auxiliary armature, and a differential field magnet therefor wound with two coils, one carrying constant current and the other current varying with the potential on a side of the system, said auxiliary armature having conductors in the circuit of a winding on the former armature, as and for the purpose described.

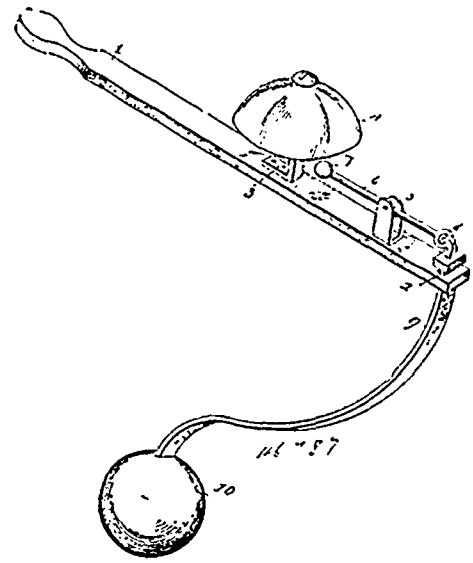
No. 46,786. Plug for Establishing Electrical Connection. (*Cheville pour établir des connections électriques.*)



The Bell Telephone Company of Canada, assignee of Charles W. Brown, both of Montreal, Quebec, Canada, 8th August, 1894; 6 years.

Claim.—1st. A plug for establishing electrical connection circular in cross section to be inserted in a correspondingly shaped socket and being flexibly expanded for the purpose set forth. 2nd. A plug for establishing electrical connections, circular in cross section to be inserted in a correspondingly shaped socket and having one or more flexible expanders for the purpose set forth. 3rd. A plug for establishing electrical connections, circular in cross section to be inserted in a correspondingly shaped socket and having one or more flexible expanders normally projecting beyond the periphery of the circular body, for the purposes set forth. 4th. A plug for establishing electrical connections, having a metallic body portion adapted to be inserted in a socket, and one or more flexible sections or expanders integral with said body portion, for the purpose set forth. 5th. A plug for establishing electrical connections, having a hollow metallic body portion adapted to be inserted in a socket and one or more flexible sections or expanders integral with said body portion and formed by slits in same. 6th. A plug for establishing electrical connections having a hollow metallic forward body portion adapted to be inserted in a socket, one or more flexible sections or expanders integral with said forward body portion formed by slits extending from the rear of said body portion toward its forward end and an insulated handle sleeve extending over the rear end of such forward body portion, for the purpose set forth. 7th. A plug for establishing electrical connections, having a metallic body portion adapted to be inserted in a socket and one or more flexible sections or expanders extending longitudinally of such body, for the purpose set forth. 8th. A plug for establishing electrical connections, having a hollow metallic forward body portion adapted to be inserted in a socket, one or more flexible sections or expanders integral with said forward body portion formed by slits extending from the rear of said body portion toward its forward end, the rear end or ends of such flexible expander or expanders being reduced in thickness and an insulated handle sleeve extending over the reduced end of such forward body portion, for the purpose set forth.

No. 46,787. Toy. (*Jouet.*)

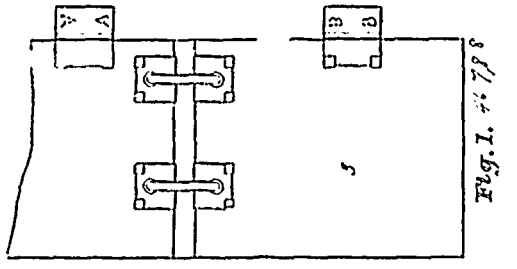


Edward Denis, Green Bay, Wisconsin, U. S. A., 8th August, 1894; 6 years.

Claim. The herein described toy, consisting of a strip or handle, with an opening therethrough, near one end thereof, a bell mounted on said strip or handle, a fulcrumed arm, having a hammer to strike

the bell and an elastic band or strap passing through the said opening and attached at its upper end to the said arm and having on its lower end a return ball, substantially as described.

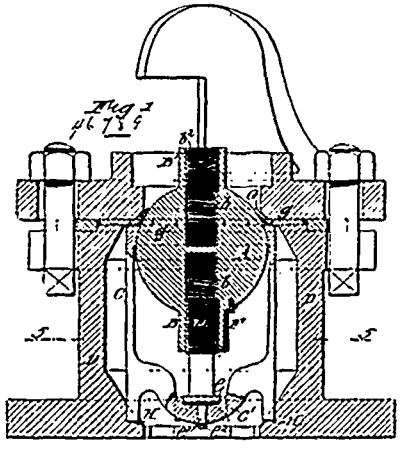
No. 46,788. Indexed File. (*Serre-file d' index.*)



Francis W. Briggs, Auburn, Maine, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. In an indexed file, a plate bent back upon itself, provided in the lower right hand corner of the upper side and the upper right hand corner of the under side with the same letter, substantially as and for the purposes set forth. 2nd. In an indexed file, the combination of a plate folded back upon itself, a suitable letter upon the upper and under sides of the said plate, and means for attaching said plate to the leaf, substantially as and for the purposes set forth. 3rd. In an indexed file, the combination of a plate turned back upon itself, having in the lower right hand corner of the upper side and in the upper right hand corner of the under side the same letter thereon, suitable clamps attached to the plates for fastening said tag to the blank, and means to prevent the blank from entering too far between the sides of the plate, substantially as and for the purposes set forth.

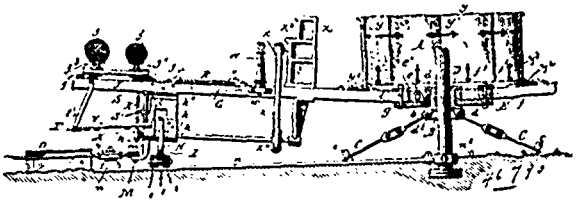
No. 46,789. Street Hydrant. (*Borne-fontaine.*)



Hugh Thomson, Thornton, Studley Park Road, Colony of Victoria, 8th August, 1894; 6 years.

Claim.—1st. In a street hydrant or fire-plug, a reversible valve (such as A) having oppositely projecting bosses, one on each side, together with screwed holes passing through said bosses, and continuing nearly to the centre of the valve, substantially as and for the purpose herein described. 2nd. In street hydrants or fire-plugs, the combination with a valve, having a screw-threaded hole (such as *b*) of a correspondingly threaded spindle projecting up from the bottom of a cage or other support (such as C) inside the fire-plug casing, substantially as and for the purpose herein described. 3rd. In a street hydrant or fire-plug, a cage (such as C) resting at its lower end in notches or recesses (such as H) cut or otherwise formed for the purpose on the inside of the casing of the street fire-plug, substantially as and for the purpose described. 4th. In a street or fire-plug, a casing having notches or recesses (such as H) cut or otherwise formed on the inside, and near the bottom thereof, substantially as and for the purpose herein described. 5th. In a street hydrant or fire-plug, a cage (such as C) adapted to rest against the lower end of the fire-plug casing and having upwardly projecting pins or spikes (such as *g*) adapted to be forced into the usual washer between the cover and casing of said fire-plug, substantially as and for the purpose herein described. 6th. In a street hydrant or fire-plug, a cage (such as C) having outwardly projecting feet (such as *h*) on its lower end, substantially as and for the purpose herein described. 7th. In a street hydrant or fire-plug, a cage (such as C) having thin outwardly projecting lugs (such as G) fitting between the usual washer and the top of the fire-plug casing, substantially as and for the purpose herein described. 8th. In a street, hydrant or fire-plug, a valve (such as A) having a screw-threaded spindle (such as E) fitted loosely into it and working within a correspondingly screw-threaded hole in a cage or other support (such as C) such hole being closed at its lower end and entirely enclosing the screw-threaded part of such spindle, substantially as and for the purpose herein described. 9th. In a street hydrant or fire-plug, a spring guard (such as F) secured to the valve and projecting into the threads on the spindle upon which such valve works, substantially as and for the purpose herein described. 10th. In a street hydrant or fire-plug, the combination of a screw-threaded spindle (such as E) adjustably connected to a fixed cage, bridge piece or other support, with a valve having a screw-threaded hole in which it works, substantially as and for the purpose herein described. 11th. In a street hydrant or fire-plug, a valve having a conical rubber or other packing ring fitted on to a tapering metal valve body and held down by washers thereon, the whole being constructed and arranged, substantially as and for the purpose specified.

No. 46,790. Merry-go-round. (*Tourniquet.*)



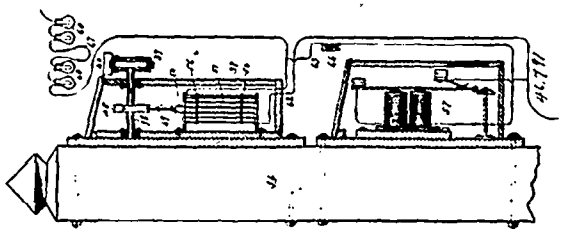
James Armitage, Allan Herschell and George Christy Herschell, all of North Tonawanda, New York, U.S.A., 8th August, 1894; 6 years.

Claim.—1st. The combination with the central post, of a sleeve mounted on the post and provided with an upper and lower flange, a divided hub embracing the sleeve between its flanges and provided with radial sockets, sweeps secured with their inner ends in said sockets, a horizontal circular track, legs secured to said sweeps near their outer ends and provided with supporting wheels running on said track, a grooved rim secured to said legs between the outer ends of the sweeps and the central post, and an endless driving belt or cable engaging with said grooved rim, substantially as set forth. 2nd. The combination with the central post, of a sectional hub arranged on said post and provided with an annular row of radial sockets, sweeps secured with their inner ends in said sockets, a horizontal circular track, legs secured to said sweeps near their outer ends and provided with supporting wheels running on said track, seats or figures mounted on rocking supports secured to said sweeps, eccentrics mounted on the axles of the supporting wheels and connected with the seats or figures, whereby a rocking motion is imparted to the seats or figures by the rotation of the supporting wheels, a grooved rim secure to an arm or extension formed on said legs adjacent to the supporting wheels, and an endless cable engaging with said grooved rim, substantially as described. 3rd. In a merry-go-round or roundabout, the combination with the centre post, the rotary frame pivoted on said post, and a wheel supporting the outer portion of said frame, of an eccentric secured to the axle of the supporting wheel, a rock shaft removably journalled in fixed bearing secured to said frame, a seat or figure secured to said rock shaft and a rod connecting the seat or figure with the eccentric, whereby a rocking motion is imparted to the seat or figure by the rotation of the supporting wheel, substantially as set forth. 4th. The combination with the center post, of a sectional hub arranged upon said post and provided with an annular row of upwardly projecting lugs forming open sockets between the lugs, plates secured to the tops of the lugs and closing the upper ends of the sockets and sweeps secured in said sockets, substantially as set forth. 5th. The combination with the center post and the sweeps, of a sleeve arranged on the post and provided with a depending lug, a hub arranged on the sleeve and carrying the sweeps, a divided clamping band embracing the post on opposite sides of said lug, and a bolt connecting the ends of the clamping band and passing through the lug of the sleeve, substantially as set forth. 6th. The combination with the centre post and the rotary frame, having sweeps which incline from their inner ends upwardly toward their outer ends, of supporting wheels having their axis arranged parallel with the sweeps and a circular track supporting said wheels, substantially as set forth. 7th. The combination with the rotary frame of a roundabout provided with seats and supporting wheels, of a sectional track supporting said wheels, a sectional bed supporting the track, the ends of the bed sections overlapping each other, channel shaped plates embracing the bed on opposite sides of the joints and bolts connecting the plates on opposite sides of each joint, substantially as set forth. 8th. The combination with the rocking figure or seat provided with a tapering pin, of an actuating rod having an eye which receives said pin, and a spring whereby said eye is pressed from the smaller toward the larger portion of the pin, substantially as set forth. 9th. The combination with the centre post and the rotary frame pivoted on said post and provided with a cable rim, of a guide frame pivoted with its inner end on said post, a guide pulley arranged on the outer end of the guide frame, and a cable passing around said

rim and guide pulley, substantially as set forth. 10th. The combination with the centre post and the rotary frame pivoted on said post and provided with an annular platform and with depending legs, of supporting wheels journaled on said legs, a cable rim secured to said legs and arranged underneath the platform and a cable passing around said rim, substantially as set forth. 11th. The combination with the centre post and the rotary frame pivoted on said post and provided with a grooved rim, of a guide frame pivoted with its inner end to the post by a divided collar and provided at its outer end with a vertical spindle, a guide pulley journaled on said spindle and a cable passing around the rim and guide pulley, substantially as set forth. 12th. The combination with the rotary frame provided with a grooved rim and a cable passing around said rim, of an upper and lower steadying roller bearing respectively against the upper side of one portion of the cable against the underside of the other portion of the cable and an intermediateer-steadying roller against which both portions of the cable bear, substantially as set forth. 13th. The combination with the central post and horizontal circular track, of a divided hub arranged on the post and provided with radial sockets, sweeps secured with their inner ends in said sockets and their outer ends extending over and above said track, legs secured to said sweeps and provided with supporting wheels running on said track, a grooved rim secured to said legs, an endless driving belt engaging with said grooved rim, a guard rim secured to the outer ends of said sweeps and arranged outside of the grooved rim, a sectional platform supported by the guard rim and extending inwardly over the grooved rim, seats or figures mounted on rocking supports secured to the sweeps above said platform and connected with the axles of the supporting wheels, and a sectional platform detachably secured to the sweeps between the rocking figures and the central post, substantially as set forth.

No. 46,791. Automatic Electric Signalling Device.

(*Appareil automatique de signal électrique.*)



Edward A. Hermann, St. Louis, Missouri, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. In a device of the class described, a solenoid comprising a spool having an axial bore, field coils wound upon said spool, plates insulated from each other and longitudinally positioned transversely of the coils, and bands whereby said plates are bound to the field coils. 2nd. In a device of the class described, a trolley pole and a head thereon, clamps fixed to said trolley pole, a triangular signal trolley brace pivoted in said clamps and spring actuated in a given direction, and a head mounted on said brace and adapted for electrical connection with a conductor. 3rd. In a device of the class described, clamps adapted for attachment to a trolley pole and provided with downwardly extending flanges transversely apertured and a signal trolley brace pivotally mounted in the apertures in said flanges. 4th. In a device of the class described, the combination of the semaphore, having alternately positioned symbols thereon, and slides mounted on opposite sides of said semaphore and having a longitudinal movement longitudinally thereof, which said slides are provided with transverse apertures adapted for alternate alignment with the alternate symbols. 5th. In a device of the class described, a supporting box, a rock-shaft mounted in said box, a semaphore mounted on said rock-shaft, slides mounted upon said semaphore, and a rod connecting said slides to the said box at a point eccentric to the axis of said rock-shaft. 6th. In a device of the class described, a semaphore, slides located on opposite sides of said semaphore, shafts connecting said slides, and anti-friction rollers mounted on said shafts and adapted to ride upon the upper edge of the semaphore. 7th. In a device of the class described, a semaphore pivotally mounted on a suitable support and provided with a slot concentric with its axis of oscillation, a pin mounted in said support and passing through said slot, slides mounted upon said semaphore, and a rod connecting said slides with said pin. 8th. In a device of the class described, the solenoid and solenoid bar, the semaphore pivotally mounted adjacent thereto by means of a shaft, and flexible connections between said drum and the solenoid bar. 9th. In a device of the class described, the signal trolley wire, the conductor wire leading therefrom, the incandescent lamps in circuit with the conductor wire, the solenoid in circuit with the conductor wire, the shaft adjacent to said solenoid, the semaphore mounted upon said shaft, the drum mounted upon said shaft, the connections between the solenoid and drum, the slides mounted upon the semaphore, and means for operating the same in combination with the main trolley pole and the signal trolley brace, as set forth, for the purposes stated.

No. 46,792. Art of Producing Metallic Zinc.

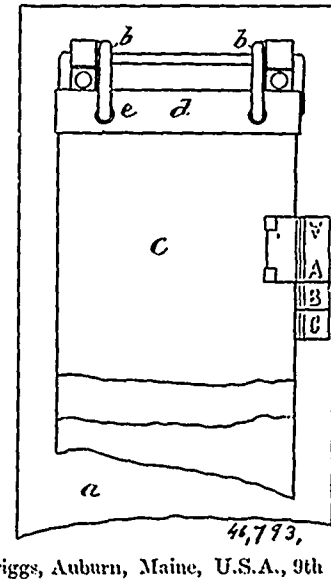
(*Art de produire du zinc métallique.*)

Parker Cogswell Choate, New York, State of New York, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. The hereinbefore described process of producing zinc anodes from an impure ore of zinc, which consists in first separating the zinc from the less volatile constituents of the ore by heating the ore in the presence of a reducing agent in a furnace to which air is admitted so as to volatize the zinc and those constituents of the ore more volatile than zinc and collecting the product in the shape of fume; second, reheating the fume mixed with carbon at a moderate temperature to revolatilize and eliminate the metallic constituents more volatile than zinc, and finally subjecting the fume to reduction and distillation and casting the resulting product into anode of suitable form, substantially as set forth. 2nd. The hereinbefore described process of producing commercially pure metallic zinc which consists in first separating the zinc from the less volatile constituents of the ore by heating the ore in the presence of a reducing agent in a furnace to which air is admitted so as to volatilize the zinc and those constituents of the ore more volatile than zinc and collecting the volatilized product in the shape of fume; second, reheating the fume mixed with carbon at a moderate temperature so as to revolatilize and eliminate the volatile constituents which are more volatile than zinc; third, subjecting the fume to reduction and distillation and casting the resulting product into anodes and finally depositing the zinc from the anodes by means of electrolysis, substantially as set forth. 3rd. The hereinbefore described process of producting commercially pure metallic zinc which consists in reducing and distilling zinc fume freed from its lighter soluble constituents and casting the resulting product into anode and separating the zinc from such anodes by means of electrolysis in the presence of an acid electrolyte. 4th. The hereinbefore described process of producing commercially pure metallic zinc which consists in immersing in a zinc sulphate electrolyte containing chlorine, a zinc anode so prepared as to contain no metal which is both soluble in such electrolyte and depositable by zinc upon itself therefrom, and depositing the zinc out of such anode, by means of electrolysis, substantially as set forth. 5th. The hereinbefore described process of producing commercially pure metallic zinc which consists in separating from the zinc as found in the ore those metals, such as antimony, arsenic, copper, gold, &c., which are depositable by zinc upon itself from an acid solution thereof, forming the zinc with the remaining accompanying metals into anodes and depositing the zinc from the anodes by means of electrolysis in an acid electrolyte, substantially as set forth. 6th. The hereinbefore described process of producing commercially pure electro-deposited zinc which consists in immersing in an acid electrolyte a zinc anode so prepared as to contain no metal which is both soluble in such electrolyte and depositable by zinc upon itself therefrom and depositing the zinc from such anode by means of electrolysis, substantially as set forth.

No. 46,793. Adjustable Binder for Index Files.

(*Reliure pour serre-file d'index.*)

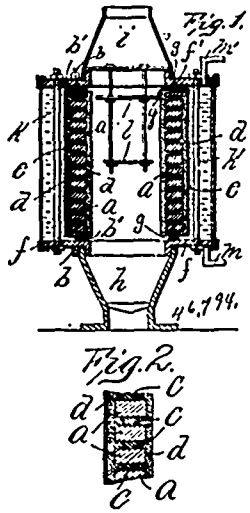


Francis W. Briggs, Auburn, Maine, U.S.A., 9th August, 1894; 6 years.

Claim.—In an index file, a series of sheets in combination with a metallic binder adapted to be bent around the edges of said sheets, the ends of said plate being adapted to be pressed against the underside of said sheets, and holes in said sheets, and binder to receive the clamping staples, substantially as and for the purposes set forth.

No. 46,794. Thermo-Electric Generator.

(*Générateur thermo-électrique.*)



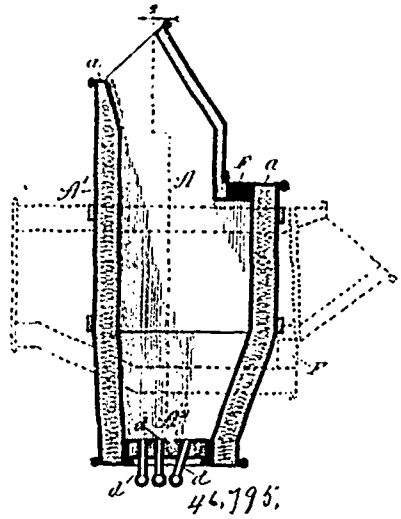
Harry Barringer Cox, Hartford, Connecticut, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. A thermo-electric pile coated internally and externally with fire-proof material such as baked clay or cement, as and for the purpose set forth. 2nd. The herein described mode of constructing thermo electric generators which consists in connecting and arranging the thermo-couples to form the pile, coating the same with fire proof material, such as cement or clay, and then hardening or baking the same, substantially as described. 3rd. The thermo-electric pile having a water jacket surrounding the same, so that the inner wall of the jacket is formed by the outer surface of the pile, substantially as described. 4th. A thermo-electric generator comprising the open pile arranged to be interiorly heated, the outer face thereof being coated with hardened cement, clay or the like and a water space surrounding the same, substantially as described. 5th. The thermo-electric generator having the open pile arranged to be interiorly heated, having its outer surface coated with cement, clay or other protective substance and provided with a metallic jacket, and a water space surrounding the same, substantially as described. 6th. In a thermo-electric generator, the open pile coated externally and interiorly with hardened refractory material and provided with an external metallic jacket, substantially as described. 7th. In combination, a thermo pile coated with hardened fire-proof material, as clay or other substance, an exterior metal jacket extending over the ends thereof, a water jacket around the pile, end pieces, packing between the end pieces and the ends of the pile, and means for holding the end pieces together, substantially as described. 8th. In a thermo-electric generator, the pile having a non-conducting coating of cement, clay or the like, provided with a metallic coating from which the electric connections of the pile are insulated, substantially as described. 9th. A thermo-electric pile having the exterior metal jacket, substantially as described. 10th. A thermo-electric pile having the open interior, and the metal jacket forming its outer wall, substantially as described. 11th. The herein described thermo-electric generator, substantially as described. 12th. The mode of making thermo-electric generators which consists in coating the pile with refractory material and placing a metal jacket around the same, substantially as described.

No. 46,795. Process for Smelting and Converting Ores. (*Procédé de fusion des minerais.*)

Charles Maurice Allen, Butte, Montana, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. The process of smelting and converting ores, which consists in supplying raw material to material in a convertor already in a molten condition, subjecting the old and new material to the action of a blast of air until a desired quantity is in a molten condition, changing the position of the molten material in the convertor to remove it from the action of the blast of air, drawing off the desired quantity of the molten material, and then restoring the remaining portion to its original position to receive additional raw material, substantially as described. 2nd. A tipping-tapping convertor having a smelting chamber for the reception of molten materials, tuyers for the admission of an air blast, a section of brick work arranged above any molten material in such chamber when in its initial working position and below the surface of any such material when the convertor is tipped, and means for tipping the convertor, substantially as described. 3rd. A tipping-tapping convertor having water jackets entirely surrounding its smelting chamber, hollow trunnions for supporting such convertors, tuyers for the admission of an air blast in the bottom of such convertor, blast pipe connecting such tuyers and leading in through the hollow trunnion, water supply and discharge pipes connected with such water chambers and leading in through the hollow trunnion, a section of such



convertor wall formed of brick work and arranged at a point above any molten material in such chamber when the convertor is in its initial working position and below such material when the convertor is tipped, and means for tipping the convertor, substantially as described. 4th. A rotatable convertor having a cylindrical converting chamber for holding molten material, tuyers in the cylindrical portion for the admission of an air blast, a section of brick work in the end of the convertor adapted to form a tap, and means for rotating the convertor, substantially as described. 5th. In a convertor, the combination of a cylindrical converting chamber having side and end water jackets composed of metal sheets with the edges of the inner sheets bent outwardly to overlap the edges of the outer sheets to which they are fastened whereby rivets and other holes in the inner sheets are avoided, and end sections adapted to be punctured or broken to form a tap, substantially as described. 6th. In a convertor, a cylindrical converting chamber having its sides water-jacketed in combination with truncated cone-shaped water-jacketed ends, substantially as described. 7th. In a convertor, the combination of a converting chamber, a dust chamber, a blast pipe for introducing air into the converting chamber, a dust pipe communicating with the dust chamber and blast pipe for introducing the dust into the converting chamber, and means located on such dust pipe for regulating the admission of the dust into the blast pipe, substantially as described. 8th. In a convertor, the combination of a converting chamber, a dust chamber, a blast pipe for introducing air into the converting chamber, and a pipe provided with valves communicating with the dust chamber and the converting chamber for conveying the dust from one to the other, substantially as described. 9th. In combination with an apparatus for treating ores or molten material, a bottom water jacket comprising an upper and a lower plate, a water supply pipe for admitting water into the space between the plates, and an overflow pipe extending up to near the bottom of the upper plate for the exit of water and steam from immediately below the upper plate, substantially as described. 10th. In combination with an apparatus for treating ores or molten material, a bottom water jacket comprising an upper and lower plate, a water supply pipe for admitting water into the space between the plates, and an overflow pipe corrugated or notched at its upper end and extending up to near the bottom of the upper plate for the exit of water, substantially as described. 11th. In apparatus for treating ores or molten material, the combination of side water jackets, and the removable bottom water jacket located within and surrounded by the side water jackets, the water chambers of the side jackets extending down to the plane of the lower face of the removable bottom, substantially as described.

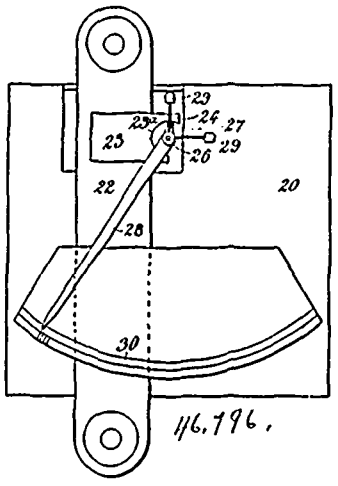
No. 46,796. Electrical Measuring Instrument.

(*Instrument électrique de mesurage.*)

Johannes Heinrich Freidrich Görges, Berlin, Germany, 9th August, 1894; 6 years.

Claim.—1st. In an electrical measuring instrument, the combination of a conductor, a portion of magnetic material attached thereto, having a semi-circular cavity in one end thereof, an armature mounted upon a shaft and adapted to move concentrically with the inner surface of the cavity, when influenced by a current transmitted through the conductor, a scale, and an index pointer to which motion is transmitted from the armature. 2nd. In an electrical

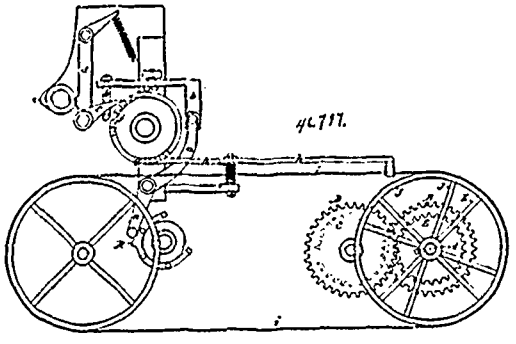
measuring instrument, the combination of a conductor, a portion of magnetic material, having a semi circular cavity in one end thereof, and so connected and related to the conductor that lines of force will



be produced therein at right angles to the direction of the current flowing in the conductor, an armature mounted upon a shaft and adapted to move concentrically, and to cut the lines of force through the cavity when influenced by a current transmitted through the conductor, a scale, and an index pointer to which motion is transmitted from the armature. 3rd. In an electrical measuring instrument the combination of a conductor, a portion of magnetic material attached thereto, an armature so placed as to be attracted by the lines of force set up in said portion of magnetic material by the current transmitted through the conductor, and means for visibly indicating the degree of attraction exerted by the magnetic portion upon the armature. 4th. In an electrical measuring instrument, the combination of a conductor, a portion of magnetic material attached thereto, and provided with means for equalizing the distribution of magnetism thereon, an armature so placed as to be attracted by the lines of force set up in said portion of magnetic material by the current transmitted through the conductor, and means for visibly indicating the degree of magnetic attraction exerted by the magnetic portion upon the armature.

No. 46,797. Machine for Knitting Stockings.

(*Machine à tricoter les bas.*)



Charles J. Filgate, Kingston, Ontario, Canada, 9th August, 1894; 6 years.

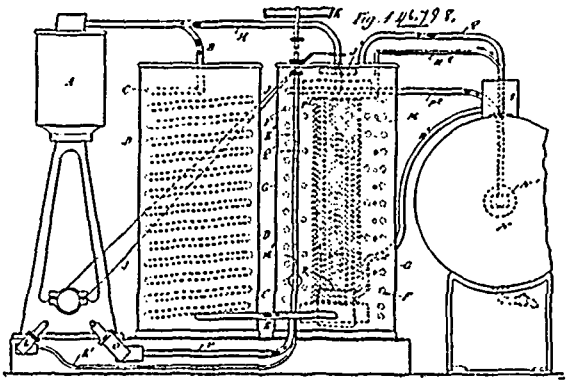
Claim.—The combination of the levers *a* and *b*, pawl c, lever *d*, and cam *c*, ratchet wheel *f*, cam-wheel *g*, lever *h*, and gears B, C, D and E, and loose pulley K, substantially as and for the purpose hereinbefore set forth.

No. 46,798. Treating or Aging Spirit.

(*Moyen de vieillir les liqueurs.*)

Richard Clarkson Scott, Liverpool, England, 9th August, 1894; 6 years.

Claim.—1st. Treating or aging spirit by spraying it in a stream of constantly changing air whose temperature is about 32° F. or below. 2nd. Treating or aging spirit by cooling it to about 32° F. or below and spraying it in a stream of constantly changing air whose temperature is about 32° F. or below. 3rd. Treating or aging spirit by spraying it by means of a stream of constantly changing air whose temperature is about 32° F. or below. 4th. Treating or aging



spirit by cooling it to about 32° F. or below and spraying it by means of a stream of constantly changing air whose temperature is about 32° F. or below.

No. 46,799. Process of Making Tanning Liquor.

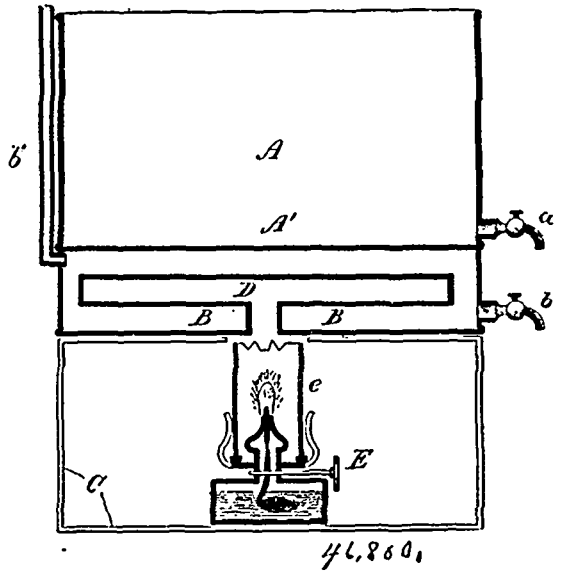
(*Procédé pour faire les liqueurs servant à tanner.*)

Martin Dennis, Newark, New Jersey, U.S.A., 9th August, 1894; 18 years.

Claim.—1st. The process of making a tanning liquor which consists in taking a solution of a normal morgame salt of chromium and renuering the normal morgame salt basic by the addition to the solution of a solution of the alkalies or the alkaline carbonates, substantially as described. 2nd. The process of making a tanning liquor which consist in taking a solution of normal chloride of chromium and rendering the normal chloride of chromium basic by the addition to the solution, of a solution of one of the alkalies or alkaline carbonates, substantially as described. 3rd. The process of making a tanning liquor which consists in taking a solution of normal chloride of chromium and rendering the normal chloride of chromium basic by the addition to the solution of soda or carbonate of soda, substantially as described. 4th. The process of making a tanning liquor which consists in dissolving chromic oxide in hydrochloric acid and then rendering the resulting chloride of chromium basic by the addition of soda or carbonate of soda and then adding chloride of sodium, substantially as described.

No. 46,800. Cheese-making Apparatus.

(*Appareil à faire le fromage.*)

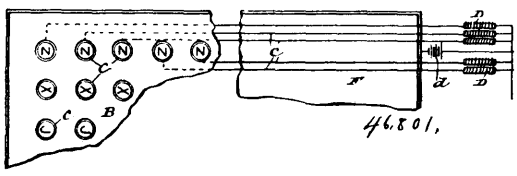


William T. Armstrong, Fresno, California, and Henry M. Wilson, St. Louis, Missouri, both in the U.S.A., 9th August, 1894; 6 years.

Claim.—A cheese-making apparatus consisting of a vessel having in its upper portion a chamber for the milk, and in its lower portion a compartment for the water, a drain pipe from the milk chamber, a

drain pipe from the water compartment and an inlet pipe in said compartment, the horizontally-disposed T-shaped heating pipe confined between the top and bottom walls of the water compartment, having its leg opening through the bottom of the water compartment and its horizontal arms having closed outer ends and extending into the body of water in said compartment, a foundation supporting said vessel and a lamp on said foundation in communication with the open leg of the heating pipe, substantially as herein described.

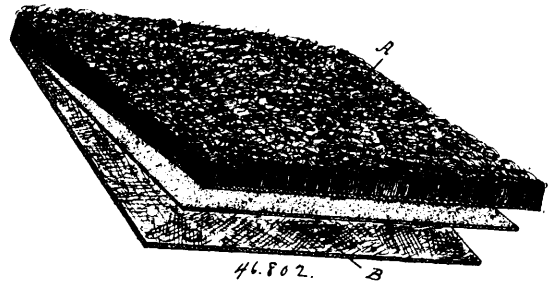
No. 46,801. Electrical Keyboard and Circuit-closing Devices. (*Clavier électrique et appareil à fermer les circuits.*)



Charles E. Allen, Washington, D.C., U.S.A., 9th August, 1894; 6 years.

Claim.—1st. In an electric keyboard for type-writing and type-printing machines, the combination of a base pan having two compartments, opening between said compartments, mercury or other fluid conductor in said pan, with banks or rows of keys or push-buttons, and conductors for said pan and keys, as set forth. 2nd. In an electric keyboard for type-writing and type-printing machines the combination of banks or rows of keys, a non-conducting plate or support for said keys, substantially as described, and conductors for said keys, with a base pan, mercury or other liquid conductor therein, the said liquid being a common terminal of all the key circuits of the keyboard, as set forth. 3rd. In an electric keyboard for type-writing and type-printing machines, the combination of a base pan having two compartments having communication through a passage and a stop-cock in said passage, mercury in one or both said compartments, with banks or rows of keys or push-buttons, and conductors for said pan and push buttons, as set forth. 4th. A base pan or support for electric keyboards, having two compartments therein and connected by suitable passage, one compartment adapted to support and hold the non-conducting key support, and the other provided with a top, vent stop therefor, as set forth. 5th. A keyboard of electric contact or circuit-closing keys in which a part of each key forms one metallic electrode of the individual circuit to which it belongs, the other electrode being a liquid or fluid electrode and forming a common terminal for the return or other side of all the individual circuits of the keyboard, as set forth. 6th. A key support for electric keyboards consisting of a non-conducting plate provided with parallel rows or chambers and grooves or channels in the plate between the said chambers, as set forth. 7th. A key support for electric keyboards consisting of a non-conducting plate provided with parallel rows of cylindrical chambers and channels or grooves in the underside of the plate between the rows of the cylindrical chambers and parallel with each other, as set forth. 8th. A mat or filler for an electric keyboard having a mercury or other liquid electrode, having rows of holes or openings therein, said holes or openings being connected by grooves or channels in the underside of the mat running both longitudinally and transversely thereof, or longitudinally, or transversely, as set forth. 9th. In an electric keyboard for type-writing and type-printing machines, the combination of a base pan having two compartments having communication through a passage, a stop-cock therein, and mercury or other electrode in one or both said compartments, with banks or rows of keys or push-buttons, and non-conducting support for said keys or push buttons, as set forth. 10th. In an electric keyboard for type-writing and type-printing machines, the combination of a base pan having two compartments, having communication through a passage, a stop-cock therein, mercury or other liquid conductor in one or both said compartments, and a vent and stop therefor in the rear compartment, with banks or rows of keys or push-buttons and non-conducting supports for said keys or push-buttons, as set forth. 11th. In an electric keyboard, the combination of a base pan having two compartments, opening between said compartments, and rows or banks of keys or push-buttons, with magnets, and conductors connecting said keys or push-buttons and base pan, or liquid conductor therein, with said magnets, as and for the purpose set forth. 12th. The combination of an electric key or push-button consisting of a head, a stem secured therein, a spiral spring surrounded said stem and secured in an opening in the upper end thereof, a collar surrounding said stem and to which the lower end of said spring is secured, whereby the stem, spring and collar become one and the same unbroken and continuous metallic circuit, and a contact co-operating with the lower end of the stem, as set forth. 13th. A circuit closer of the character described consisting of an insulating support or block, a chamber therein, a key in said chamber consisting of a head, a stem secured therein, a spiral spring surrounding said stem and secured in an opening in said head and the upper part of the stem, a collar surrounding said stem and fitting in the lower end of the chamber, and to which the lower end of the spring is secured, a receptacle in which the insulating block is set and supported, mercury or other liquid electrode in said receptacle, and suitable conductors, as and for the purpose set forth. 14th. An electric key or bush-button consisting of a head, a stem secured therein, a spiral spring surrounding said stem and secured in an opening in the upper end thereof, a collar surrounding said stem and to which the lower end of said spring is secured, whereby the stem, spring and collar become part of one and the same unbroken and continuous metallic circuit, as set forth.

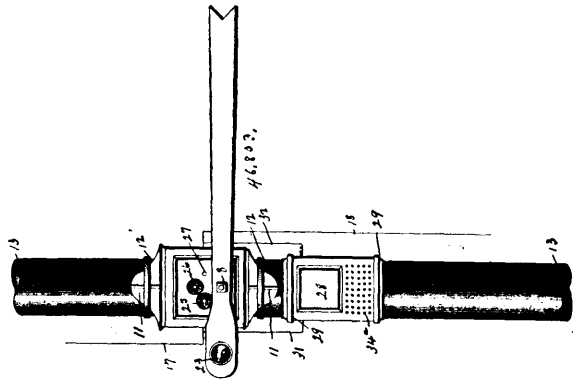
No. 46,802. Rug. (*Natte.*)



Andrew M. Newlands, Galt, Ontario, Canada, 9th August, 1894; 6 years.

Claim.—1st. In a rug or robe, the combination of a surface knit or woven in wool and having a knap in imitation of fur, a second surface knit or woven in wool and having a knap in imitation of fur, and a lining between impervious and sewn to the two surfaces, as described. 2nd. In a rug or robe, the combination of a long-haired surface knit or woven in wool and having a knap in imitation of buffalo or other long-haired fur, a second surface knit or woven in wool and having a knap in imitation of persian lamb or short-haired curly fur, and an impervious lining sewen between the two said surfaces, substantially as described.

No. 46,803. Automatic Electric Signalling Device for Crossings. (*Appareil automatique de signal électrique pour passages de chemin de fer.*)



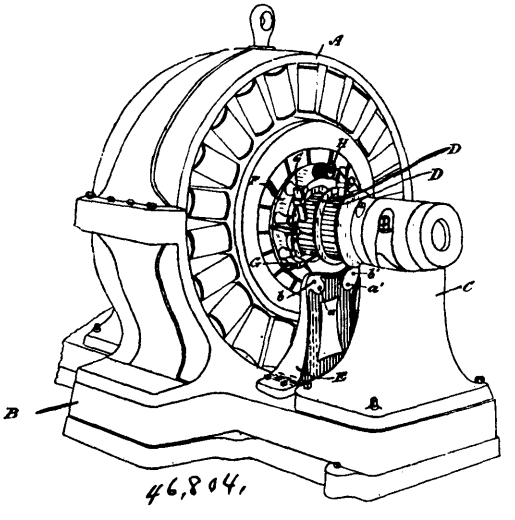
Edward A. Hermann, St. Louis, Missouri, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. The combination and arrangement of wires as shown on the drawing, to produce the signals described when the signal-arm with the mechanism actuating it is attached to a post. 2nd. The combination and arrangement of wires as shown in the drawing to produce the signals described, when the signal-arm, with the mechanism actuating it, is suspended between tracks. 3rd. The combination of an electric bell with a visible signal as described, and actuated by a part of the current which actuates the visible signal. 4th. The combination and arrangement of wires as shown on the drawings, connecting more than one signal wire to the electro-magnet M, actuating it at the same time, or different times, as described. 5th. In an automatic signalling device, an electro-magnet mounted in a box or enclosure constructed to be connected to a pole, a semaphore or arm having a bracket connected to one end, carried by the armature-shaft, stops or rings connected to the front side of said enclosure for limiting the movement of said arm or semaphore, and electrical conductors leading to and from said electro-magnets for energizing the armature for operating said semaphore or arm, substantially as set forth. 6th. In an electric signal device, an electro-magnet mounted in a suitable enclosure, in combination with a post or support, an arm having a suitable aperture and a glass

located in one end carried by the armature-shaft of the electro-magnet, a lamp connected to one side of said enclosure in such a position that when the arm is in a horizontal position the light reflecting from said lamp will pass through the glass in the end of said arm, stops or rings connected to the front of said enclosure for limiting the movement of the semaphore or arm, a box or enclosure having an electro-magnet and a bell located therein beneath the first mentioned box carrying the arm, and electrical conductors leading to and from said boxes for energizing the electro-magnets therein for moving the arm or semaphore and ringing the bell, substantially as set forth. 7th. In combination with an enclosure having an electro-magnet therein carrying an arm, of a box or enclosure having an electro-magnet and a bell located therein and the front side of said enclosure having a series of apertures to allow the sound reverberating from said bell to pass out from said enclosure, substantially as set forth. 8th. In combination with a box or enclosure having an electro-magnet located therein which carries a semaphore or arm, a lamp or other visible signal, the colour of which will be changed when the arm and bracket carried thereby passes over said lamp, substantially as set forth. 9th. In an electric signalling device, an electro-magnet having an armature with its ends double pointed, for the purpose of revolving readily in either direction, when the direction of the current through the field-coil of said electro-magnet is changed, substantially as set forth. 10th. In combination with a trolley-pole, a casing having a rock-shaft mounted therein, a signal-trolley connected to said shaft, a trolley-wheel revolubly mounted in a bifurcation formed in said trolley, and a spring connected to said shaft and said casing for holding said trolley-wheel in contact with the signal-wire from the time it reaches the run-on until it reaches the run-off, substantially as set forth. 11th. In combination with a trolley-pole, a casing having a rock-shaft mounted therein, a signal-trolley connected to said shaft, a trolley-wheel revolubly mounted in a bifurcation formed in said last mentioned trolley, a spring connected to said shaft and said casing for holding said trolley-wheel in contact with the signal-wire from the time it reaches the run-on until it reaches the run-off, a lug or projection connected to the interior of said casing, and a lug or projection connected to the shaft for engaging the first mentioned lug or projection and prevent the spring from throwing the signal-trolley past a vertical plane, substantially as set forth. 12th. In combination with a signalling device, a bracket 35 constructed of two bars 36 and 37, an ear clamped between the lower ends of said bars, the upper ends of said bars separated and held at the required distance apart by a stay or rod 40, and a clamp 39 constructed of a piece of wire tightly twisted around the span-wire adjacent the bar 37 to prevent said bar from sliding longitudinally on the wire, substantially as set forth. 13th. In an automatic signalling device, a signal-wire leading from an electro-magnet located in a box or enclosure to a guy-wire located above and transversely of the main conductors or trolley-wire, and thence downward at an angle over a bracket so as to form a gradual run-off, thence along beneath and at one side of and parallel with the main conductor, thence over a bracket and from said bracket to a guy-wire located a suitable distance from the bracket and a suitable distance above the lower end thereof so as to form a gradual run-on, substantially as set forth.

No. 46,804. Brush Supporters for Dynamos.

(*Porte-brosse pour machine dynamo électrique.*)

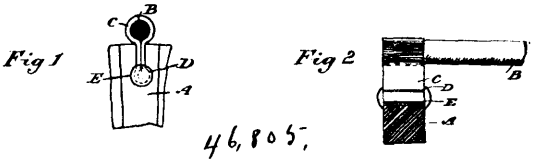


The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Axel Ekstrom, Lynn, Massachusetts, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. A brush support for dynamo electric machines consisting of a split ring surrounding the commutator, as described. 2nd. A brush support for dynamo electric machines consisting of two independent pivoted semi-circular portions making a split ring nearly surrounding the commutator, and means for securing the two portions together, as described. 3rd. A brush support for dynamo electric machines consisting of a ring having a bearing on a separate standard rather than on the armature shaft, and divided electrically into two portions by insulating material, as described. 4th. A brush support for dynamo electric machines consisting of a split ring supported by a separate standard rather than by a bearing on the armature shaft, and consisting of two portions each of which is pivoted to the standard, and a bolt or like means for securing their meeting ends together, as set forth.

No. 46,805. Commutator Connector.

(*Segment de commutateur.*)

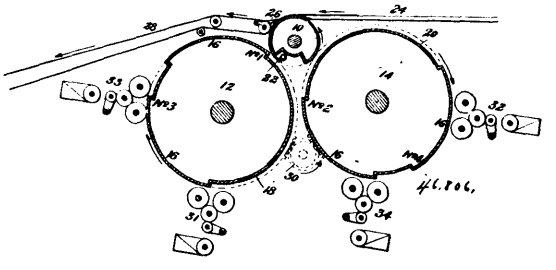


The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Edward D. Priest, Schenectady, New York, U.S.A., 9th August, 1894; 6 years.

Claim.—1st. A commutator segment having a slot leading from its outer surface and terminating in an enlarged recess, and means for joining an armature lead wire thereto consisting of a connector surrounding the lead wire, and passed through said slot into the recess and there provided with means for securing it in place. 2nd. A commutator segment slotted and recessed as described, and a connector for joining the lead wire thereto consisting of a strip of flexible good conducting metal having a contracted portion entering said slot, and enlarged end portions, one inclosing and holding the lead wire, and the other fitting said recess and securing the connector in place, as described. 3rd. A commutator slotted and recessed as described, a lead wire brought out to the outer surface of the segment above the slot, and a connector consisting of a strip of flexible metal bent to form a loop to inclose the lead wire, a contracted portion entering the slot, and a looped or enlarged portion fitting the recess in the segment and holding the connector in place. 4th. A commutator segment slotted and recessed as described, a connector holding the lead wire in place, and consisting of a strip of flexible metal connected to the lead wire and a plug securing the connector in the recess of the segment, as described. 5th. The herein described means for connecting lead wires for dynamo electric machines to the commutator segments consisting of a separate connector for each lead wire inserted in slots in the corresponding segments and attached to the lead wires, which are themselves outside the slots, and means for securing each connector independently to its corresponding segment so that the connectors may be individually and readily replaceable, as described.

No. 46,806. Multicolour Printing Press.

(*Presse à imprimer à plusieurs couleurs.*



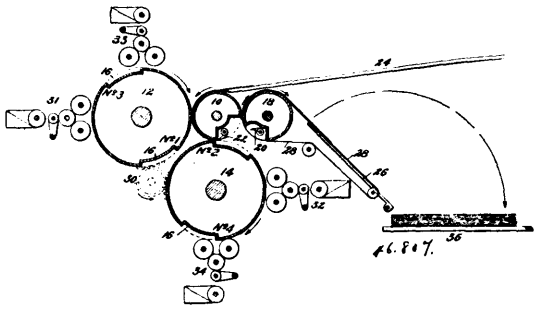
Emma L. Forbes, assignee of William C. Wendte, both of Boston, Massachusetts, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. In a multicolour press adapted for printing sheets, an impression-cylinder provided with grippers, in combination and in operative contact with two form-cylinders equal to each other in size and adapted to carry an equal number of forms, each form-cylinder being related in diameter to the diameter of the impression cylinder as half the whole number of forms plus one is to one, substantially as described. 2nd. A multicolour printing press consisting of an impression-cylinder provided with grippers, in operative relation with two form-cylinders bearing form supports each of length equal to the circumference of the impression-cylinder less its gap, and in addition a depressed delivery-space of like length on each form-cylinder, both delivery-spaces being adjusted angularly to pass the impression-cylinder when the same is delivering its sheet, substantially as described. 3rd. In a multicolour printing machine adapted for printing sheets, consisting of two form-cylinders of

equal size, each bearing forms and a depressed delivery-space, and driven in the same direction, in combination and operative contact with an impression-cylinder having its entire periphery occupied by an impression-surface and gap, and corresponding in size to the forms and gap-spaces upon the form-cylinders and also to the delivery-space and gap-space upon each of the same, and adjusted angularly to receive upon the leading edge of the impression-surface the leading edges of the said forms, first from one form-cylinder and then from the other, in alternating sequence, substantially as described. 4th. In a multicolor printing press for printing sheets, two form-cylinders of equal size provided with one or more forms and a depressed delivery-space on each, in combination and in operative contact with an impression-cylinder provided with an impression-surface and with grippers therefor, and arranged to make one revolution for each form on one of the form-cylinders, pending the several printings, and one beside for the delivery-spaces on both, pending the delivery of the sheet, substantially as described. 5th. A multicolor printing press consisting of an impression-cylinder in operative relation with two form-cylinders of equal size, each having forms of length equal to the packed portion of the impression-cylinder, and in addition a depressed delivery-space of like length on each form-cylinder, together with inking apparatus for each of the forms, and means for elevating and depressing said apparatus to ink or avoid any particular form as it passes, substantially as described.

No. 46,807. Multicolour Printing Press.

(*Presse à imprimer à plusieurs couleurs.*)



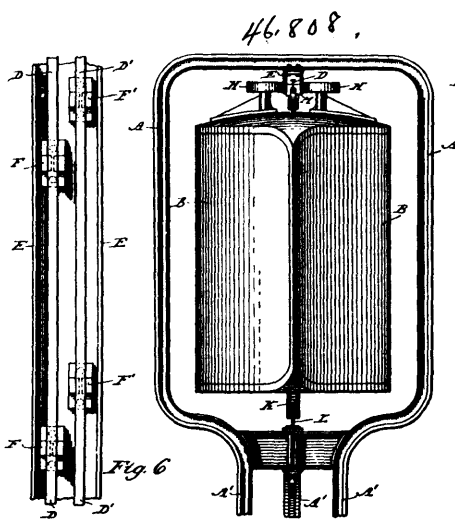
Emma L. Forbes, assignee of William C. Wendte, both of Boston, Massachusetts, U.S.A., 10th August, 1894; 6 years.

Claim—1st. In a multicolour press adapted for printing sheets, an impression cylinder provided with a gap and grippers, in combination and in operative contact with two form-cylinders of equal size and with one or more form supports separated by gap spaces upon each, one gap space and one form-support being equal in length to the circumference of the impression-cylinder, and with an endless delivery-belt of flexible material carrying grippers, and adjusted and timed to seize and carry the printed sheet face up from the impression cylinder to the delivery-tapes pending a partial revolution of the impression-cylinder, substantially as described. 2nd. In a multicolour press adapted for printing sheets, consisting of two form-cylinders of equal size covered with forms and driven in the same direction, in combination and in operative contact with an impression-cylinder having an impression-surface and gap, together equal in length to a form and gap space on the form-cylinder, and adjusted angularly to receive upon the leading edges of the impression-surface the leading edges of the several forms, first from one form-cylinder and then from the other in alternating sequence, substantially as described. 3rd. In a multicolour press for printing sheets, two form cylinders of equal size provided and covered each with one or more forms separated by the necessary gaps, in combination and in operation contact with an impression-cylinder, having its entire periphery occupied by an impression-surface and a gap containing grippers therefor, and arranged to make one revolution for each form on one of the form-cylinders only, pending the printing of all the colours by the two-form cylinders and the forms thereon, and the delivery of the sheet bearing said impressions from the press, substantially as described. 4th. A multicolour printing press for printing sheets, consisting of two form-cylinders, each of size sufficient to carry half the number of forms to be printed, an impression-cylinder having its entire periphery occupied by an impression-surface and a gap containing grippers, and arranged to make one revolution for each form on one of the form cylinders pending the complete printing and delivery of a sheet, with inking apparatus for each of the forms, and means for elevating and depressing said apparatus to ink or avoid any particular form as it passes, substantially as described.

No. 46,808. Electric Car. (*Char électrique.*)

Eben Moody Boynton, West Newburg, Massachusetts, U.S.A., 10th August, 1894; 6 years.

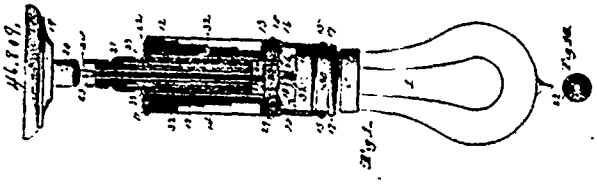
Claim.—1st. In a railway car, the combination with the car body of a frame fastened to the same, extending vertically through it and revolvable about a vertical axis, a supporting wheel at the base of such frame, and lateral supporting wheels in the frame above the car body, said wheels embracing the top guide-rail, the latter having



one or more electric conductors in its interior, substantially as set forth. 2nd. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it, and revolvable about a vertical axis, a supporting wheel at the base of such frame, and lateral supporting wheels in the frame above the car body, said wheels embracing the top guide-rail, the latter having a longitudinal groove cut through its inferior face, in which groove an electric conductor is held by lateral pressure, substantially as set forth. 3rd. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it and revolvable about a vertical axis, a supporting wheel at the base of such frame, and lateral supporting wheels in the frame above the car body, said wheels embracing the top guide-rail, the latter having a longitudinal groove lined with an elastic insulating substance, an electric conductor being held in the groove by the lateral compression of said insulator, substantially as set forth. 4th. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it and revolvable about a vertical axis, said frame supporting the top of the car by means of springs, a supporting wheel at the base of such frame, and lateral supporting wheels in the frame above the car body embracing the top guide-rail, the latter having one or more electric conductors in its interior, substantially as set forth. 5th. In a railway car, the combination with the car body, of a frame fastened to same, revolvable about a vertical axis and arranged to be capable of movement in a vertical direction independent of the car body, a column fastened to said frame, the top of the column being provided with arms carrying guide-wheels suited to embrace the top guide-rail, the latter having one or more electric conductors in its interior, springs transferring the weight of the car to the column, means for securing the central position of the frame, a shaft journalled in said frame, and a supporting wheel mounted on the shaft, substantially as set forth. 6th. In a railway car, the combination with the car body, of a frame fastened to same near one end thereof and revolvable about a vertical axis independent of the car body, electric motor field magnets fastened to the frame, a shaft journalled in same, and a driving wheel and an armature or armatures mounted on the shaft, one part of a friction clutch rotating with the driving-shaft and engaging with the other part of the friction clutch fastened on the driving-wheel, the latter being mounted loose on the shaft, substantially as set forth. 7th. In a railway car, the combination with the car body of a frame fastened to same near one end thereof and revolvable about a vertical axis independent of the car body, electric motors, field magnets fastened to the frame, a shaft journalled in same, and a driving-wheel and an armature or armatures mounted on the shaft, one part of a friction clutch rotating with the driving-shaft, and means for bringing the same in engagement with the other part of the friction clutch fastened on the driving-wheel, the latter being mounted loose on the shaft, substantially as set forth. 8th. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it and revolvable about a vertical axis, electric motor field magnets fastened to the frame, a shaft journalled in same, and a driving-wheel and an armature or armatures mounted on the shaft, lateral supporting wheels in the frame above the car body, said wheels embracing the top guide-rail, the latter having one or more electric conductors in its interior, substantially as set forth. 9th. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it and revolvable about a vertical axis, and arranged to be capable of movement in a vertical direction independent of the car body, electric motor field magnets, fastened to the frame, a shaft

journalled in same, and a driving-wheel and an armature or armatures mounted on the shaft, lateral supporting wheels in the frame above the car-body, said wheels embracing the top guide-rail, and *the latter having one or more electric conductors in its interior*, substantially as set forth. 10th. In a railway car, the combination with the car body, of a frame fastened to same, extending vertically through it, and revolvable about a vertical axis and arranged to be capable of movement in a vertical direction independent of the car body, said frame supporting the top of the car by means of springs, electric motor field-magnets fastened to the frame, a shaft journalled in same and a driving-wheel and an armature or armatures mounted on the shaft, lateral supporting-wheels in the frame above the car body, said wheels embracing the top guide-rail, and the latter having one or more electric conductors in its interior, substantially as set forth. 11th. In a railway car, the combination with the car body of a frame fastened to same extending vertically through it and revolvable about a vertical axis, and arranged to be capable of movement in a vertical direction independent of the car body, said frame supporting the top of the car by means of springs, means for securing the central position of the frame, electric motor field magnets fastened to the frame, a shaft journalled in same, and a driving-wheel, and an armature or armatures mounted on the shaft, lateral-supporting wheels in the frame above the car body, said wheels embracing the top guide-rail, and the latter having one or more electric conductors in its interior, substantially as set forth. 12th. In a single rail railway car, the combination with the car body, of a frame fastened to same near one end thereof, having guide-wheels engaging with an upper guide-rail, a driving-wheel having removable web-plates fastened to hubs revolving loose on a shaft situated in said frame, armature and field-magnet elements situated between said web-plates and one element fastened to the wheel-tire and the other element to the shaft, and means for fastening said shaft to the motor-frame or allowing it to rotate, substantially as set forth 13th. In a single rail railway car, the combination with the car body of a frame fastened to same near one end thereof, having guide-wheels engaging with an upper guide-rail, a driving wheel having removable web-plates fastened to hubs revolving loose on a shaft situated in said frame, armature and field-magnet elements situated between said web-plates, and one element fastened to the wheel-tire and the other element to the shaft, means for fastening said shaft to the motor frame or allowing it to rotate, and means for utilizing the rotations of the shaft for the operation of sundry appliances situated on the car, substantially as set forth.

No. 46,809. Regulating Sockets for Incandescent Lamps, etc. (*Douille de régulation pour lampes incandescentes, etc.*)



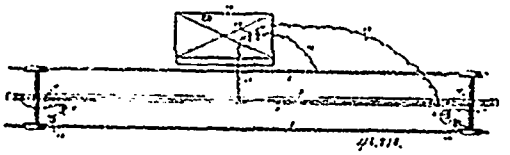
Elias Elkan Ries, Baltimore, Maryland, U.S.A., 10th August, 1894; 18 years.

Claim.—1st. The method of feeding incandescent lamps and other translating devices with alternating currents, which consists, first, in passing the current over a conductor located in an alternating magnetic field established by itself, and second, in supplying the lamp or translating device with the secondary current induced in said conductor or a portion thereof. 2nd. The method of feeding incandescent lamps and other translating devices with alternating currents, which consists, first, in passing the current over a conductor located in an alternating magnetic field established by itself, second, in causing said field to set up a counter electro-motive force or current in the said conductor, third, in supplying the lamp or translating device with the current induced in said conductor or a portion thereof, and fourth, in varying or regulating the supply of current to the said device by including a greater or less length of said conductor in the translating circuit. 3rd. The method of increasing the potential of the current supplied to incandescent electric lamps and other translating devices from a constant potential supply circuit, which consists in causing said current to flow through a given length, of a self inductive coil or winding, and including the translating device or devices in a circuit *embracing a greater length of the same winding*, substantially as set forth. 4th. The method of increasing and diminishing the potential of the current supplied to alternating current incandescent lamps and other translating devices from a constant potential supply circuit, which consists in transmitting said current through a given length of a self-inductive or counter electro-motive force coil, or winding, in causing the E.M.F., induced in the said winding, or a portion thereof to flow through the said translating device or devices, and in varying the potential of the current supplied to said translating devices, at will, by increasing or diminishing the length of the winding included between the terminals of the supply or the translating circuits, substantially as set forth. 5th. The method of varying the brilliancy of individual incandescent electric lamps operated by alternating currents, which consists in generating by induction within the lamp-socket itself a counter electro-motive force tending to oppose the flow of *current through the lamp filament, and in increasing or diminishing* the amount of counter-electro-motive force, so generated by correspondingly increasing or diminishing the length of wire within said socket, subjected to inductive action. 6th. The method of varying the brilliancy of an incandescent electric lamp operated by alternating currents, which consists in causing the current flowing to the lamp to generate within the lamp socket itself, an opposing or counter electro-motive force tending to oppose the flow of current to the lamp filament, and in increasing or diminishing the amount of counter-electro-motive force generated by varying the strength of field existing within said socket. 7th. The method of feeding incandescent lamps or other devices with alternating currents, which consists in passing the current along or over the winding of a self-induction, reaction or counter-electro-motive force coil, so as to set up a counter E. M. F. therein, and in supplying the lamp or translating device or devices with current by constituting the same part of a shunt circuit around a portion of the said winding. 8th. The method of varying the brilliancy of an incandescent electric lamp, which consists in establishing or producing in the lamp socket or holder itself, a counter-electro-motive force or current in opposition to the direct electro-motive force or current supplied to the lamp, and in varying the opposing electro-motive force or current supplied to the lamp, and in varying the opposing electro-motive force or current in accordance with the amount of light desired. 9th. The herein described method of electric lighting which consists in normally subjecting the lamp filament to two opposing electro-motive forces, and in producing the desired degree of light by subjecting the lamp to the action of the current established by varying the strength of one of the said electro-motive forces with respect to the other. 10th. A potential or current regulating apparatus for alternating current incandescent lamps and other translating devices, the same comprising a reaction or counter-electro-motive force coil having one end of its winding permanently connected with both the supply and translating circuits, a switch for cutting in and out more or less of the winding of the coil, and an intermediate connection between the coil and the other side of the supply or translating circuit in that portion of the coil traversed by the switch, substantially as and for the purpose set forth. 11th. A potential or current regulator, for alternating current incandescent electric lamps and other translating devices, the same comprising a core provided with a winding divided into suitable lengths or sections and having one of its ends connected with one side of the supply and translating circuits, a neutral connection from an intermediate point or section of the winding to the other side of the supply or translating circuit, a series of contacts or terminals connecting with and representing the divisions or sections of the winding or both sides of the neutral connections, and a switch arranged to traverse the said contacts and thereby increase or diminish the normal electro-motive force or current flowing from the supply circuit to the translating device or devices, substantially as set forth. 12th. A regulating socket for incandescent electric lamps, etc., provided with a counter electro-motive force coil or reaction device, and means for varying the counter electro-motive force generated by the said coil or device. 13th. A regulating socket for incandescent electric lamps and other translating devices having a counter electro-motive force coil or reaction device normally in series with the lamp filament or other device, and provided with means for varying the counter electro-motive force or current generated by the said coil or device. 14th. A regulating socket for incandescent electric lamps and other translating devices, said socket containing a reaction coil or counter electro-motive force generator normally in series with the lamp filament or other device and having a switch-device arranged to cut off or short circuit the said coil, substantially as and for the purpose described. 15th. A regulating socket for incandescent electric lamps and other translating devices, said sockets having a reaction coil of counter electro-motive force generator normally in series with the lamp filament or other device and having a switching device operated by a movement of the lamp or lamp holder itself for varying the amount of counter electro-motive force generated. 16th. A regulating socket for incandescent electric lamps and other translating devices, said socket comprising a stationary portion arranged and adapted to be secured to a suitable fixture, a movable portion containing the holder or receptacle for the lamp or other translating device, a variable counter electro-motive force generator or other current regulator, and suitable circuit making and breaking devices, the whole arranged to be operated by a movement of the lamp or translating device to establish the circuit and to vary the amount *of current flowing through the same in accordance with the* position of the lamp or translating device, substantially as described. 17th. A socket or holder for incandescent electric lamps and other translating devices supplied with alternating or intermittent currents, the same comprising a suitable holder for the translating device, a reaction or counter electro-motive force coil attached to and forming part of said holder, and wound in sections varying in their electrical resistance, electrical connections between the said coil and the translating device, whereby when said device is put into operation the coil will become active, and means for successively rendering the sections of the coil active or inactive. 18th. A regulating socket for alternating current incandescent lamps and other translating devices, the same comprising a holder or receptacle for

the lamp or other device, an inclosing case for the same, a reaction or counter electro-motive force coil within the said casing and having its winding divided into sections normally connected in series with each other and with the lamp or other device, a series of contacts within the said enclosing case to which the coil sections are connected, and a switch designed and adapted to turn on and off the supply of current, and to include more or less of the said coil sections in the lamp or supply circuit, substantially as set forth. 19th. A potential increasing regulating socket or apparatus for alternating current incandescent lamps and other translating devices, the same comprising a self-inductive coil or counter electro-motive force device having a single winding separated by a conduct or two divisions, a series of contacts connecting with different portions of the winding at each side of the dividing conductor, or switch arranged to traverse said contacts, and circuit connections, substantially such as described, whereby when the switch is moved over the contacts at one side of the dividing conductor the electro-motive force supplied to the translating device or devices is increased above that of the supply circuit, and when moved over the contacts at the other side of the dividing conductors it is reduced below that of the supply circuit, substantially as set forth. 20th. A socket for incandescent electric lamps comprising a lamp holder or receptacle, an enlosing case for the same, and a closed iron ring or core within said case, provided with a self-inductive winding designed and adapted to be included in circuit with the lamp when the latter is placed in its holder. 21st. A socket for incandescent electric lamps said socket being provided with a closed iron ring or core wound with insulated wire arranged and adapted to be included in series with the lamp, and with a switch for opening and closing the lamp circuit through said winding. 22nd. A socket for incandescent electric lamps provided with a closed iron ring or core, said core having a winding divided into a number of sections the ends of which are brought to a series of contact terminals arranged within the lamp socket, and a switch forming part of the socket and arranged and adapted to include more or less of the said sections in the lamp circuit. 23rd. A regulating socket for alternating current incandescent lamps and other translating devices having a divided iron ring or core wound with separate coils or sections, a series of contact terminals within the socket to which the ends of sections are connected, and a circuit closing switch arranged to traverse the said terminals and to include more or less of the coils in the translating circuit. 24th. In a regulating socket for incandescent electric lamps, etc., the combination, with the lamp holder or receptacle and its enclosing case, of a counter electro-motive force generator or converter enclosed thereby and arranged to have all or a portion of its winding included in the lamp or translating circuit, said generator or converter having its core built up of separate sections connected and assembled to form a closed laminated ring or core, substantially as and for the purpose set forth. 25th. In a regulating socket for incandescent electric lamps, etc., the combination, with the pivoted lamp holder or receptacle, of a switching device arranged and adapted to close the lamp circuit and to vary the brilliancy of the lamp, upon moving or rotating the lamp or its holder about its axis, substantially as set forth.

No. 46,810. Electric Railway Signal.

(*Signal électrique de chemin de fer.*)

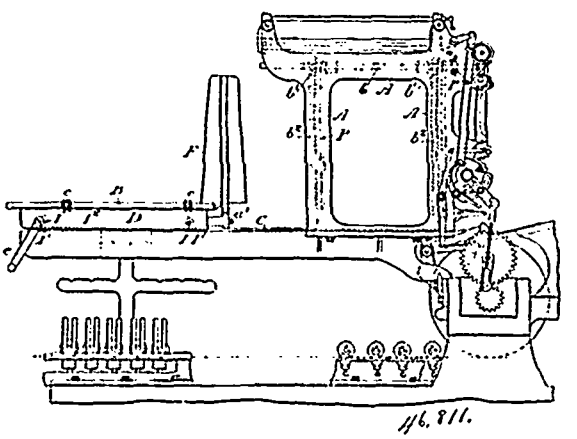


Frank Eugene Seagrave, Toledo, Ohio, U.S.A., 10th August, 1894; 6 years.

Claim. 1st. In an electric railway signal, in combination with two continuous rails and intermediate sectional metallic conductor, a yieldingly controlled contact wheel bearing upon the sectional conductor, a locomotive provided with an electrical generator and a signal mechanism, wires connected with the locomotive, metallic conductor and the signal mechanism. 2nd. In an electric railway signal, the two rails a central parallel conductor extending by sections the entire length of the side rails and electrical communication between one of the rails and the central conductor and the engine. 3rd. In an electric railway signal, the two rails a central conductor extending by sections the entire length of the rails, an engine provided with a revoluble wheel in contact with the conductor, an alarm mechanism within the cab, electrical communication with the conductor, and either rail or the alarm mechanism in the engine adapted to be actuated when the circuit is closed by a like engine or circuit closer upon the conductor and either rail upon the tracks, a station, and connections with the stations to establish communication with the conductor and rail and the alarm mechanism. 4th. In an electric railway signal, the two rails a central conductor extending in sections the entire length of the rails, and engine provided with a wheel in contact with the conductor, the alarm within the cab, electric communication with the conductor and either rail and the alarm, and a switch rail provided with a contacting projection to close when the switch is open and actuate the alarm mechanism. 5th. In an electric railway signal, the two rails a central conductor, extending in sections the entire length of the rails, an engine provided with a contacting conducting wheel bearing upon the sectional conductor, electrical communication with the engine in combination with a moving section of the track, a lock for securing the same in alignment and mechanism for completing the circuit with the engine, when the movable section of the track is moved out of alignment with the stationary tracks.

No. 46,811. Paper Feeding Machine.

(*Machine pour l'alimentation du papier aux presses*)



Thomas A. Briggs, Arlington, Massachusetts, U.S.A., 10th August, 1894; 6 years.

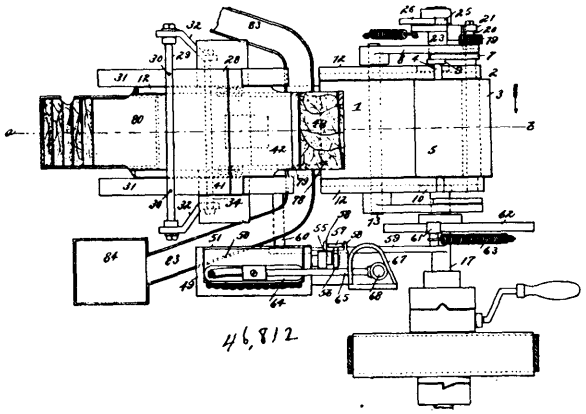
Claim. 1st. In a paper feeding machine, the combination of a carriage movable to and from said machine, two vertical paper guides of L shape in cross-section rising from the carriage and pivoted at the angle of the L to allow the paper to be piled against either of said guides, and a paper supporting table mounted on said carriage, as set forth. 2nd. In a paper feeding machine, the combination of a carriage movable to and from said machine, vertical paper guides rising from said carriage and movable laterally thereon, nuts connected to the bases of said guides, horizontal screws journalled on the carriage and engaging said nuts, and a paper-supporting table mounted on the carriage, as set forth and shown. 3rd. In a paper feeding machine, the combination of tracks under said machine and extending rearward therefrom, wheels mounted on said tracks, shafts connected said wheels and fixed thereto, bars coupling said shafts together, sprocket-wheels fixed to the shafts, a drive-chain connecting said sprocket-wheels, a crank applied to one of the shafts, and a paper supporting table mounted on the aforesaid coupling bars, as set forth. 4th. In a paper feeding machine, the combination of tracks under said machine and extending rearward therefrom, wheels mounted on said tracks, shafts connecting said wheels, bars coupling the shafts together, vertical paper guides rising from bases mounted on said shafts and movable lengthwise of the latter, nuts on said bases, screws journalled on the aforesaid coupling bars and engaging the said nuts, and a paper-supporting table mounted on the aforesaid coupling bars, substantially as described and shown. 5th. In a paper feeding machine, the combination of tracks under said machine and extending rearward therefrom, a carriage mounted on said tracks, vertical paper guides rising from bases mounted movable laterally on the carriage nuts on said bases, screws journalled to the carriage frame and engaging the nuts, and a swivel connecting the screws to each other at their inner ends, as set forth and shown. 6th. In a paper feeding machine, the combination of a plurality of paper supporting tables, movable interchangably to and from under the feed mechanism of said machine, hooks on said tables, horizontal shafts journalled to opposite sides of the frame of the machine, sprocket-wheels fixed to said shafts, plates suspended from the shafts, sprocket-wheels pivoted to the lower ends of said plates, sprocket-chains on said wheels adapted to engage the aforesaid hooks, and means for rotating said shafts as set forth. 7th. In combination with the main supporting frame of the paper feeding machine, horizontal shafts on opposite sides of said frame, sprocket-wheels attached to said shafts, and sprocket-chains running on said wheels, a vertically movable paper supporting table, metallic straps extending across the under side of said table and fastened thereto, and hooks hinged to the ends of said straps and adapted to engage and release the chains and provided with inward extensions bearing on the straps when the hooks engage the chains, substantially as described and shown.

No. 46,812. Cigarette Machine. (*Machine à cigarette.*)

Adolph Moondis, New York, State of New York, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. In a cigarette machine, the combination of the

terminal filler belt or apron fixedly secured to a table at its forward end, with said table, a tension roller to which the rear end of the apron is attached, an intermediate bunching roller adapted to

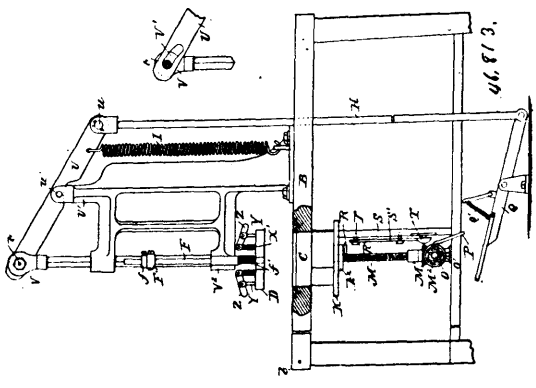


operate as and for the purposes set forth, the tension roller being provided with a take-up device consisting of the sliding arm 21, having a slot 22, means for moving said arm, rack 23 carried by said arm pinion 19 connected with the tension roller, and a guide pin 20 carrying the roller and mounted in the slot, as shown and described. 2nd. In a cigarette machine, the combination of the terminal filler belt or apron attached at its forward end to a table, with said table, and a take-up mechanism consisting of the following parts, to wit: a roller 2, to which the apron is secured having the pinion 19, and pin 20, an arm 21 provided with a slot 22, in which the pin is adapted to travel, a rack 23 intermeshing with the pinion 19, a pin 25 mounted on the arm 21, and main shaft 17, provided with cam 26, all of the said parts being arranged substantially as, and adapted to operate for, the purposes set forth. 3rd. In a cigarette machine, the combination of a table, a terminal filler belt or apron fixedly secured at its forward end to the table, a take-up roller to which said apron is secured, said apron being at its rear end arranged to have a pocket formed in it between the said roller and table, a bunching roller intermediate the tension roller and the table, and means for moving said bunching roller, pivoted arms connected therewith, and slides and links connected with said arms, all arranged for depressing the bunching roller and closing a filler containing pocket, then rolling the filler and wrapper forward over the table, and finally discharging the cigarette beyond the forward end of said table. 4th. In a cigarette machine, the combination of a table, a terminal filler belt or apron and a take-up device, the apron being fixedly secured at its forward end to the table and at the rear end to the take-up device, with an intermediate bunching roller 4, arms 7, slides 10, links connecting said slides and arms, levers 8 pivoted to the arms 7, said levers having a sliding movement in the main frame and provided with an arm 15, with a cam 16, mounted upon the main shaft 17, and adapted to act substantially as and for the purposes set forth. 5th. In a cigarette machine, a wrapper delivering device consisting of a divided and hinged travelling table, means for permitting the descent of the forward part while delivering the wrapper combined with means for moving the wrapper carrier to and fro, and means for raising the forward part of the carrier to a level with the other part, substantially as described. 6th. In a cigarette machine, a wrapper carrier and deliverer composed of two parts hinged together, one part being wider than the other, guides in the main frame in which the wider part travels, the narrow part of said carrier descending to deliver the wrapper, means for permitting said descent, combined with means for moving the wrapper carrier to and fro, and means for raising the narrow part of the carrier to a substantial level with the wider part, as shown and described. 7th. In a cigarette machine, the combination of a transversely divided wrapper delivering table hinged at the point of separation as described and having means for feeding the table forward and a sliding support for the forward portion of the table and means coacting therewith to permit the latter to drop into the wrapper delivering position, as set forth and shown. 8th. In a cigarette machine, the combination of a wrapper delivering device consisting of a table transversely divided the said portions being hinged together as shown, means for feeding the travelling table inwardly and guides or ways for supporting the forward portion horizontally until the wrapper has reached approximately the same vertical plane as the filler, all the parts being so arranged as that when the hinged wrapper table reaches such a position, the said hinged table will drop and deliver the wrapper to the filler, substantially as shown and described. 9th. In a cigarette machine, a wrapper delivering table arranged to travel as shown, the said wrapper delivering table being divided transversely, the divided portions being hinged together and both portions being arranged to travel in horizontal guides or ways, combined with a sliding auxiliary table for supporting the forward portion of the wrapper table during its movement toward the filler and means, substantially as shown and described, for arresting the movement of the auxiliary table in the manner and for the purposes set forth. 10th. In a cigarette machine, the combination of a travelling wrapper delivering table, horizontal guides as shown upon which said table moves, the said wrapper delivering table being divided transversely, and the two parts being hinged to each other at the point of division, an auxiliary table for supporting the wrapper delivering table, the said auxiliary table having a downwardly extending lug, stops upon the main frame to regulate the travel of the auxiliary table, and means for operating the traveling and auxiliary tables, as and for the purposes set forth. 11th. In a cigarette machine, the combination of a wrapper delivering table arranged to travel as shown and divided transversely, the two portions being hinged together, an auxiliary table, and means for moving said tables toward the filler in conjunction with each other, and away from the filler successively, as and for the purpose set forth. 12th. In a cigarette machine, a jointed wrapper delivering table or carrier, horizontal guides in which said table travels toward the filler, a sliding auxiliary table below the same and operating therewith, means for operating said sliding auxiliary table, and means for moving the wrapper carrier horizontally toward the filler, whereby the wrapper is lowered, as and for the purpose set forth. 13th. In a cigarette machine, the combination of a wrapper delivering carrier or table transversely divided as shown, the divided portions being hinged to each other and both of such portions having longitudinal tracks or ways, an auxiliary table arranged to travel in said ways and to extend normally across the adjoining edges and hold them in fixed and parallel position, a lug extending downwardly from the auxiliary table, pins arranged upon the main frame and means substantially as shown and described, for impelling the carrier toward the rolling table for delivering the wrapper and of withdrawing the carrier after the wrapper has been engaged by the roller. 14th. In a cigarette machine, a wrapper delivering table having a vertically movable portion, means for delivering the wrapper to the filler by a downward movement of said vertically moving portion, means for withdrawing said table horizontally and means for pressing the vertically movable portion of said table slightly upwardly to bring it against the outer edge of the wrapper when leaving. 15th. In a cigarette machine, a wrapper delivering table having a portion which descends, and means to permit the descent thereof to deliver a wrapper to its filler, combined with a terminal belt or apron, a rolling table, and a bunching roller, which rolls the filler preliminarily and forms the cigarette subsequently by continuous sliding and reciprocating movements and means for imparting such movements to said roller, as set forth and shown. 16th. In a cigarette machine, the combination of a table, a tension roller and a terminal filler belt or apron fixedly secured at one end to the table and at the other end to the tension roller, an intermediate reciprocating bunching roller which engages the apron and rolls the filler, means for operating the same, a wrapper delivering carrier or table having a vertically moving portion which descends to deliver the wrapper when the filler is ready to be rolled therein, means to permit the descent of said portion and means to withdraw said table upon the advance of the bunching roller, as and for the purposes set forth. 17th. In a cigarette machine, the combination of a cigarette rolling table, a wrapper delivering table having a hinged portion which descends as shown, a support for said hinged portion to permit it to descend by a vertical movement upon the cigarette rolling table, a reciprocating bunching roller, an apron in which the cigarette is rolled, a paster which gums the edge of the wrapper, and means for operating said roller and paster, as and for the purpose set forth. 18th. In a cigarette machine, the combination of a wrapper delivering table divided transversely as shown, the two portions being hinged together, means for raising and lowering the forward part of the wrapper delivering table, means for impelling the wrapper table toward the cigarette filler, a pasting device and means for causing it to descend upon the wrapper to gum it, as set forth. 19th. In a cigarette machine, the combination of a horizontally reciprocating wrapper delivering table or carrier, a pasting brush arranged to paste the outer edge of a wrapper while it is held on the delivery table, and means to bring the said brush into contact with the wrapper, as and for the purposes set forth. 20th. In a cigarette machine, the combination of a wrapper delivering table or carrier having a hinged portion adapted to descend and means for permitting the descent thereof, a pasting device consisting of a swinging and vertically descending brush arranged to paste the outer edge of the wrapper while it is on the wrapper carrier, and means for actuating said brush, as and for the purposes set forth. 21st. In a cigarette machine, the combination of a reciprocating wrapper delivering table or carrier, a pasting device provided with a pasting brush which descends upon the wrapper while the wrapper is on the carrier and which maintains a fixed position while the wrapper carrier is retreating and until the wrapper is drawn therefrom by the rolling devices, and said rolling devices, and means for actuating said pasting device, as and for the purposes set forth. 22nd. In a cigarette machine, a pasting device consisting of the brush 64, arm 65, rod 68, a cam 67, adjacent to the arm 65, and having a guide or way 66, in which the arm 65 works, and means substantially shown and described for elevating and depressing the rod 68, for feeding and withdrawing the paste brush, as set forth. 23rd. In a cigarette machine, the combination of a stationary gum box 49, ribbed feeding roller 50 therein, ratchet wheel 54 connected with said roller, lever 56 having a suitable pawl for intermeshing with said ratchet wheel,

a sliding arm 57 arranged to operate lever 56, and means substantially as shown and described for elevating the arm. 24th. In a cigarette machine, a rolling apron, a tilting cutting table adjacent thereto, and having a knife edge, and a cutter arranged to receive the cigarettes from the rolling apron and to cut and discharge the same, combined with an abutment to receive the cigarette as the knife cuts it and means for operating the tilting table, substantially as shown and described. 25th. In a cigarette machine, the combination of a rolling apron, a tilting cutting table adjacent to said apron and provided with knife edges arranged to move in the arc of a circle as described, with stationary knife edges at the side of the tilting table, and coacting with said moving knife edges, and means for operating the tilting table, as shown and set forth. 26th. In a cigarette machine, the combination of a tilting cutting table provided with semi-circular knife edges one arranged on each side thereof, stationary semi-circular cutting knives, also arranged on each side thereof, the tilting table being mounted in the main frame of the machine, a cam mounted upon the main shaft, and a connection between the tilting table and the cam whereby said tilting table is actuated, as and for the purposes set forth. 27th. In a cigarette machine, the combination of the stationary table 3, a rolling apron, an inclined way or chute 80, with an intermediate tilting and delivering table, having knives and stationary knives, all arranged to take the cigarettes from the rolling table, cut the butts therefrom, and deliver the completed cigarette to the way or chute aforesaid, and means for operating the titling table. 28th. In a cigarette machine, the combination of the stationary cigarette rolling table 3, a rolling apron, a tilting table in front of the rolling table provided with knife edges 78 and 82, stationary knife edges on both sides thereof having means coacting with knife edges 78 and 82, an inclined way or chute for receiving the completed cigarette, and means substantially as shown and described, connected to the main shaft of the machine for operating to tilt the cutting table, sever the butts and cigarette and deliver the completed cigarette to the inclined way, all arranged substantially as and for the purposes set forth. 29th. In a cigarette machine, a cutting device consisting of a tilting table or frame upon which are mounted two semi-circular cutters 78, means for operating the tilting table, two stationary cutters mounted on the main frame of the machine to coact with the movable cutters, and means carried by said cutters for mutilating the butts of the cigarette, all arranged substantially as set forth and shown. 30th. In a cigarette machine, the combination of the cigarette cutter consisting of a tilting table having two semi-circular cutters, means for operating the tilting table, and two stationary semi-circular cutters adapted to co-operate with the movable cutters, the movable cutters carrying knives 82, and the stationary cutters having stops 79^a for mutilating the butts when separated from the cigarettes, as and for the purpose set forth. 31st. In a cigarette machine, the combination of the tilting cutting table, having knives or cutter 78, said cutters carrying knives 82, means for operating the tilting table, with the stationary semi-circular cutting knives 79 provided with stops 79^a, and arranged to coact with knives 78 and 82, as and for the purpose set forth. 32nd. In a cigarette machine, the combination of the cigarette cutting device, means substantially as shown and described for mutilating the butts, independent chutes leading from the cutting device for receiving said butts and delivering them to receptacles arranged on one or both sides of the machine, and a chute for carrying away the completed cigarette, as set forth. 33rd. In a cigarette machine, the combination of a tilting table having knives 78, knives 79, means for operating the tilting table, and the butt mutilating device consisting of the knives 82, joined with knives 78 and stops 79^a, joined with knives 79, as and for the purposes set forth.

No. 46,813. Cigarette Wrapper Cutting Machine.

(*Machine à couper les enveloppes de cigarettes.*)

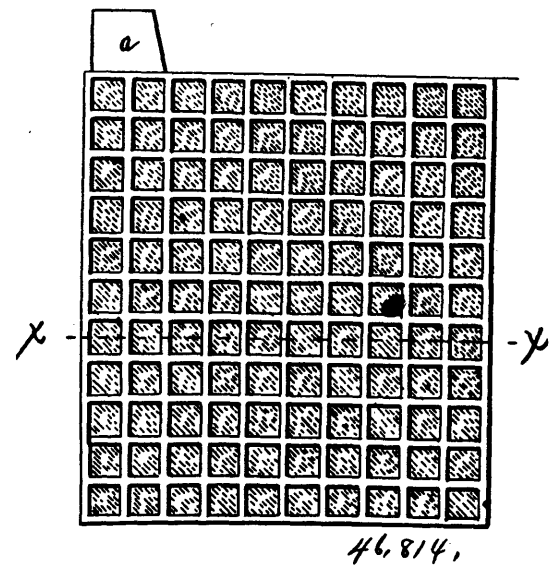


Adolph Moonelis, New York, State of New York, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. In a maching for cutting the wrappers of cigarettes, the combination of a vertically moving cutter, and means for operating the same, a concealed discharge plate placed within the cutter and positively actuating means for moving the discharge plate outwardly and ejecting the wrapper during the descent of the cutter, substantially as shown and described. 2nd. In a machine for cutting the wrappers of cigarettes, the combination of the vertically moving cutter, means for operating the same, a discharge plate incased within the cutter, a stripper surrounding and of the same shape as the cutter, and means for moving the discharge plate outwardly by coaction with the stripper, all the parts being adapted to operate, substantially as and for the purposes set forth. 3rd. In a machine for cutting the wrappers of cigarettes, the combination of a table having an opening as shown, a vertically movable cutter, means for operating same, and a stripper or holding frame having means for moving the said holding frame in a vertical path, the said frame having an opening corresponding with the opening in the table, as and for the purposes set forth. 4th. In a machine for cutting the wrappers of cigarettes, the combination of the apertured table, the stripper or holding frame, and the cutter having means for moving it vertically relatively to the holding frame and table, and so as to co-operate with them in the cutting operation, as and for the purposes set forth, 5th. In a machine for cutting the wrappers of cigarettes, the combination of a table having an oblong rectangular opening whose longer sides are set at an angle, approximating forty-five degrees to the front edge of the said table, an open stripper or holding frame, and a rectangular cutter within the stripper and corresponding in size to the rectangular opening of the table, and means for operating the cutter all adapted to operate, substantially as and for the purposes set forth. 6th. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening set at an angle to the front of the table, and provided with cutting edges, a rectangular cutter corresponding in shape, size and position with the aforesaid rectangular opening, and provided with knife edges, an open stripper or holding frame surrounding the cutter, and a rectangular discharge plate within the cutter, and means for operating said cutter and said discharge plate, all arranged substantially as and for the purposes set forth. 7th. The combination of an open stripper or holding frame, a hollow cutter, means for operating it, a discharge plate within the cutter, and means connected with said discharge plate and operated by said stripper to eject a wrapper from the cutter, substantially as described. 8th. In combination with an open stripper or holding frame, a hollow cutter, means for operating it, a discharge plate within the cutter, and levers carried by the cutter and connected with the discharge plate and extending over the edge of the stripper, whereby when the parts descend the levers engage the stripper and eject the discharge plate from the cutter, substantially as described.

No. 46,814. Electrodes for Secondary Batteries.

(*Electrode pour piles secondaires.*)

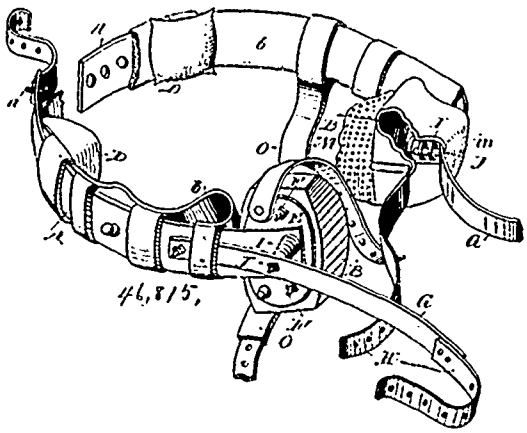


Henry C. Porter, Chicago, Illinois, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. An electrode for secondary batteries, comprising a conducting plate or support, active material or materials to become active secured thereto, a layer of fibrous glass wool or similar material upon the faces of the conducting plate and non-conducting, grids enclosing the conducting plate and glass wool as set forth. 2nd. An electrode for secondary batteries comprising a conducting plate or support, active material secured thereto, a layer of glass wool or similar material upon the faces of conducting plate and perforated grids having transverse fingers or ribs enclosing the conducting plate and glass wool, as set forth. 3rd. An electrode for secondary

batteries comprising a conducting plate or support, active material secured thereto, a layer of glass wool or similar material upon the face of the conducting plate, and perforated grids having transverse fingers or ribs, and side flanges enclosing the plate and glass wool, as set forth. 4th. An electrode for secondary batteries, comprising a conducting plate slotted vertically, active material secured thereto, a layer of glass wool or similar material upon the face of the conducting plate and grids having fingers extending transversely across the same and into the slotways in the conducting plate for the purpose of producing a vertical support for the active material, as set forth.

No. 46,815. Truss. (*Bandage herniaire.*)



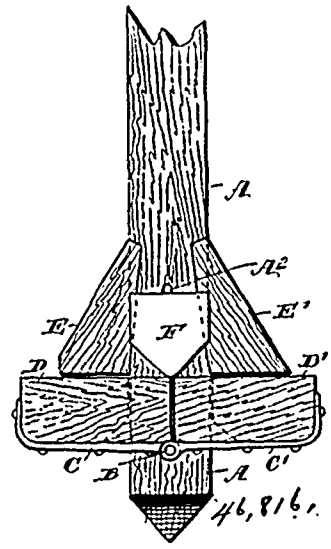
Carl Berthold Rostel, Jacksonville, Oregon, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. A truss band provided with a spring pressed pad B, having a loose covering *m*, the soft movable facing M, for said pad, the spring G, secured to the truss and crossing and bearing upon said pad, and provided with means for securing its outwardly projecting end to the opposite end of the truss band, substantially as herein described. 2nd. A truss consisting of a flexible metallic band, plates adjustably attached to its ends, carrying truss pads adapted to press upon the part to be treated, flexible metallic bands G, attached to one end of the truss band, having an inward curvature between the ends, and straps and buckles by which the outer ends are drawn down against the opposite end of the truss belt, whereby the convex portion of the spring is caused to press upon the truss pad and hold it yieldingly in contact with the part, substantially as herein described. 3rd. A truss consisting of a flexible metallic band with enclosing protective case, plates secured to its ends with truss pads adjustable thereon with relation to the band, and adapted to press upon the part to be treated, springs G, having one end attached to one end of the truss band, curving inwardly with the convex portion adapted to press upon the truss pad, and the outer end provided with a flexible strap adapted to connection with buckles upon the opposite end of the truss belt, whereby the springs are drawn down, in combination with coil springs interposed between the truss pad and the flat springs, whereby the pressure of the latter is transmitted through the coil springs to the pads, and the latter are allowed to automatically adjust themselves to movements of the person, substantially as herein described. 4th. A truss consisting of a flexible metallic band, with suitable enclosing and protective casing, truss pads and adjusting plates by which they are attached to the ends of the truss band, spring pressure plates having one end connected permanently with one end of the truss belt, and the other provided with flexible straps which are connected with buckles upon the opposite end of the belt, said spring plates having an inward curvature at the point where they connect with the truss pad, and an outward or convex curvature forming a reverse curve which passes over and around the hip at the point of attachment to the truss belt, substantially as herein described.

No. 46,816. Feet for Dredges. (*Coussinet pour dragueurs.*)

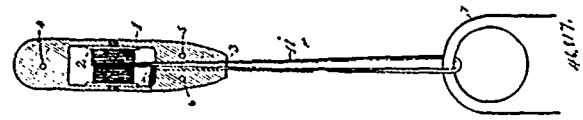
Edward Woods, Sault Ste Marie, Michigan, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. A foot for dredges, provided with wings pivoted to each other, and adapted to bear the one upon the other in their open position, substantially as herein described. 2nd. A foot for dredges, comprising a post, and wings pivoted to each other on the said post, and adapted to bear the one upon the other in their open position, substantially as shown and described. 3rd. A foot for dredges, comprising a post, wings pivoted to each other on the said post, and adapted to bear the one upon the other in their open position, and blocks held on the said post, and adapted to limit the upward swinging motion of the said wings, substantially as shown and described. 4th. A foot for dredges, comprising a post, wings pivoted on the said post and adapted to open and close, and blocks



fitted to slide on the post, and adapted to engage the inner edges of the said wings to fill the gap between the latter when they are in a closed or folded position, substantially as shown and described.

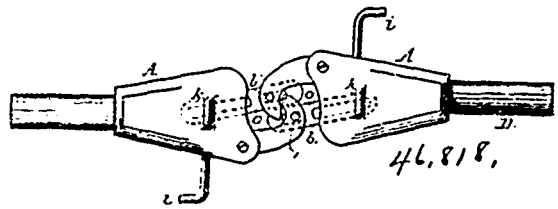
No. 46,817. Buoy for Locating Wrecks and Attaching Cables thereto. (*Bouée pour indiquer un naufrage et placer un cable.*)



Fread Canney, Detroit, Michigan, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. In combination, with a buoy having a hollow interior and a reel therein, a double line wound on said reel, a strap terminating in an eye secured to a vessel, the said line being passed through the eye and adapted to be run therethrough, substantially as described. 2nd. In combination, with a vessel, a lifting strap secured to the hull thereof and terminating at its upper end with an eye, a cord passing through said eye, a buoy provided with a reeling spool adapted to reel said cord and to float means for detachably securing the buoy to the hull of the vessel in a position to release itself therefrom and float to the surface, substantially as described. 3rd. In combination with a buoy having a reel therein, a double line wound on said reel and connected by a protruding bight of said cord with the hull of a vessel, by a connection such that the cord can be run or reeved therethrough, substantially as described.

No. 46,818. Car Coupler. (*Attelage de chars.*)



Charles S. Park, Montague, Massachusetts, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. In a car coupler, the combination, with the draw-head, provided with a slot in its bottom, as described, of a hook jaw pivoted in the draw-bar having a tongue or tail piece extending well into the cavity of said draw-head and a pawl thereto pivoted, as described, adapted when said slot is open, to drop into it and lock the said jaw against lateral movement, as and for the purpose set forth. 2nd. The combination, with the draw-head described, provided with a slot, a cam for unlocking the jaw fixed on a crank rod pivoted to said draw-head and the pivoted jaw provided with the pawl pivoted thereto, as and for the purpose set forth. 3rd. The combination, with the draw head formed as described, the jaw and

the pawl pivoted thereto, of a link confined to the said jaw, with suitable play, whereby when said jaw, locked to position, and link are approaching a corresponding jaw, said link may perform the function of closing said corresponding jaw by engaging the tongue on tail piece of said jaw, substantially as set forth.

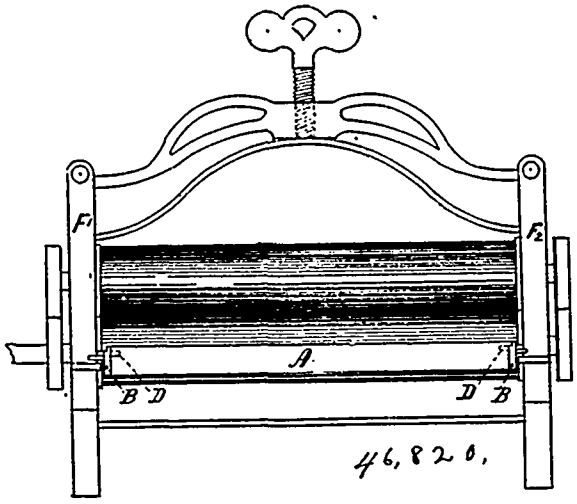
No. 46,819. Refrigerating Composition.

(*Composé refrigératif.*)

Martin Warmer, Yorktown, Indiana, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. The within described refrigerating liquid or mixture, composed essentially of a volatile liquid mixed with other liquids, miscible with the volatile liquid, but not a solvent thereof, substantially as set forth. 2nd. The within described, refrigerating liquid or mixture, composed essentially of a volatile liquid mixed with other liquid having a different degree of mobility than the volatile liquid and miscible therewith, but not a solvent thereof, substantially as set forth.

No. 46,820. Clothes Wringer. (*Essoreuse de linge.*)

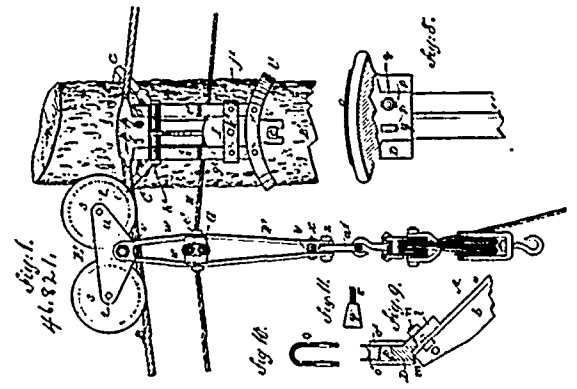


George B. Dowswell, Hamilton, Ontario, Canada, 10th August, 1894; 6 years.

Claim.—1st. In a clothes wringer having the frames F¹ and F², made of cast-iron, the brackets H forming part of the castings of which said frames are made, as described. 2nd. In a clothes wringer the frames F¹ and F², made of cast-iron the pivots D on which the drop table A works being made in the same casting with the frames F¹ and F² in connection with the frame B of drop table A, as set forth. 3rd. In a clothes wringer having the frames F¹ and F², made of cast-iron, the bearings E, E, for supporting the rest C on the frame B of the drop table A, as set forth.

No. 46,821. Logging System.

(*Système de manier les billots.*)

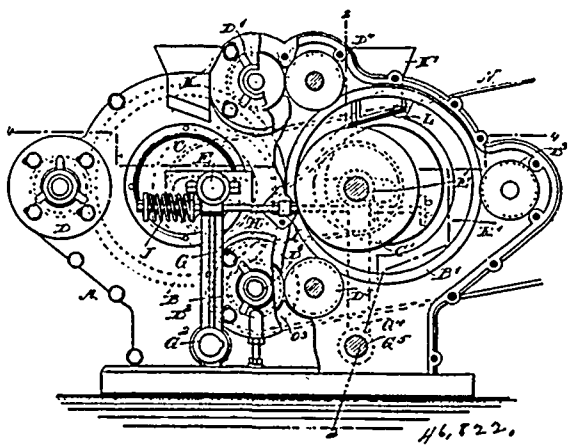


Richard Lamb, New York, State of New York, U.S.A., 10th August, 1894; 6 years.

Claim.—1st. The combination with a log-carrying trolley, of a locking tackle block adapted for raising and sustaining the load carried by the log-carrying trolley, substantially as specified. 2nd. In a cable tramway, a removable cable-supporting bracket formed of a bar adapted to receive a spike at its lower end and furnished with a cable-supporting saddle at its upper end, and a pair of hooked braces pivotally attached to the bracket bar, substantially as specified. 3rd. The combination with the bracket bar *a*, of hooked braces C pivotally connected with the bar, and provided with enlargements *j*, and the chain *k* for holding the hooked braces in the position of use, substantially as specified. 4th. A saddle for supporting the bearing cable, the same consisting of an angled plate having a convex upper edge furnished with a longitudinal semi-cylindrical groove, a clip fitted over the cable and the saddle, and wedge bolts for fastening the clip in the position of use and binding the cable to the saddle, substantially as specified. 5th. The combination, of the T-bar *a* provided with a slot in the lower end thereof for receiving a spike, the eye plate *d* attached to the T-bar, the hooked braces C connected with the eye plate *d* and provided with pointed hooks on their free extremities and enlargements *j* between their ends, the chain *k* passing around the divergent ends of the hooked braces, and the saddle D attached to the end of the bar *a* and embracing the cable B, substantially as specified. 6th. In a cable tramway for a logging system, the combination of a bracket A provided with braces C and the saddle D, the cable B the swinging sheave I, the car E, the swinging arm F, the clip G carried by the said arm, the hauling cable H, and the snatch block J, substantially as specified.

No. 46,822. Stone and Ore Crusher.

(*Machine à broyer la pierre et le minerai.*)

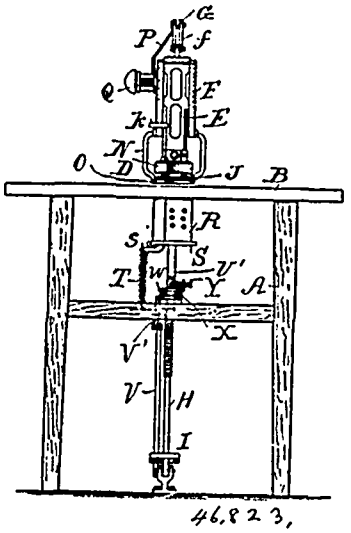


Caleb G. Collins, Woodsburgh, New York, U.S.A., 11th August, 1894; 6 years.

Claim.—1st. A stone and ore crusher, comprising two revoluble rings in peripheral contact with each other, and crushing rolls in interior peripheral contact with the said rings and at points in alignment with the peripheral contact point of the said rings, substantially as shown and described. 2nd. A stone and ore crusher, comprising revoluble rings in peripheral contact with each other, crushing rolls in interior frictional contact with the said rings, and at points in alignment with the peripheral contact point of the said rings, and rocker arms carrying the shafts for the said crushing rolls, substantially as shown and described. 3rd. A stone and ore crusher, comprising revoluble rings in peripheral contact with each other, crushing rolls in interior frictional contact with the said rings, and at points in alignment with the peripheral contact point of the said rings, rocker arms carrying the shafts for the said crushing rolls, and guide rolls carrying the said rings, substantially as shown and described. 4th. A stone and ore crusher, comprising revoluble rings in peripheral contact with each other, crushing rolls in interior frictional contact with the said rings, and at points in alignment with the peripheral contact point of the said rings, rocker arms carrying the shafts for the said crushing rolls, and springs pressing on the said rocker arms to regulate the frictional contact between the rolls and rings, substantially as shown and described. 5th. A stone and ore crusher, comprising two rings in peripheral contact with each other, guide rolls for supporting the said rings, crushing rolls in interior peripheral contact with the said rings, rocker arms carrying the shafts of the said crushing rolls, and springs pressing on the free ends of the said rocker arms to move the said crushing rolls towards each other to regulate their frictional contact with the rings, substantially as shown and described. 6th. A stone and ore crusher, comprising two rings in peripheral contact with each other, guide rolls for supporting the said rings, crushing rolls in interior peripheral contact with the said rings, rocker arms carrying the shafts of the said crushing rolls, springs pressing on the free ends of the said rocker arms to move the said crushing rolls towards each other to regulate their frictional contact with the rings, and fixed rods passing loosely through the said rocker arms and carrying the said springs, the said rods being also provided with means for regulating the tension of the said springs, substan-

tially as shown and described. 7th. A stone and ore crusher, comprising rings in peripheral contact with each other, guide rolls for supporting the said rings, crushing rolls in interior peripheral contact with the said rings, pulleys on the shafts of the said crushing rolls, and on the shaft of one of the said guide rollers, and a driving belt passing over the said pulleys in such a manner as to rotate the crushing rolls, and move the same towards each other, substantially as shown and described.

No. 46,823. Machine for Cutting Cigarette Wrappers.
(*Machine pour couper les enveloppes de cigarettes.*)



46,823.

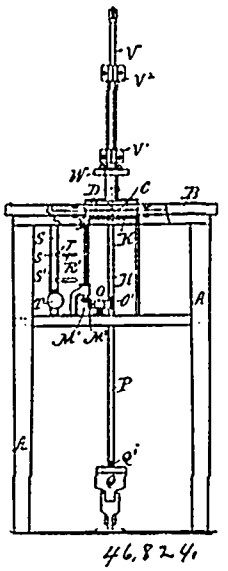
Adolph Moonelis, New York, State of New York, U.S.A., 11th August, 1894; 6 years.

Claim.—1st. In a machine for cutting the wrappers of cigarettes, the combination of a frame, a vertically moving rectangular cutter carried thereby, a table having an opening for the passage of said cutter, the edges of said opening coacting with said cutter, the stationary guard fixed around said cutter and a spring controlled discharge or ejecting plate located within and adapted to travel with said cutter, as set forth. 2nd. In a machine for cutting the wrappers of cigarettes, the combination of the vertically moving rectangular cutter, the discharge or ejecting plate arranged to pass within and normally located at a distance from the cutter and adapted to travel downwardly with it, said plate having upwardly extending rods, friction guides to receive said rods and means for restoring the plate to its elevated position, as set forth. 3rd. In a machine for the cutting of wrappers of cigarettes, the combination of the vertically moving rectangular cutter, a spring controlled ejecting plate and a tension device through which the arms of the ejecting plate, extend, as set forth. 4th. In a machine for the cutting of cigarette wrappers, the combination of the cutter, the ejecting-plate J, having the arms K and the tension device *k*, L, L', *l*, as set forth and shown. 5th. In a machine for cutting the wrappers of cigarettes, the combination of the cutter, the complementary opening in the table through which the cutter extends and a box or receptacle for receiving the wrappers and a tilting support for said receptacle, as set forth. 6th. In a machine for cutting the wrappers of cigarettes, the combination of the cutter, the ejecting plate, the table B, having a knife-edged opening C, and a box or receptacle *beneath the table, as set forth. 7th. In a machine for cutting the* wrappers of cigarettes, the combination of wrapper cutting dies with a receptacle R, and a hinged frame S carrying said receptacle, as set forth. 8th. In a machine for cutting the wrappers of cigarettes, the combination of the receptacle R, having a follower arranged as shown, and means for operating the same with a hinged frame, supporting said receptacle, and for the purposes set forth. 9th. In a machine for cutting wrappers, the combination of cutting dies with a receptacle beneath them, a hinged frame for supporting said receptacle, means for holding said frame upward, means for holding the receptacle in position, a follower and means for actuating the latter, substantially as described.

No. 46,824. Machine for Cutting Cigarette Wrappers.
(*Machine pour couper les enveloppes de cigarettes.*)

Adolph Moonelis, New York, State of New York, U.S.A., 11th August, 1894; 6 years.

Claim.—1st. In a machine for cutting the wrappers of cigarettes, a transparent *holding plate having an opening as shown and* adapted to operate, substantially as and for the purposes set forth. 2nd. In a machine for cutting the wrappers of cigarettes, the combination of a bed or table having an opening as shown, a transparent holding plate pivoted thereto, the said transparent plate having an opening corresponding with the opening of the table, as and for the purposes set forth. 3rd. In a machine for cutting the wrappers of



46,824.

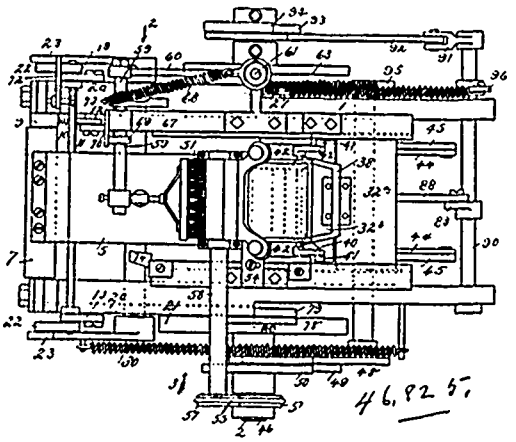
cigarettes, the combination of the table, having an opening therein with the transparent holding plate pivoted thereto, and having an opening and the rectangular cutter arranged to move vertically relatively to the holding plate and table, and to co-operate with them in the cutting operation, as and for the purpose set forth. 4th. In a machine for cutting the wrappers of cigarettes, the combination of a table or plate having an oblong rectangular opening therein whose longer sides are set at an angle approximating forty-five degrees to the front edge of the said table, a transparent holding plate pivoted thereto, and having an opening, and a rectangular cutter corresponding in size to the rectangular opening of the table, all adapted to operate substantially as and for the purposes set forth. 5th. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening therein set *at an angle to the front of the table, and provided with cutting* edges, a rectangular cutter corresponding in shape, size and position with the aforesaid rectangular opening and provided with knife edges and the intermediate transparent holding plate having an opening, all arranged substantially as and for the purposes set forth. 6th. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening located at an angle to the front of the table and provided with cutting edges, with a reciprocating complementary rectangular cutter, all arranged substantially as and for the purposes set forth. 7th. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening at an angle to the front of the table provided with cutting edges, a reciprocating complementary rectangular cutter arranged at the same angle to the front of the table and having means for discharging the severed wrapper therefrom, substantially as set forth. 8th. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening set at an angle to the front of the table, a reciprocating rectangular cutter and means, substantially as shown and described, arranged intermediate of the cutter and the table for holding the leaf in position on the table, the said cutter corresponding in size, shape and position with the opening in the table, as and for the purposes set forth. 9th. In a machine for cutting the wrappers of cigarettes, the combination of the vertically reciprocating cutter, a table having an opening therein corresponding to the cutter, means for operating the cutter and an intermittently moving holder K arranged beneath the opening in the table and means operatively connected with the reciprocating cutter for operating said holder and an indicating device adapted to be actuated by the contact therewith of the holder, substantially as and for the purposes set forth.

No. 46,825. Cigarette Machine. (*Machine à cigarettes.*)

Adolph Moonelis, New York, State of New York, U.S.A., 11th August, 1894; 6 years.

Claim. 1st. In a cigarette machine, the combination of an apron adapted to have a pocket formed in it, and a rolling table with a roller or bar 7, hung eccentrically, said apron being secured to said roller, means for turning said roller to take up slack in the apron, *and a bunching roller or bar 18 to close the cavity in the apron,* substantially as described. 2nd. In a cigarette machine, the combination of an apron adapted to have a cavity formed in it, a rolling table to which the apron is connected at one end and over which it

passes, a bunching roller or bar 18, slides 20, at the sides of said table, guides for said slides, arms 19 pivotally connected with said roller and slides, links 22, means for moving the bunching roller or bar 18 across the table, and links 22 being pivotally connected thereto



and to the arms 19, a roller or bar to which one end of the apron is attached, and means for turning said roller, substantially as described. 3rd. In a cigarette machine, the combination of a rolling apron, an eccentrically hung roller 7, to which it is attached, gear connected with said roller, a segmental rack engaging said gears, a pivoted arm or lever carrying said rack, means for rocking said arm or lever, and a bunching roller or bar 18 to operate upon said apron, substantially as described. 4th. The combination with a jointed wrapper-carrier and means for moving the same to and fro, of a wrapper-holder carried by the forward part of said wrapper-carrier and means for actuating said holder, and means for permitting the forward part to descend to a lower plane, substantially as described. 5th. The combination with a rolling apron, of a wrapper-carrier above the same, and having a portion adapted to descend toward the apron, means for reciprocating said wrapper-carrier, a wrapper-holder carried by said descending portion, and means for operating said holder and for permitting said portion to descend, substantially as described. 6th. The combination with a rolling apron, of a wrapper-carrier above the same, and having a portion adapted to descend toward the apron, and means for permitting said portion to descend, a wrapper-holder carried by said portion, and an incline at one side of the wrapper-carrier arranged to operate said holder and means for operating the carrier, substantially as described. 7th. The combination with a rolling apron, of a wrapper-carrier above the same, and having a portion adapted to descend toward the apron, and means for permitting said portion to descend a wrapper-holder on said portion, a crank arm connected with said holder, and means to actuate said crank arm and means for reciprocating the carrier, substantially as described. 8th. The combination with a rolling apron of a wrapper-carrier above it, a wrapper-holder pivoted thereon, a crank arm connected with the latter, and an incline at one side of the wrapper-carrier to operate said crank arm to swing said holder, substantially as described. 9th. The combination of a rolling apron, a wrapper-carrier above it, and means for moving the latter to and fro, a wrapper-holder pivoted on said wrapper-carrier, a crank arm connected with said holder and inclines facing in opposite directions arranged to actuate said crank arm and move the wrapper-holder in opposite directions, as the wrapper-carrier travels to and fro, substantially as described. 10th. The combination of a rolling apron with a wrapper-carrier having a portion adapted to descend toward the latter, means for permitting said portion to descend a movable wrapper-holder on said portion of said wrapper-carrier guides for the latter, means for moving said wrapper-carrier to and fro, a crank arm connected with said holder, and an incline 74 in the path of said crank arm to raise the holder from the wrapper, as the carrier recedes, substantially as described. 11th. A wrapper carrier having a pivoted portion adapted to descend, means for permitting the descent of said portion with guides for said carrier, a switch 37 in said guides, and an incline 36 leading to said switch to guide the lowered portion of the carrier past said switch, substantially as described. 12th. In a cigarette machine, the combination of a rolling apron, a rolling table having a pair of curved hook-like stationary cutters, a pair of curved moving cutters coacting with said stationary cutters, shaft 77 carrying said cutters, crank arm 78 thereon, rod 79 having a roller thereon, and cam 82 coacting with said roller and having substantially a right angled portion for imparting a quick movement to said cutters, and spring 83a connected with said crank arm and with the stationary part of the machine, as described and shown. 13th. In a cigarette machine, a paste receptacle combined with a paste brush or carrier, and means, substantially as described for moving said brush from a horizontal position to a vertical position to apply paste to a wrapper, and means for moving the brush slightly sidewise while in the lower position to apply paste to the wrapper, substantially as described. 14th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier, a wrapper-carrier below the same and means for moving the brush from a horizontal position above the wrapper carrier to a vertical position, over said carrier and means for moving the brush slightly sidewise while in the lower position to apply paste to the wrapper, substantially as described. 15th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier, a horizontal rock shaft carrying the latter, means for raising and lowering said shaft, and means for turning the same, substantially as described. 16th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier, a horizontal rock shaft carrying the latter, means for raising and lowering said shaft, means for turning said shaft to carry the brush from the receptacle to a lower position, and means for moving said brush slightly sidewise while in the lower position to apply paste to a wrapper, substantially as described. 17th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier normally extending horizontally, a paste distributing roller in said receptacle upon the side of which said brush can bear, and means for moving said brush from said distributing roller into position to apply paste to a wrapper and means for moving the brush slightly sidewise while in the lower position, to apply paste to the wrapper, substantially as described. 18th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier, a rock shaft carrying the latter, an arm or projection connected to said shaft to rock it, an abutment to actuate said arm, and means for moving said shaft sidewise, substantially as described. 19th. In a cigarette machine, a paste receptacle, combined with a paste brush or carrier, a rock shaft, a support therefor, means for vertically reciprocating said support, an arm or projection connected with said shaft, an abutment to be engaged by the projection, and a spring 68 connected with said shaft, substantially as described. 20th. In a cigarette machine, the combination of a paste receptacle, a paste brush or carrier, a rock shaft therefor, an arm or support for said shaft, means for vertically reciprocating said support, a guide for said shaft, a projection or arm connected with the shaft, an abutment to be engaged by said projection or arm, and a spring connected with said shaft to turn it, substantially as described. 21st. In a cigarette machine, the combination of a paste receptacle, a paste brush or carrier, means for moving said brush or carrier from the receptacle to a position to apply paste to a wrapper, a rolling apron, a bunching roller or bar 18 therefor, levers for operating said bar and means intermediate between said levers and said paste brush or carrier for moving the latter slightly sidewise, substantially as described. 22nd. In a cigarette machine, the combination of a paste receptacle, a paste brush or carrier, means for moving the latter from the receptacle to a position to apply paste to a wrapper, a rolling apron, a bunching roller or bar 18 therefor, levers for moving said bunchining roller or bar, an abutment connected therewith, and an arm or projection connected with said brush to be engaged by said abutment, as and for the purposes set forth. 23rd. In a cigarette machine, the combination of a paste receptacle, a paste brush, means for moving the latter, substantially as described, a rolling apron, a bunching roller, or bar 18 therefor, levers for moving said roller or bar and an adjustable abutment connected with said levers and an arm or projection connected with said brush to be engaged by said abutment, as and for the purposes specified. 24th. In a cigarette machine, the combination with a rolling apron and rolling table, of a chute contiguous thereto to receive a cigarette from said apron, a cigarette rubber coacting with said chute to roll a cigarette and means for actuating said rubber, substantially as described. 25th. In a cigarette machine, the combination, with a rolling apron and a rolling table, of a chute to receive a cigarette from the apron, a rubber coacting with said chute to roll a cigarette, a finger or collector carried by said rubber to straighten a cigarette in the chute, and means for actuating said rubber, substantially as described. 26th. In a cigarette machine, the combination of a rolling apron, and a rolling table with a chute contiguous thereto to receive a cigarette, a reciprocating rubber therein and means for reciprocating said rubber, substantially as described. 27th. In a cigarette machine, the combination of a rolling apron, a rolling table, a chute, a rubber 84, an incline to raise and lower the rubber as it is moved along the chute, and means for reciprocating said rubber, substantially as described. 28th. In a cigarette machine, a rolling apron, and a rolling table combined with a chute, inclined sides on said chute, a rubber 84 over said chute and riding on said incline sides of said chute and means for reciprocating said rubber, substantially as described.

No. 46,826. Electric Conduit System.

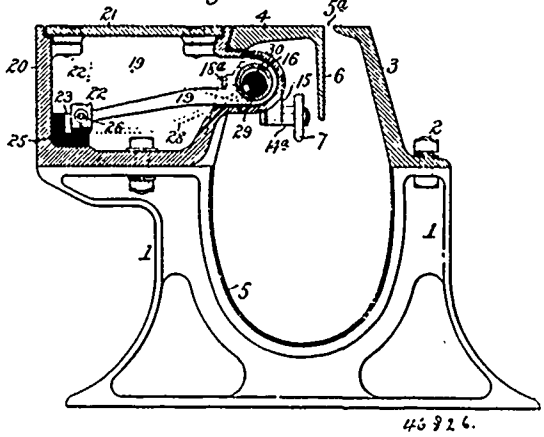
(*Système de conduit électrique.*)

Hyrum S. Woolley, Paris, Idaho, U.S.A., 11th August, 1894; 6 years.

Claim.—1st. In an electric conduit system, the combination of a sectional working conductor, a single housing or switch box for the alternate adjacent ends of the working conductor sections, and a switch within the housing for placing two sections into and out of an electric circuit, as set forth. 2nd In an electric conduit system, the combination of a sectional working conductor, a main conductor contacts for the main conductor and two adjacent sections of the working conductor, a switch for each section for placing it in circuit

with the main conductor and a single housing or switch box for the contacts of two adjacent sections and their switches, as set forth. 3rd. In an electric railway system, the combination of a working

Fig. 1



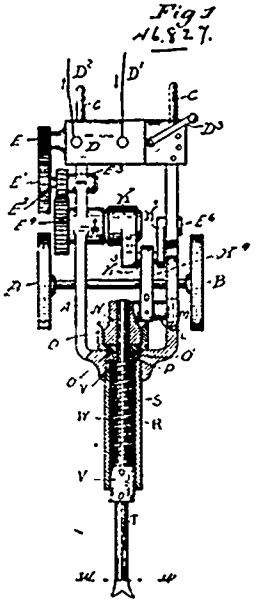
46926.

conductor composed of sections, a tubular rock shaft for the sections, and brackets for supporting said shaft, the tubular rock shaft permitting the circulation of air therethrough, as set forth. 4th. In an electric railway system, the combination of a working conductor composed of sections, and a main conductor supported within said tubular shaft, as set forth. 5th. In an electric railway system, the combination of a working conductor composed of independent sections, a tubular rock shaft for each section, and a main conductor supported within and protected by said tubular rock shaft, as set forth. 6th. In an electric railway system, the combination of a working conductor composed of section, a main conductor having an exposed contact, and a single arm carried by the working conductor section and movable into and out of contact with the main conductor contact, as set forth. 7th. In an electric railway system, the combination of a working conductor composed of pivoted rail sections, a main conductor having an exposed contact, and a single arm movable bodily with the rail sections for direct contact with the main conductor contact, as set forth.

No. 46,827. Electric Mining Machine.

(*Machine électrique pour mines.*)

Fig 1
46827.

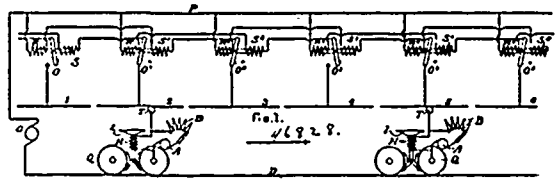


The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Elmer A. Sperry, Cleveland, Ohio, U.S.A., 11th August, 1894; 6 years.

Claim. 1st. In an excavating machine, the combination of a movable manually directible truck and a supporting frame, a continuously acting motor mounted thereon, flexible conductors for conveying energy to the motor from a separate source, a cutter-holder or bar reciprocating longitudinally in a line passing practically through the centre of inertia of the machine, and a power storing device, as a spring receiving and accumulatmg tension from the continuously acting motor and discharging the same at regular intervals through the reciprocating cutter-bar, whereby relatively powerful intermittent blows are delivered upon the material operated upon, substantially as shown and described. 2nd. In an excavating machine, the combination of a movable supporting frame, with a continuously acting motor mounted thereon, flexible conductors for conveying energy to the motor, a cutter-holder or bar reciprocating longitudinally in a line passing practically through the centre of inertia of the machine, a power storing device receiving and accumulating tension from the continuously acting motor and discharging the same at regular intervals through the reciprocating cutter-bar, whereby relatively powerful intermittent blows are delivered upon the material operated upon, and an intermittent connection and release between the motor shaft and the power storing device whereby the power is alternately accumulated and automatically relased, substantially as shown and described. 3rd. In an excavating machine, the combination of a movable supporting frame, with a continuously acting motor mounted thereon, flexible conductors for conveying energy to the motor, a cutter-holder or bar reciprocating longitudinally in a line passing practically through the centre of inertia of the machine, a power storing device receiving and accumulating tension from the continuously acting motor through a speed reducing gear or gears, and discharging the same at regular intervals through the reciprocating cutter-bar, whereby relatively powerful intermittent blows are delivered upon the material operated upon, and an intermittent connection and release between the motor shaft and the power storing device, whereby the power is alternately accumulated and automatically released, substantially as shown and described. 4th. In an excavating machine, the combination of a movable supporting frame, with a continuously acting electric motor mounted thereon, a cutter-holder or bar reciprocating longitudinally in a line passing practically through the centre of inertia of the machine, a power storing spring receiving and accumulating tension from the continuously acting motor through a speed reducing gear or gears, and discharging the same at regular intervals through the reciprocating cutter-bar, and a catch to intermittently connect and release the motor and the spring, substantially as and for the purpose shown and described. 5th. In an excavating machine, the combination of a movable supporting frame, with a continuously acting electric motor mounted thereon, a cutter-holder or bar reciprocating longitudinally in a line passing practically through the centre of inertia of the machine, a power storing and delivering spring, operating the cutter-bar, a speed reducing gear or gears between the motor and the spring, a catch to intermittently connect and release the motor and the spring and a cushion device as N, O, to relieve the machine from the shock of the drill-bar when the same is not encountering resistance, substantially as and for the purpose shown and described. 6th. A moving manually directible bi-wheeled excavating machine, consisting in part of a power motor having the axis of the shaft of the motor parallel with the axis of its supporting wheels, combined with a flexible connection to the source of power supply.

No. 46,828. Electric Railway Block System.

(*Block-système pour chemin de fer électrique.*)



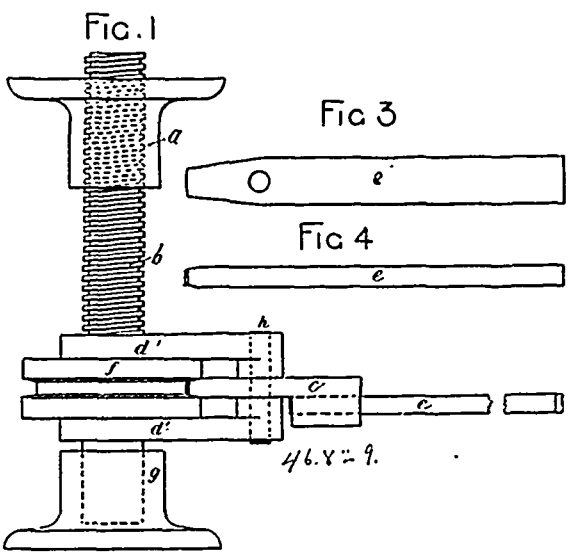
The Canadian General Electric Company, Toronto, Ontario, Canada, assignee of Francis O. Blackwell, Schenectady, New York, U. S.A., 11th August, 1894; 6 years.

Claim. 1st. The combination of a sectional power supply conductor, with a feeding conductor or conductors, circuit controllers normally preserving the power supply conductor sections in circuit with the feeding conductor, and means brought into and kept in action during the presence of a car or train on any given section for cutting out of circuit the preceding section, as set forth. 2nd. The combination of a power supply conductor divided into insulated sections, with electro-magnetically actuated circuit controllers normally preserving such power conductor sections in circuit with the source of electric supply, and a circuit closed by the presence of a train on any given section for shifting the controller of the preceeding section and cutting such section temporarily out of circuit. 3rd. The combmation of a power supply conductor divided into insulated sections, with circuit controllers normally preserving such power conductor sections in circuit with the source of supply, an electro-magnet arranged to open the circuit of a preceding section when energized and a circuit for energizing such magnet automatically closed by the presence of a train on an advance section. 4th. The combination of a power supply conductor divided into insulated sections, circuit controllers normally preserving such power conductor

sections with the source of supply, and electro-magnets for shifting such circuit controllers into open and closed positions, and coupled up in circuit so that by a presence of a train on any given section the circuit on the immediately preceding section is opened, and the circuit of the second preceding section closed, as set forth. 5th. The combination of a supply conductor divided into insulated sections, with switches normally preserving such sections in circuit with the source of supply, and electro-magnets for shifting such switches, each comprising an opening and a closing coil, the opening coil of a given magnet being included in circuit with the preceding section immediately in advance, and the closing coil in circuit with the next section in advance, as set forth. 6th. The combination of a supply conductor divided into insulated sections, with switches adapted to connect such sections with either pole of the source supply, and electro-magnets controlled by the presence of a train on a given section for breaking the normal connection of a succeeding section with the generator and temporarily coupling it to the return conductor, as set forth. 7th. The combination of a block electric railway system, having a sectional supply conductor, in which any given section is temporarily cut out of circuit while a train is present on a succeeding section, with means for automatically breaking or stopping a train travelling over such railway responsive to, or thrown into action upon, the cessation of the motive current driving the car. 8th. The combination of a block electric railway system in which a section of conductor in the rear of the car or train is kept open circuited, as described, with a speed arresting device for a train travelling over such railway, and means controlled by the motive current for maintaining such device out of action while current is supplied to the section occupied by the train, but for automatically applying the said device should the supply of 10 motive current cease, as described.

No. 46,829. Screws for Cheese Presses.

(*Vis pour presses à fromage.*)



William Stafford, Lancaster, Ontario, Canada, 11th August, 1894; 6 years.

Claim.—1st. The grooved pulley *f* in combination with pall *c*, link d^1 and pin *h*, as described and for the purpose set forth. 2nd. The grooved pulley *f* in combination with pawl *c*, links *d* and d^1, pin *h* and lever *c*, as described and for the purpose set forth. 3rd. The grooved pulley *f* in combination with lever *c*, link d^1 and pin *h*, as described and for the purpose set forth. 4th. The combination of a press screw *b* with grooved pulley *f*, pall *c*, links *d* and d^1, pin *h* and lever *c*, as described and for the purpose set forth.

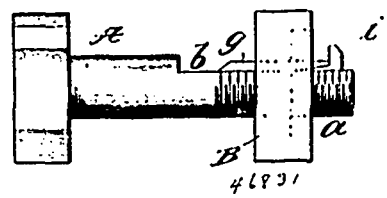
No. 46,830. Process of Extracting Nickel and Cobalt.

(*Procédé pour extraire le nickel et cobalt.*)

Dr. Carl Hoepfner, Giessen, Germany, 11th August, 1894; 6 years.

Claim.—1st. In the extraction of nickel and cobalt from their ores, the improvement which consists in smelting the nickel and cobalt ore with a copper ore or a cupriferous material, and extracting the copper and the nickel and cobalt successively from the matte. 2nd. The process of extracting nickel and cobalt from their ores, which consists in reducing the ore to a matte, pulverizing the same, and leaching out the nickel and cobalt by means of a chloridizing or an oxidizing agent such as described. 3rd. The process of extracting nickel and cobalt from their ores, which consists in smelting the ore with a copper ore or cupriferous material into a matte, pulverizing the same, leaching out the nickel and cobalt, and the copper, successively, by means of a chloridizing or an oxidizing agent such as described, and extracting the copper from the nickel and cobalt and the copper from their respective solutions, substantially as set forth. 4th. The process of extracting nickel and cobalt from their ores, which consists in smelting the ore with a copper ore or cupriferous material into a matte, pulverizing the same, leaching out the nickel and cobalt, and the copper, successively, by means of a chloridixing or an oxidizing agent such as described, extracting the copper from the nickel and cobalt and from the cupriferous solutions thus obtained, combining the two solutions after removal of the copper, precipitating the iron therefrom and extracting the nickel and cobalt chemically or electrolytically, substantially as set forth.

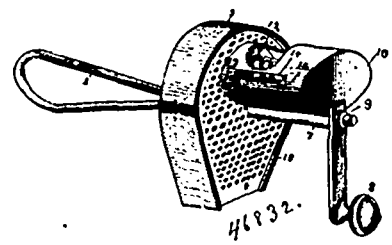
No. 46,831. Nut lock. (*Arrête-écrou.*)



Murray C. Slusser and William J. Slusser, both of Slusser, Virginia, U.S.A., 11th August, 1894; 6 years.

Claim. 1st. In a nut lock in combination with the bolt having a flattened face, and a nut having a recess in its face, a plate inserted therein and a key for locking said plate to the bolt, substantially as described. 2nd. In a nut lock, the combination with the bolt having a flattened surface and a nut having a recess in its face, of the plate adapted to seat in the recess and provided with the V-groove and the locking pin having the bevelled portions and lip, all substantially as described.

No. 46,832. Nutmeg Grater. (*Râpe pour la muscade.*)



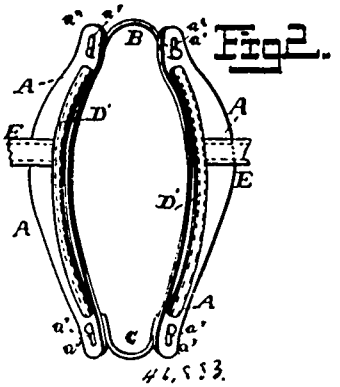
George V. Shaw, Savanna, Illinois, U.S.A., 11th August, 1894; 6 years.

Claim.—1st. In a nutmeg grater, the combination of a grating box, provided at one side with a grating surface, a shank or stub shaft extending outward from the grating box and arranged centrally of the grating surface, a handle extending horizontally from the opposite sides of the grating box, whereby the grating box may be held firmly by hand, and a carrier having at one side a longitudinal sleeve movably mounted on the shank or stub shaft, and provided with a crank handle for rotating the carrier over the grating surface, substantially as described. 2nd. In a nutmeg grater, the combination of a handle, a grating box or receptacle mounted on said handle, the latter having a shank or stub shaft extending centrally outwardly therethrough, a flange extending around the edge of the box on the grating side, and a rotatable carrier having at one side a longitudinal sleeve loosely mounted on the said stub shaft outside the grating surface of the said box or receptacle, substantially as described. 3rd. In a nutmeg grater, the combination of a handle having a shank or stub shaft, a grating box or receptacle of approximate circular form having a delivery spout at the bottom and a grating surface at the side of the same, said box or receptacle being mounted upon the said shank or stub shaft, a sleeve loosely mounted on said shank or stub shaft outside the box or receptacle and having a carrier connected thereto of tubular form, with an opening in one side thereof, the inner end of said carrier being open and the outer end closed, and opposite slots therein, an elliptical plunger or follower mounted in said carrier, and having oppositely-located handles projecting through the slots of the latter, a coiled spring located between said follower or plunger and the outer end of the carrier, and acting to hold the follower in, and a crank handle connected to the said sleeve and carrier for rotating said parts and causing the inner end of the carrier to travel over the grating surface of the box or receptacle, substantially as described. 4th. The combination with a grating box having a grating surface, of a rotary carrier provided at its inner end at one side with an opening to permit the insertion of a nutmeg, and provided at opposite sides with longitudinal slots having at their outer ends shoulders, the

spring pressed follower arranged in the carrier, and the opposite handles extending from the follower and arranged in the slots and adapted to engage the shoulders thereof, substantially as described.

No. 46,833. Horse Collar and Hames Combined.

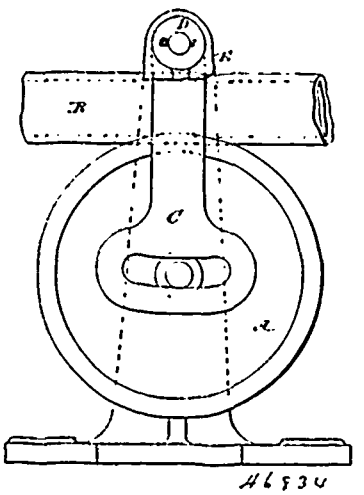
(*Collier de cheval et attelle combinés.*)



David K. Bill, Hillsborough, Oregon, U.S.A., 11th August, 1894; 6 years.

Claim.—In combined collar and hames, the independent leather sections A, A, having each a slot at top and bottom, the connectors B, C, the stiffeners D, D, having each an arm *d*, and the tug straps E, E, sewed over said arms, all combined, constructed and arranged, substantially as described.

No. 46,834. Rollers for Reciprocating Rods for Railway Points and Signals. (*Rouleau pour biellcs oscillantes pour signaux de chemin de fer.*)



Edmund Charrington, London, England, 11th August, 1894; 6 years.

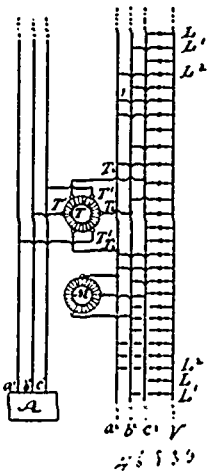
Claim.—Mounting rollers for reciprocating rods by engaging pins projecting from their sides in curved slots of segment, arms suspended from pins above, substantially as and for the purpose set forth.

No. 46,835. Distribution of Rotary Electric Currents.

(*Distribution de courant rotative électrique.*)

Alard Emile du Bois-Raymond, Berlin, Germany, 11th August, 1894; 6 years.

Claim.—1st. In a system of distribution of multiphase electric currents, the combination, with a generator of multiphase currents, of main-line conductors leading therefrom, a multiphase transformer having its primary in circuit with said main-line conductors, distributing-conductors connected to the secondary of said transformer an independent equalizing conductor, and lamps or other translating devices in circuit between each secondary conductor and the independent conductor. 2nd. In a system of distribution of multiphase electric currents, the combination, with a generator of multiphase currents, of main line conductors leading therefrom, a multiphase transformer having its primary in circuit with said main line conductors, distributing-conductors connected to the secondary of said transformer, an electro-motor or other translating devie in circuit with said distributing conductors, an independent



equalizing conductor, and lamps or other translating devices in circuit between each secondary conductor and the equalizing conductor. 3rd. In a system of distribution of multiphase electric currents, the combination, with a generator of multiphase currents, of main-line conductors corresponding in number with the separate impulses transmitted from the generator, a multiphase transformer having its primary in circuit with said main-line conductors, distributing conductors connected to the secondary of said transformer and corresponding in number with the secondary currents generated, an equalizing conductor, and lamps or other translating devices in circuit between each secondary conductor and the equalizing conductor. 4th. In a system of distribution of multiphase electric currents, the combination, with a generator of multiphase currents, of main-line conductors corresponding in number with the separate impulses transmitted from the generator, a multiphase transformer having its primary in circuit with all or a portion of said main-line conductors, distributing conductors connected to the secondary of said transformer and corresponding in number or in some multiple of the number of the main-line conductors connected with the primary of said transformer, an independent equalizing conductor, and lamps or other translating devices in circuit between each secondary conductor and the equalizing-conductor. 5th. In a system of distribution of multiphase electric currents, the combination, with the secondary distributing conductors leading from a multiphase transformer, of an independent equalizing conductor, and lamps or other translating devices in circuit between each secondary conductor and the equalizing conductor. 6th. In a system of distribution of multiphase electectric currents, the combination, with the secondary distributing conductors leading from a multiphase transformer, of an independent equalizing conductor, and lamps or other translating devices between each secondary conductor and the equalizing conductor, and such a number of lamps or other translating devices included in each circuit that their resistance shall be approximately equal. 7th. The herein described method of distributing alternating multiphase electric currents, which consists in generating a current made up of three or more successive phases or currents of equal period and amplitude, transmitting said current phases or currents separately to the place of consumption, there transforming them in secondary currents having the same phase and period but of a different tension, and subsequently distributing said secondary currents separately to electro-motors or other translating devices, and in such a manner that the separate currents may be properly equalized between the different devices to which they are fed. 8th. The herein described method of distributing alternating multiphase electric currents, which consist in generating a current made up of three or more successive phases or currents of equal period and amplitude, transmitting said current phases or currents separately to the place of consumption, there transforming them into secondary currents separately to electro motors and to other translating devices independent of said motors and in such manner that the separate currents may be properly equalized between the independent translating devices to which they are fed.

No. 46,836. Alternating Current Motor.

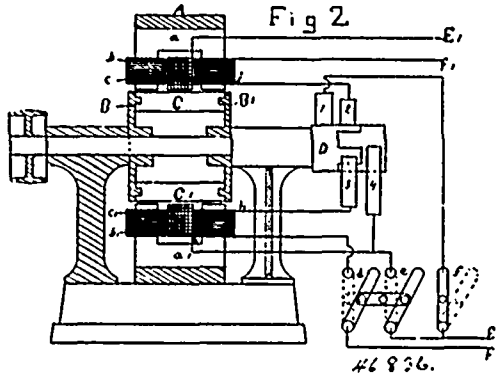
(*Moteur de courant alternatif.*)

Frank H. Sleeper, Coaticook, Quebec, Canada, 11th August, 1894; 6 years.

Claim. 1st. In a synchronous alternating current motor, the combination of the ring A, the electro-magnets *a*, *a*¹, the coil H,

and the bars C, C¹, substantially as and for the aforesaid purpose hereinbefore set forth. 2nd. In a self-starting alternating current

Fig 2.



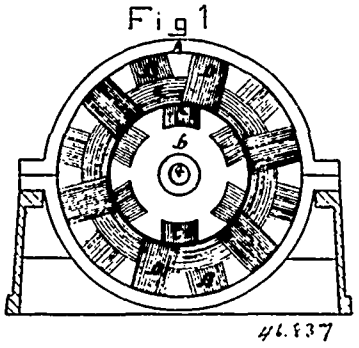
#6836.

motor, the combination of the ring A, the magnets a, a^1, the coils b, b^1, c, c^1, the coil H, the bars C, C¹, the commutator D, and the brushes 1, 2, 3, 4, substantially as and for the aforesaid purpose hereinbefore set forth.

No. 46,837. Alternating Current Generator.

(*Générateur de courant alternatif.*)

Fig 1



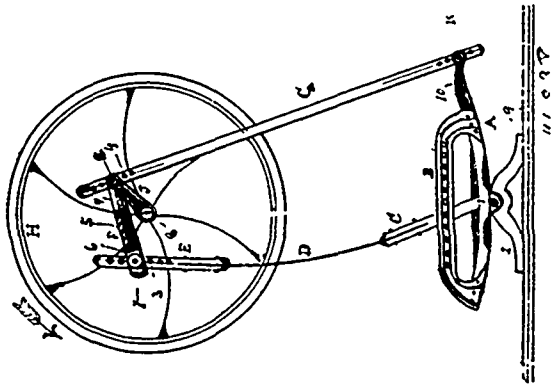
#6837

Frank H. Sleeper, Coaticook, Quebec, Canada, 13th August, 1894; 6 years.

Claim.—In an alternating current generator, the combination of the ring A, the armatures B, B¹, D, D¹, the coils c, d, e, and the revolving bars C, C¹, substantially as and for the aforesaid purpose hereinbefore set forth.

No. 46,838. Eccentric Spring Motor.

(*Moteur à ressort d'excentrique.*)



David Seibert, sr., Petoskey, Michigan, U.S.A., 13th August, 1894; 6 years.

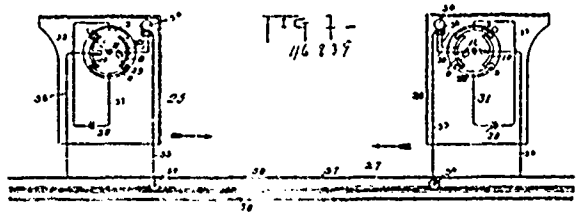
Claim.—1st. The combination of an oscilating treadle, an arm rigidly secured to the treadle, a spring-bar similarly secured to the arm, a pitman, a crank connected to the treadle by the pitman, and an intermediate rod pivotally connected to the upper end of the spring-bar, and to the upper end of the pitman or crank-pin, whereby the spring-bar is made to assist the crank past the points of dead-centre, substantially as described. 2nd. The combination of an oscilating treadle, an arm rigidly secured thereto, a spring bar connected to the arm, and arising vertically therefrom, a pitman connected to the treadle, a crank, connected to the pitman, whereby the crank is operated, a rod pivotally connected to the pitman, or crank-pin, a second rod pivotally connected to the upper end of spring-bar, both of said rods having their free ends slidably joined to each other, and a spiral spring connected to each of the rods, and give their a tendency to a predetermined position, whereby the crank is assisted past the points of dead-centre, substantially as described.

No. 46,839. Electric Railroad Signal.

(*Signal de chemin de fer électrique.*)

Fig 1.

#6839



Benjamin Coplin Seaton, Rochester, New York, U.S.A., 13th August, 1894; 6 years.

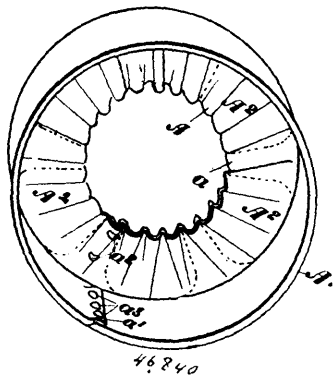
Claim.—1st. In a railway train signalling system of the class described, the combination with a suitable insulated section or block of the track comprising track-rails and an insulated sectional track circuit, of two or more locomotives severally equipped with a source of electricity, a travelling contact device in electrical connection with the said track circuit, an annunciator, and a pole changing controlling switch adapted to be operated to cut out the annunciator and battery in its locomotive and to complete the circuit through such locomotive for the battery current of the other locomotive on the same block or section, and suitable electrical connections. 2nd. In a railway train *signalling system of the class described, the combination with a suit*ably connected insulated block or section of track, of a locomotive travelling on such block or section and normally in electrical connection with the same, and a source of electricity carried by said locomotive, an annunciator in circuit with said source of electricity, a pole changing switch controlling said battery and capable of cutting out the annunciator and battery and establishing a complete circuit through said locomotive independent of said battery and bell, another travelling vehicle included in the circuit and carrying a suitable source of electricity and annunciating apparatus so arranged to close the circuit through the locomotive when it enters a common block or section, and suitable electrical connections. 3rd. In a railway signalling system of the class described, the combination with an insulated block or section of track suitably electrically connected with a station and with a travelling locomotive, of a locomotive provided with a source of electricity, an annunciator, suitable electrical connections, and a pole-changing switch capable of cutting out its battery and bell to complete an independent circuit through the locomotive, and a station equipped with a suitable source of electricity, an annunciator, a pole changing switch and a key included in a shunt loop, and suitable electrical connections, all arranged whereby reciprocal signalling is established between the said station and trains travelling in either direction toward the same. 4th. In a railway signalling system of the class described the combination with a controlling switch comprising a double set of pole changing contacts adapted to be engaged by bridging contacts on the switch lever and a set of short circuit contacts also adapted to be bridged by the switch lever, of a source of electricity controlled by said switch, annunciating apparatus also controlled by said switch, and a circuit including another source of electricity and independent of the first source. 5th. In a railway signalling system of the class described, the combination with a track block or section, of a plurality of travelling vehicles on said block or section, and severally equipped with a suitable annunciator, a source of electricity, suitable electric connection, and a circuit controlling switch adapted to co-operate with the other auxiliary appliances to enable reciprocal signalling to be established between any two or more trains or vehicles travelling in common on a block or sections.

No. 46,840. Pulley. (*Poulie.*)

Harry Sutton Pell, Toronto, Ontario, Canada, 13th August, 1894; 6 years.

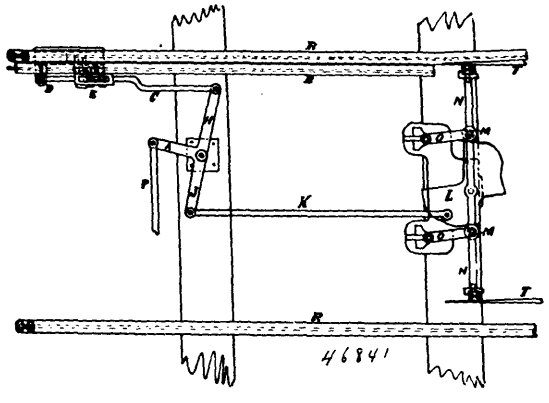
Claim.—1st. A sheet metal pulley, having the web and rim formed integrally, the web being provided with a series of recesses extending from the edge of the central hole of the web, and arranged radially for the reception of the spokes of the hub, as and for the purpose specified. 2nd. A sheet metal pulley having its web and rim formed integrally, the web being provided with a series of conical recesses following substantially the natural fold of the metal when bent in cylindrical form with the web at right angles to the rim and extending from the edge of the central hole of the web, and arranged radially for the reception of the spokes of the hub, as and for the purpose specified. 3rd. A sheet metal

pulley, the rim and web of which is formed of a rectangular blank, which is bent at right angles throughout its length to form the rim portion, which portion is turned into cylindrical form by suitable



means, the web portion being crimped or folded to form a series of semi-conical recesses, the ends of the web and rim portions being suitably connected together, as and for the purpose specified. 4th. The combination with the rim A^1, circularly formed and the web portion A, crimped into natural folds, so as to form determinate conical recesses, as specified, of the overlapping conical recesses a, in the web secured together by the rivets a^2, and the overlap a^1, in the rim secured to the abutting edge by the countersunk rivets a^3, as and for the purpose specified. 5th. The combination with the rim A^1, and web A, formed with the determinate folds forming conical recesses suitably connected at the point of junction of their ends, of the hub B, provided with spoks b, extending into certain recesses and secured therein by the rivets b^1, as and for the purpose specified.

No. 46,841. Apparatus for Moving and Locking Railway Points and Safety Bars. (*Appareil pour mouvoir et fermer les langues de changement de voie et barres de sûreté.*)

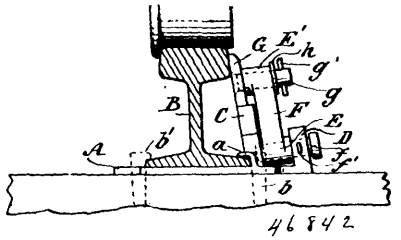


Peter Black, Canterbury Road, Killburn, County London, England, 13th August, 1894; 6 years.

Claim.—1st. Apparatus for moving and locking railway points and safety bars, consisting of a lever with cam arms connected with the pull and push rod, which lever acts upon rollers connecting the points, the end portions of its cam arms being arcs struck from the centre of its pivot, and a rod connected with the pull and push rod and having rollers which engage with the lever connected with the safety bar, substantially as and for the purpose described. 2nd. In a railway switch, the combination of the point tongues, of the rods N^1, N^2 whose ends overlap, and are provided with the notches m^1, m^2 of different sizes, of the lever L having cam arms bearing against the rollers M, in the rods N^1, N^2, of the projecting arcs l^1, l^2, on the levers of different sizes corresponding with the said notches, of the pull and push rod connected with the lever L, and with the rod C, which has the rollers E, and of a lever F connected with the safety bar, and provided with teeth which engage with the rollers E, substantially as and for the purpose described. 3rd. In a railway switch, the combination, with the point tongues, of the rods N^1, N^2 whose ends overlap, and are provided with the notches m^1, m^2, of different sizes, of a lever L connected with the push and pull rod and having cam shaped arms bearing against the rollers M, and of the projecting arcs l^1, l^2, on the lever of different sizes corresponding with the said notches, substantially as and for the purpose described. 4th. In a switch, the combination, with the point tongues and the lever for moving the same, of the rods N^1, N^2, whose ends overlap and have the notches m^1, m^2 therein, and of the projecting arcs l^1, l^2 on the lever, each adapted to enter one of the said notches, substantially as and for the purpose described. 5th. In a railway switch, the combination, with the pull and push rod and the rod joining the point tongues, of means connected therewith for moving the points, said means consisting of rollers bearing against a lever with cam arms, the end portions of its arms being arcs struck from the centre of its pivot, substantially as and for the purpose described. 6th. In a switch, the combination, with the pull and push rod, of the lever L connected therewith and having cam arms whose end portions are arcs struck from the centre of its pivot, and the rollers M bearing against the edges of the lever and mounted on the rod which connects the two point tongues, substantially as and for the purpose described. 7th. The combination, with a safety bar of means for operating the bar, said means consisting of the rod C, connected with the pull and push rod and having rollers which engage with a lever pivoted to the safety bar. 8th. The combination, with a safety bar, of a radial arm jointed thereto, of a toothed lever F connected with said arm, and of a rod C connected with the push and pull rod, the rod C working under a roller D and having rollers E, which engage with the teeth of the lever F.

No. 46,842. Detector Bar for Switches.

(*Barre à délateur pour aiguilles.*)



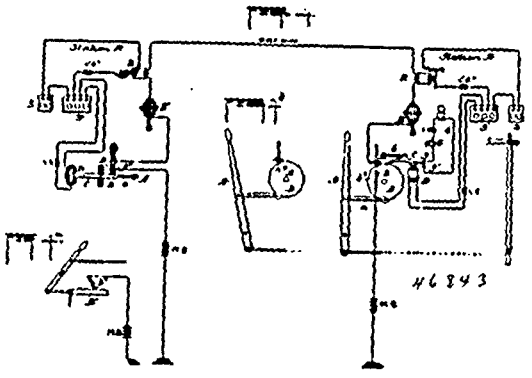
James Henry Boylett, Poughkeepsie, New York, U.S.A., 13th August, 1894; 6 years.

Claim.—1st. A detector bar for switches, comprising a plate adapted to be secured to the tie, an arm obliquely journalled in bearings thereon, and a bar pivoted to the said arm and laterally movable thereon, substantially as and for the purpose herein set forth. 2nd. In a detector bar for switches, a securing plate having a longitudinal lip with spike holes passing therethrough, a plurality of holes opposite thereto, and bearings mounted upon the plate obliquely thereto, and having aligning apertures therein, substantially as and for the purpose herein set forth. 3rd. A detector bar for switches, comprising a plate having a lip thereon, and spike holes therein, bearings rearward of the lip ranging obliquely to the plate, a pin extending through the said bearings, a hub journalled on the said pin, a radial arm mounted on the said hub at one side thereof, and having a similar hub at the top thereof, and a pin passing through the upper hub and secured to the detector bar, substantially as and for the purpose herein set forth. 4th. A detector bar for switches, comprising a plate having a lip thereon, and adapted to be secured to the tie by means of spikes, bearings rearward of the said lip projecting upwardly obliquely to the said plate, the inner bearing extending upward to the lowest level of the detector bar, to support same, a removable pin passing through the bearings, a tubular hub journalled thereon, a radial arm formed in one piece with the said hub and secured at the top to a similar hub, a pin passing through the upper hub and secured to the bar, the said pin being of such a length as to render the bar laterally movable, and a key secured in the end of the said pin, substantially as and for the purpose herein set forth. 5th. A detector bar for switches, comprising a plate having a lip thereon, and adapted to be secured to the tie by means of spikes, bearings rearward of the lip projecting upwardly, obliquely to the plate, the inner of the said bearings rising to the lowest level of the detector bar, to support same, a pin passing through the bearings and secured thereto by a key, a tubular hub journalled on the said pin, a radial arm secured thereto, a similar hub mounted upon the upper end of the arm, a pin passing through the said upper hub and secured to the bar, the said pin being of such a length as to render the bar laterally adjustable, a key passing through the said pin near the end thereof, and one or more washers mounted upon the said pin at one side of the hub, substantially as and for the purpose herein set forth. 6th. In a detector bar for switches, the combination, with a plate having a longitudinal lip near one side thereof, spike-holes extending through the said lip and the plate a plurality of graduated spike-holes at the opposite end thereof, two bearings rearward of the said lip projecting upwardly, obliquely to the said plate and toward the rail, the inner bearings extending upwardly approximately midway to the top of the rail to support the detector bar, apertures in the bearings, a removable pin inserted therein, a key passing through the outer bearing and through the pin to secure the same, a tubular hub mounted upon the pin, a radial arm secured upon one side of the said hub and formed in one piece therewith, a similar hub mounted upon the top of the arm, a pin passing through the said upper hub

and riveted to the bar, the said pin being of such length as to permit of lateral movement of the said bar according to the width of the rail head, a key inserted through the said pin near the outer end thereof, and one or more washers upon the said pin at one side of the hub, substantially as and for the purpose herein set forth.

No. 46,843. Electric Block System.

(*Block système électrique.*)

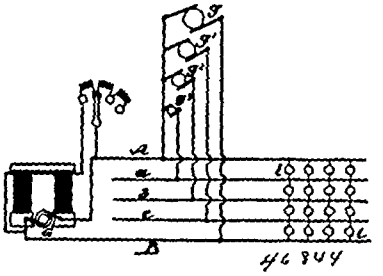


The Electric Selector and Signal Company, New York, State of New York, assignee of Michael B. Leonard, Richmond, Virginia, all in the U.S.A., 13th August, 1894; 6 years.

Claim.—1st. An electrical apparatus adapted for railroad block systems of signalling between two or more offices or stations, comprising at each station a visual signal, mechanism for locking the signal in normal position, an unlocking magnet adapted to operate upon said locking mechanism and release the signal, an electrical transmitter arranged in relation to the signal locking mechanism so as to operate only when the signal mechanism at that station is placed in normal position, said transmitter being placed in an electric circuit and controlling the unlocking magnet circuit at the distant station so as to affect the distant magnet only, whereby the signal at the distant station is adapted to be unlocked by the operator at the home station and then only when the signal at the latter station is locked in normal position, substantially as described. 2nd. In an interlocking block signalling system comprising two or more offices or stations, a visual signal for each station, mechanism for locking the signal in normal position, means for releasing the signal including a normally open local circuit, an unlocking magnet placed in said circuit and adapted to unlock the signal and a transmitting device placed in circuit with the line wire and controlling the unlocking magnet circuit at the distant station so as to release the distant signal only, and means for preventing the operation of the transmitting instrument at either station until the signal mechanism at the station whose transmitter it is desired to operate is placed in normal position, whereby the signal at each station may be unlocked by the operator at the distant station and then only after the latter operator has placed his own signal in normal position, substantially as described. 3rd. In an interlocking block signalling system comprising two offices or stations, a semaphore lever at each station, a disc connected with said lever and adapted by a partial rotation to shift the signal, said disc being provided with a transverse opening through the same, a plunger-transmitter adapted to register with said opening when the disc and signal lever are in their normal positions, an unlocking magnet provided with an armature lever adapted to engage and lock the disc in its normal position, and main and local circuit connections, whereby the signal at each station is adapted to be unlocked from the distant station only when the working plunger and disc occupy fixed positions relatively to each other, substantially as described. 4th. In a signalling system, a visual signal and means for locking the same in normal position, comprising a peripherally notched rotary disc connected with the signal lever and provided with a transverse opening through the same, an armature lever adapted to engage the notch in said disc so as to lock the same against rotation, an electro-magnet adapted to actuate said armature-lever, a plunger transmitter adapted to register with the opening in said disc only when the latter is locked with the signal in normal position, and circuit connections substantially as described, whereby the semaphore lever may be unlocked from a distant station only when the signal and locking disc at such station are in their normal positions, substantially as described. 5th. The combination with the respective semaphores or signals of a signalling apparatus, of a locking device consisting of a disc connected to the semaphore lever, and adapted to be moved a part revolution, an armature adapted to engage and lock said disc, and an electrical transmitting device adapted to operate only when the disc is locked, substantially as described. 6th. In a signalling system, a visual signal provided with an operating lever, a disc connected to said lever, and adapted by a partial rotation to shift said signal, means for automatically rotating said disc, an electro-magnet whose armature is arranged to engage said disc, and thereby lock said signal in normal position, and a selecting instrument adapted to respond to a predetermined arrangement of electrical impulses for the purpose of unlocking the signal, in combination with an electrical apparatus placed at a distance from said signal and adapted to transmit the electrical impulses to which said selecting instrument may respond, substantially as described. 7th. A selecting or preparing instrument adapted to respond to a predetermined arrangement of electrical impulses, and a transmitting device for transmitting said impulses, in combination with a lock signal and means operated by the selecting instrument to unlock the signal and means for preventing the operation of these devices until the operator's signal is placed in normal position. 8th. In a signalling system, a visual signal and means for locking the same in normal position, in combination with an electrical apparatus placed at a distance therefrom, adapted to transmit electrical impulses, and thereby unlock said signal, and means to prevent the transmission of said unlocking impulses until the signal at the transmitting station is placed in normal position. 9th. In a block system, a series of signals located at the end of each block, and means connected with each of said signals to prevent the operator from working his own signal, and provided with a locking device at each signal, in combination with an electric selecting apparatus responding to a predetermined arrangement of electric impulses, an electrical impulse transmitting instrument at a distant station adapted to transmit said predetermined arrangement of impulses, and means for preventing the transmission of said impulses until the signal at the transmitting station is locked in normal position.

No. 46,844. System of Electrical Distribution.

(*Système de distribution électrique.*)

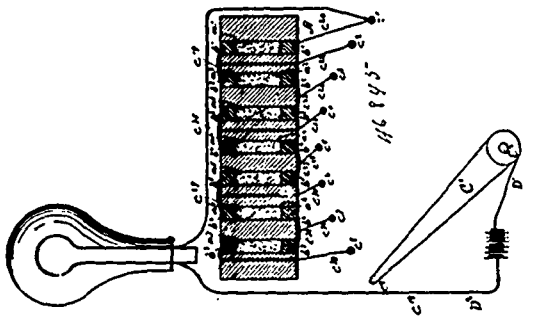


Waldemar Meisner, Konigsberg, Prussia, Germany, 13th August, 1894; 6 years.

Claim.—1st. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductor as a common conductor, and having their other terminal individually connected to one of the other conductors, substantially as described, in such a way as to maintain constant potential in the various groups of devices, irrespective of their load. 2nd. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generator or generators having means of regulation, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 3rd. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generator or generators having supercompound windings, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 4th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of said main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, all of said compensating generators being mutually related, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 5th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged

in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generators being mechanically connected together so that constant potential is maintained in the various groups of devices, irrespective of their load. 6th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generators having normally different electro-motive forces from the main generators, so that constant potential is maintained in the various groups of devices, irrespective of their load. 7th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generators being provided with means for regulating their electro-motive force, so that constant potential is maintained in the various groups of devices, irrespective of their load. 8th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generators being provided with means for regulating their electro-motive force, and means whereby they can be operated either as a generator or a motor, depending upon the demands of the groups of the system, so that constant potential is maintained in the various groups of devices, irrespective of their load. 9th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, and auxiliary generators connected directly in the shunt circuit to bring up the electro-motive force of said branch circuits, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 10th. In a series multiple system of distribution, the combination of the translating devices, with directly connected compensating generators having compound windings and also additional supercompound windings, so that constant potential is maintained in the various groups of devices, irrespective of their load. 11th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, said compensating generators having compound windings, and series supercompound windings, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 12th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, all of said generators, both main and compensating, having additional regulating means for supercompounding, substantially as described, so that constant potential is maintained in the various groups of devices, irrespective of their load. 13th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in parallel series between said main conductors, intermediate conductors between the groups, and compensating generators directly connected by one terminal to one of the main conductors as a common conductor, and having their other terminal individually connected to one of the other conductors, and a suitable switching device whereby the connections of the circuits are interchanged to compensate for the loads, in such a way as to maintain constant potential in the various groups of devices, irrespective of their load. 14th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in multiple series between said main conductors, intermediate conductors between the groups, and compensating generators connected to the said conductors, said compensating generators being of different electric capacity so as to supply currents of different tension, and switching devices whereby the translating devices are enabled to be connected to the various conductors in such a manner as to receive currents of varying tension. 15th. In a system of electrical distribution, the combination of main conductors, an electric generator connected to said main conductors, groups of translating devices arranged in multiple series between said main conductors, intermediate conductors between the groups, and compensating generators connected to said conductors, said compensating generators being of different electric capacity so as to supply currents of different tension, and switching devices whereby the translating devices are enabled to be connected to the various conductors in such a manner as to receive currents of varying tension, said compensating generators having means of regulation whereby their electric capacity may be further varied.

No. 46,845. Rheostat. (*Rhéostat.*)

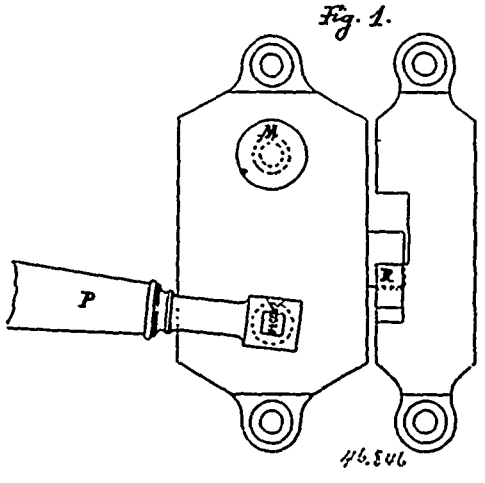


Charles A. Hussey and Charles C. Exley, both of New York, State of New York, U.S.A., 13th August, 1894; 6 years.

Claim.—1st. In a rheostat, the combination of a plurality of resistances composed of materials having different degrees of conductivity, with insulating material between the resistances and means whereby said resistances may be thrown into or out of circuit, substantially as described. 2nd. In a rheostat, the combination of a block of insulating material provided with a cavity or cavities and a conducting material therein composed of powdered material of good conductivity and peroxide of manganese, substantially as described, and means whereby said material may be thrown into or out of the circuit, substantially as specified. 3rd. In a rheostat, the combination of a block of insulative material provided with a cavity or cavities, granular or pulverized material therein, a screw or its equivalent for varying the compression of the said material consisting of a conducting material and pulverized peroxide of manganese and means whereby more or less of such material may be thrown in or out of circuit, substantially as specified. 4th. In a rheostat, the combination of an electric lamp socket or holder with a block of insulating material provided with cavities containing conducting material mixed with powered peroxide of manganese and so arranged that more or less of the material may be thrown into or out of the circuit to vary or extinguish the light, substantially as specified.

No. 46,846. Serrure. (*Lock.*)

Fig. 1.

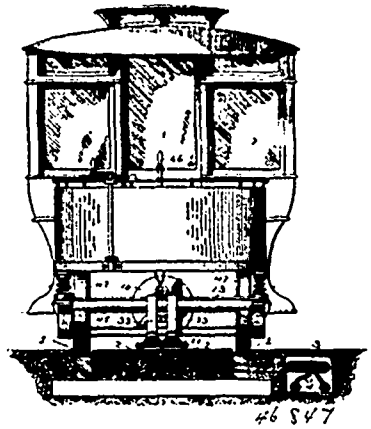


Odile Feher, St. Hyacinthe, Québec, Canada, 13 août, 1894; 6 ans.

Résumé.—Le pêne à coulisse A, les feuillets N et B, munis de leurs ressorts respectifs F et D, le tout tel que décrit et pour les fins ci-dessus mentionnées.

No. 46,847. Method of Propelling Vehicles by Electricity. (*Méthode de propulser les vaisseaux par l'électricité.*)

Fig. 4.



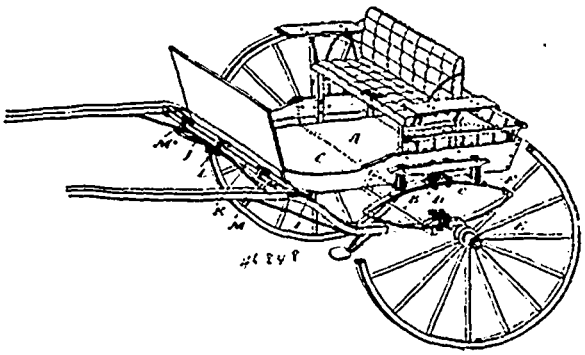
46 847

Ries and Henderson, assignees of Elias E. Ries, all of Baltimore, Maryland, U.S.A., 13th August, 1894; 6 years.

Claim. 1st. The method of propelling vehicles by the agency of electricity, by charging a motor circuit or circuits carried upon the car or cars, with currents of higher order by repeated induction from currents generated at a fixed station, substantially as described. 2nd. The method of propelling vehicles by the agency of electricity, which consists in charging electric motors mounted upon the vehicles and connected with an axle or axles of the same, with tertiary currents by induction from a track circuit or circuits, which in turn are charged by induction from one or more line circuits, substantially as described. 3rd. The method of propelling vehicles by the agency of electricity, which consists in producing upon a line or lines extending along the road of travel currents of high tension and small quantity, converting these currents into currents of low tension and great quantity in one or more extended track circuits, and finally converting these low tension currents by induction into currents of the requisite tension in a motor circuit or circuits carried upon the car or cars, substantially as described. 4th. The method of propelling vehicles by the agency of electricity, which consists in creating in a circuit or circuits disposed along a railway direct and neutralizing counter electro-motive forces, whereby the direct current is maintained at a minimum strength, and then removing counter-electro-motive forces by and in accordance with the length of a motor circuit or circuits mounted upon a car or cars, and thereby generating propelling currents by induction in the said motor circuits, substantially as described. 5th. The method of feeding travelling electric-motors with propelling currents, which consists in establishing a flow of currents of a given tension in a conductor or conductors extending along the line of travel, and in causing said currents to set up by induction in the circuit or circuits feeding the motors, propelling currents of a relatively higher tension, substantially as described. 6th. The method of feeding travelling electric-motors with propelling currents, which consists in progressively establishing a flow of current of the desired strength in successive conductors or conductor sections extending along the line of travel, by and during the presence upon said sections of a closed motor-circuit, and in causing said currents to generate induced propelling currents in a coil or coils constituting a part of said motor-circuit, substantially as described. 7th. The method of propelling vehicles by the agency of electricity by successfully closing, normally open circuits, extending along a railway by the entrance of a motor car upon a section of rails co-extensive with said circuits, causing a flow of current in said circuit during the presence of the car upon such section, and inducing by said currents propelling currents in the motor circuit carried by the car, substantially as described. 8th. An electric railway system, comprising a series of circuits disposed parallel to the track, and charged with currents of low potential and great quantity, an electric motor car or cars carrying a translator coil in inductive proximity to the track circuits, and an electric motor or motors in the circuits of said coil or coils, substantially as described. 9th. In an electric railway system, the combination with a main line extending along the road, a series of independent circuits extending along the track, and receiving current from the main line by induction, of a car or cars carrying a coil in inductive proximity to the track circuits, and a propelling motor or motors receiving currents from said coil or coils, substantially as described. 10th. In an electric railway system, a circuit or circuits extending along the road, and charged by induction with currents of low potential, a reactive shield or shields for said circuit or circuits, whereby the normal currents is reduced to a minimum, an electric motor car having in its motor circuit an extended translator coil in inductive proximity to the track circuits, and a magnetic shield for the coil which together with the reactive shield, constitutes a magnetic circuit around the track and coil conductors, substantially as described. 11th. In an electric railway, a rectilinear round metallic circuit or circuits extending along the track, and having each of its parallel sides provided with a reactive shield open on top, and means for charging said circuits by induction with currents of low tension and great quantity, in combination with a translator coil having two parallel sides, each in inductive relation to one side of the track circuit, and each provided with a magnetic shield open toward the opening of the reactive shield, substantially as described. 12th. In an electric railway, an extended stationary circuit charged by induction, and provided with a reactive shield open on one side, in combination with a travelling circuit in inductive proximity to the stationary circuit and provided with a magnetic shield open toward the opening in the reactive shield, and constituting with the latter, a magnetic circuit around the stationary and travelling circuits, substantially as described. 13th. In an electric railway, the combination of a main circuit extending along the road, and charged with alternating currents from a stationary source, and a series of independent track circuits, also extending along the road, and charged directly or indirectly by induction from the main circuit, with a translator coil mounted upon a car in inductive relation to the track circuits, and a motor in the coil circuit geared to a car axle or axles, substantially as described. 14th. In an electric railway, the combination of a main circuit extending along the track charged with alternating currents of high tension from a stationary source, and a series of independent track circuits also extending along the track and capable of being charged by induction from the main circuit, directly or indirectly, with alternating currents of low tension and great volume, with a translator coil, mounted upon a car in inductive relation to the track circuits, and a propelling motor in the coil circuit, substantially as described. 15th. In an electric railway, the combination of two or more stationary circuits extending along a road and inductively connected with each other, and a prime generator of alternating currents connected with one of said circuits, with a car having a translator coil in inductive relation to another of said circuits, and a propelling motor fed by the currents generated in the coil, substantially as described. 16th. In an electric railway, the combination of a main line extending along a track and charged with alternating currents of high tension from a stationary source, and a series of normally open track circuits capable of carrying currents of low tension and great volume and inductively connected with the main line; a car carrying a translator coil in inductive proximity to the track circuits, a switch for closing each track circuit upon the entrance of a car upon the corresponding track sections, substantially as described. 17th. In an electric railway, the combination of a railway track divided in a number of insulated sections, and a like number of co-extensive independent and normally open track circuits, each inductively connected with a common main circuit charged with alternating electric currents from a stationary source, with a motor car propelled by induction from the track-circuits, a switch for closing and opening these circuits, actuated by an electro-magnet or solenoid, and connections for charging the magnet or solenoid by the car wheels upon the track, substantially as described. 18th. In an electric railway, the combination of a circuit or circuits disposed along the track and charged with alternating currents, with a motor car carrying and actuated by a translator coil in inductive proximity to said circuit and means whereby said coil may automatically rise and fall, substantially as described. 19th. In an electric railway, the combination of a circuit or circuits disposed along a railway and charged with alternating currents, and a partial magnetic shield for said circuits, with a translator coil, also provided with a partial magnetic shield, carried by a car in inductive proximity to the circuits and connected with a propelling motor, and magnetic bridges between the two shields, substantially as described. 20th. The improvement in the art of electric locomotion, consisting in propelling travelling vehicles by electric motors mounted thereon and supplied with current by induction from sectional inducing conductors extending along the line of way in a direction parallel with the line of the vehicles, substantially as set forth. 21st. The improvement in the art of electo-locomotion consisting in propelling travelling vehicles by electric motors mounted thereon and supplied with current by induction from sectional inducing conductors extending parallel with and buried entirely beneath the surface of the roadway over which the vehicles travel, substantially as set forth. 22nd. The improvement in the art of electric locomotion, consisting in causing a progressive flow of current along sectional conductors extending along the line of travel by and in accordance with the motion of a vehicle over the same, and in causing said current to set up by induction, current of different tension upon the vehicles for propelling the same. 23rd. The method of propelling vehicles by the agency of electricity, by charging a motor circuit or circuits carried upon the car with propelling current by electro-dynamic induction from sectional inducing conductors extending along the line of travel, substantially as set forth. 24th. The method of propelling vehicles by the agency of electricity, which consists in supplying sectional inducing conductors extending along the line of travel with alternating currents of a given tension, and in causing said currents to generate by induction alternating propelling currents of a different tension in a motor circuit or circuits carried by the vehicle, substantially as set forth. 25th. A translator coil composed of elongated turns of insulated conductors, and two magnetic troughs, one for each side of the coil and connected by a magnetic web extending

between the two sides of the coil to constitute a core for the same, substantially as described. 26th. The combination of two parallel magnetic troughs, connected by a magnetic web, with end pieces provided with channels which connect the two troughs into one continuous trough, and an elongated coil of insulated conductors housed in the troughs and channels, substantially as described. 27th. In an electric railway, the combination of two parallel track conductors constituting a round metallic circuit charged with alternating currents, and a twin magnetic trough disposed along the road for housing the said conductors with a motor car carrying a translator coil, the two sides of which are spaced to conform to the spacing of the track conductors, and twin magnetic troughs for the coil, substantially as described.

No. 46,848. Cart. (*Charette.*)



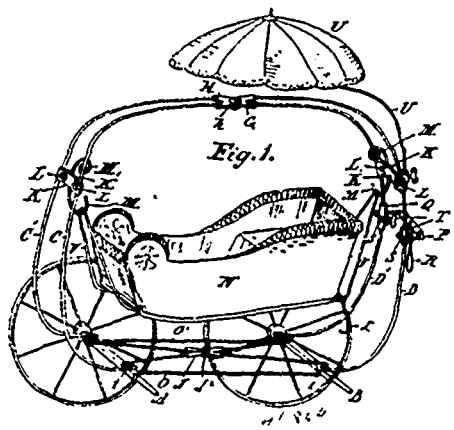
William Brogan, Mt. Albert, Ontario, Canada, 13th August, 1894; 6 years.

Claim.—1st. In a cart, the combination of a body A, straps C, supporting the body A, spring bars D to which are connected the straps C, elliptical springs E to which are pivotally connected the spring bars D, and the axle, substantially as and for the purpose specified. 2nd. In a cart, the combination of a body A, straps C supporting the body A, the spring bars D to which are secured the respective ends of the straps C, elliptical springs E to which is pivotally connected its respective spring bar D, the hellical springs F supporting the ends of the spring bar D, and the axle, substantially as and for the purpose specified. 3rd. A cart consists of an axle, the wheels, the elliptical springs secured to the axle and the body supported and pivotally connected to the springs, substantially as and for the purpose specified. 4th. In a cart, the combination of the wheels and axle and elliptical springs of a body mounted upon the springs, a flat spring connected to the underside of the body at each side of the same, each of said flat springs pivotally connected at its forward end to its respective end of a flat spring secured to the cross-bar, substantially as and for the purpose specified. 5th. In a cart, the combination of the wheels and axle, elliptical springs E rigidly mounted on the axle at each end thereof, the spring bars D mounted on the top of each of the elliptical springs E and pivotally connected thereto, hellical springs F mounted on the top of each of the elliptical springs E and supporting each end of the spring bar D, the straps C secured to the spring bars D, the body A supported on the straps C, the flat springs I, I^1, connected to the underside of the body A, the spring J connected to the underside of the cross-bar K, the ends of the springs I, I^1, pivotally connected to the spring J, the spring operated trace fasteners connected to the cross-bar K, and the straps M, M^1 encircling the cross-bar K, connected to the front end of the body A, substantially as and for the purpose specified.

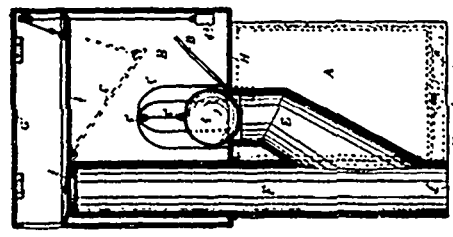
No. 46,849. Child's Carriage. (*Voiture d'enfant.*)

Abner Woodward, Shelburn Falls, Massachusetts, U.S.A., 13th August, 1894; 6 years.

Claim.—1st. The combination in a child's carriage, of a frame consisting of front and rear sections secured to the running gear, and a cot or cradle hung to said frame, to swing laterally, whereby the child will not be displaced from the cot or injured by accidental overturning of the carriage, substantially as set forth. 2nd. The combination of a laterally swinging cot or cradle, and a wheeled frame composed of front and rear counterpart sections connected at the top by a coupling plate and jointed at the bottom by plates connecting the terminations of said sections, said sections respectively attached to the front and rear axles or running gear of a child's carriage or to a sleigh, and said axles connected rigidly together by side bars, as set forth. 3rd. The combination in a child's carriage of a frame composed of light rods that connect the axles of the vehicle, and adapted to support the body thereof, and a grooved and capped coupling plate that unites the bend of said rods, in the manner described. 4th. A child's carriage provided with a supporting frame to which an adjustable handle is applied, for the purpose described. 5th. The combination in a child's carriage, of a frame composed of a front section C, C^1, and a rear section D, D^1, bent as set forth, and a coupling plate G, having grooves g, g^1, that admits the bends c^1, d^1, a cap H, that rests upon said plate, and a fastener h, that secures the cap in place, all as described. 6th. A child's carriage having a supporting frame, for a cot or cradle, a handle or yoke P, provided with bends S, S^1, sleeve O, in two sections, and clamp screws T, for adjustment of the handle higher or lower, as set forth. 7th. The combination with the supporting frame sections, of the adjustable plates K, K^1, adjustable hooks M, and a swinging cot or cradle N, having hangers V, suspended from said hooks, as set forth. 8th. The combination of the swinging cot or cradle, having hangers V, of the adjustable handles P, the frame supporting said cot, and a suspended snap hook R, attached to said handle to engage the hanger, for the purpose set forth. 9th. The combination with the swinging cot or cradle, having hangers V, of the hook X, for engagement with a wheel of the carriage, for the purpose described.



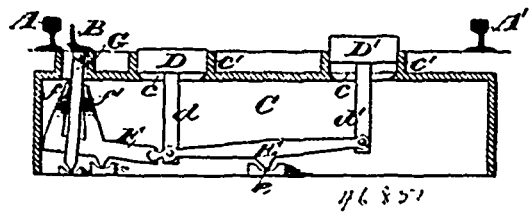
No. 46,850. Street Gully. (*Egout pour rues.*)



Louis Lavergne dit Reneaud, Montreal, Quebec, Canada, 14th August, 1894; 6 years.

Claim.—A street gulley composed of two square or rectangular sections A and B made in one or several pieces, the one A having a bottom a and containing a bucket C, forming a cesspit with a trap door c^1 in its bottom, and the one B having the partition b, door b^1, weight b^2, shelf H, sewer connections E and F, ball trap e contained in a cage e^1, plug f, and cover G, substantially as described and for the purposes set forth.

No. 46,851. Railroad Switch. (*Aiguille de chemin de fer.*)

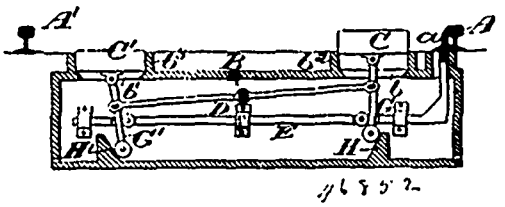


The New York Car Switch Company, New York, assignee of Samuel F. Clouser, Brooklyn, both in the State of New York, U.S.A., 14th August, 1894; 6 years.

Claim.—1st. A railway switch, comprising a vibrating lever, means for operating it, a vibrating arm connected with the switch tongue and a rock lever, having one arm pivotally engaged with the vibrating lever and its opposite arm provided with bearings arranged to move along in engagement with the vibrating arm to swing it back and forth, substantially as set forth. 2nd. A railway switch, comprising a vibrating lever, vertically movable treadles connected with the opposite arms of the lever, a vibrating arm connected with

the switch tongue and a rock lever having one of its arms pivotally engaged with one arm of the vibrating lever and another arm extended upwardly and engaged with the vibrating arm and having a sliding movement along said arm to move it back and forth, substantially as set forth.

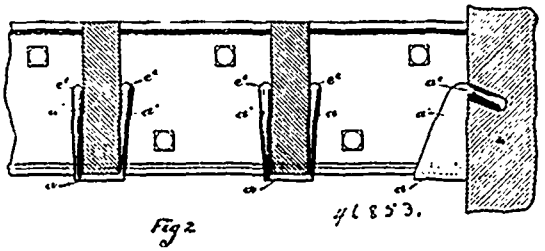
No. 46,852. Railway Switch. (*Aiguille de chemin de fer.*)



The New York Car Switch Company, New York, assignee of Samuel F. Clouser, Brooklyn, both in the State of New York, U.S.A., 14th August, 1894; 6 years.

Claim.- 1st. Switch operating mechanism, comprising a suitable box or support, a longitudinally movable bar adapted to be connected with the movable switch rail, reciprocating treadles connected to move simultaneously in opposite directions, bars or plungers depending from the treadles in position to operate the said longitudinally movable bar and inclines located within the box in position to engage the movable parts to give the longitudinal movable bar the necessary thrust, substantially as set forth. 2nd. The combination, with a movable switch rail or tongue of a longitudinally sliding bar connected at one end with the switch rail or tongue, *guides for holding the longitudinally sliding* bar against lateral displacement, vertically reciprocating treadles, inclined faced plungers fixed to the treadles and extended into position to engage bearings on the longitudinally sliding bar, guards for preventing the plungers from lateral displacement, a vibrating lever connecting the plungers and bearings in position to receive the treadles and limit their downward movement, substantially as set forth. 3rd. The combination, with a vertically movable treadle and a wall surrounding it and forming a guide for it, of a downwardly and inwardly inclined surface in position to form a stop for the downward movement of the treadle, substantially as set forth.

No. 46,853. Joist Hanger. (*Support de solives.*)



Henry August Goetz, New Albany, Indiana, U.S.A., 14th August, 1894; 6 years.

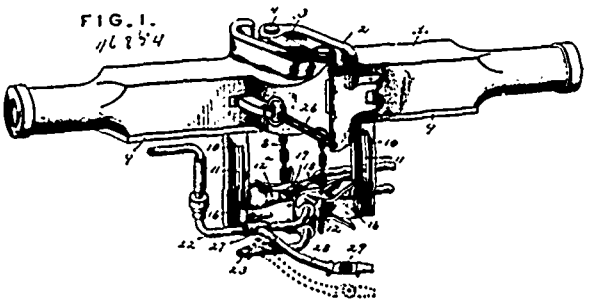
Claim 1st. A metal hanger for supporting joists and other beams, consisting of two parallel sides, flattened and joined at their lower end, to form a socket seat, but otherwise disconnected from each other, and two parallel projecting arms joined respectively and separately to the upper ends of said sides at an angle thereto, and separated a distance substantially equal to the width of the seat, and adapted to enter socket holes in the sides of the supporting parts, substantially as described. 2nd. A metal hanger A, for joists and other beams, consisting of a flat bearing plate a, two upright parallel sides a^1, and two parallel projections a^2, extending back from and in the same plane with the latter and bent down at an acute angle thereto, substantially as described. 3rd. A metal hanger for joists and other beams, composed of a flat seat a, two parallel side pieces a^1, rising and gradually tapering therefrom, and two parallel projections a^2, extending back from the latter, round in cross-section, and bent down at an acute angle to the sides, whereby they are adapted to be entered in similar sockets in the sides of suitable supports, substantially as described.

No. 46,854. Combined Car and Air Brake Coupler.

(*Attelage de char et frein combinés.*)

Smith W. Summers, St. Louis, Missouri, U.S.A., 14th August, 1894; 18 years.

Claim.—1st. In combination with a twin-jaw car coupling, the coupling shoes 12, the pipes connected thereto, front hangers for said shoes, the springs 16, for holding the shoes coupled, and slotted hangers 10, for receiving the springs, substantially as set forth. 2nd. The combination with the opposite car coupling heads, the rear inverted L-shaped slotted hangers secured thereto and depending therefrom, the separate hangers in front and at one side of the slotted hangers, of the opposite coupling shoes having convexed inner faces, front bevelled ends, converged outer ribs, a perforation in each shoe, a pipe connected with each perforation, a gasket for each perforation, and curved springs connected to the rear ends of the shoes, passing through the slotted hangers, and overlapping the inner sides of the shoes, substantially as set forth. 3rd. In a combined car and air brake coupling, the combination with a knuckle coupler, of a slotted standard depending vertically from the same and in rear of the head, a hanger connected to the lower extremity of the knuckle pin of the coupler, the self-adjusting coupling shoe suspended from said hanger and having a part thereof loosely supported in the slot of said standard, and means for automatically coupling said shoe with a companion shoe, substantially as set forth. 4th. In a combined car and air brake coupling, the combination with a knuckle coupler, the knuckle pin of which is provided with a lower threaded end, a hanger arm provided with a threaded opening in one end engaging the threaded end of the knuckle pin a short hanger chain suspended from the inner end of said hanger arm, a coupling shoe suspended from the lower end of said short hanger chain, a hanger for the coupling shoe in rear of said chain, a hanger for the coupling shoe in rear of said chain, suitable pipe connections for said coupling shoe, and means for automatically coupling said shoe with a companion shoe, substantially as set forth. 5th. The combination with the opposite car coupling heads, of the rear L-shaped slotted hangers secured thereto and depending therefrom, hanger chains suspended from the heads in front of said slotted hangers, opposite coupling shoes having interlocking inner faces, pipe connections with said shoes, and curved springs connected to the rear ends of the shoes and working in the slots of said slotted hangers, substantially as set forth. 6th. In a combined car and air brake coupling, the combination with the car coupling head of a coupling shoe suspended from the head and having a front wedge-shaped end, and an inner convexed side, a curved spring secured to the outer side of the shoe at the rear end thereof, and terminating opposite the face of the shoe in an outwardly bent end, a perforation in the shoe, a gasket therein, and a pipe connection with the perforation, substantially as set forth. 7th. In a combined car and air brake coupling, the combination with the car coupling heads, of the coupling shoes suspended from the heads and provided upon their inner faces with interlocking tongues and grooves, and pipe connections with said shoes, substantially as set forth. 8th. In a combined car and air brake coupling, the combination with the opposite coupling heads, of the coupling shoes adjustably supported beneath said heads, and provided with front wedge shaped ends, and converging flanges on such ends, and a curved or bowed spring catch secured fast at one end of each shoe, and adapted to have its other free end automatically engage and disengage the wedge shaped end of the opposite shoe, the spring catch on one shoe being reversely disposed to that on the other shoe, substantially as set forth. 9th. In a combined car and air brake coupling, the combination, with the car coupling head, of the coupling shoe suspended from said head, a pipe connected with said head, a three-way cock connected in the line of said pipe, and an ordinary brake hose connected with said three-way cock, substantially as set forth.

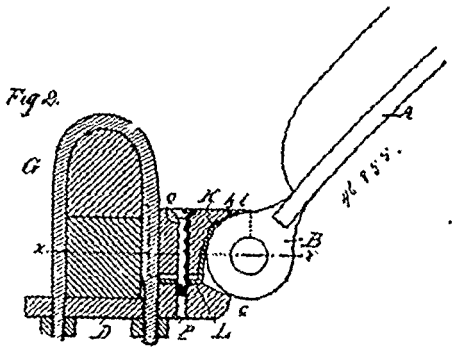


No. 46,855. Thill Coupling. (*Armon de limonière.*)

Louis Ballback, Detroit, Michigan, U.S.A., 14th August, 1894; 6 years.

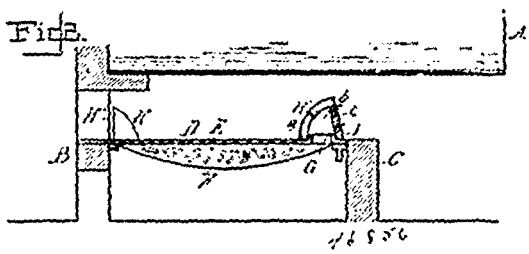
Claim.—1st. The combination with the shaft iron, the cylindrical head thereon, the pins C projecting from opposite sides of the head, the draft block comprising separated hooks, a wear block and means for forcing the wear blocks upon the pins, substantially as described. 2nd. The combination of a shaft iron, a cylindrical head thereon, pins C projecting from opposite sides of the head, a draft block comprising separated hooks, the inclined bearing faces b opposite the hooks, the tightener block, wear plates l adapted to fit between the hook and the inclined bearing d, cam faces n on said wear plates and the screw o, substantially as described. 3rd. The combination of the shaft iron, the cylindrical head thereon, the pins C projecting from opposite sides of the head, the draft block having separated hooks in which the pins are adapted to engage, the tightener block adapted to be wedged upon the pins, the screw for actuating the tightener block and the spring wear plate K between the tightener

block and the cylindrical head, substantially as described. 4th. The combination with the shaft iron, a draft block, substantially as



described, of the clip plate D made integral with the draft block the flanges e on the rear face of the draft block and the clip having a squared section I adapted to engage between the flanges e and the flanges J adapted to engage behind said flanges, substantially as described.

No. 46,856. Furnace Grate. (*Grille de fournaise.*)

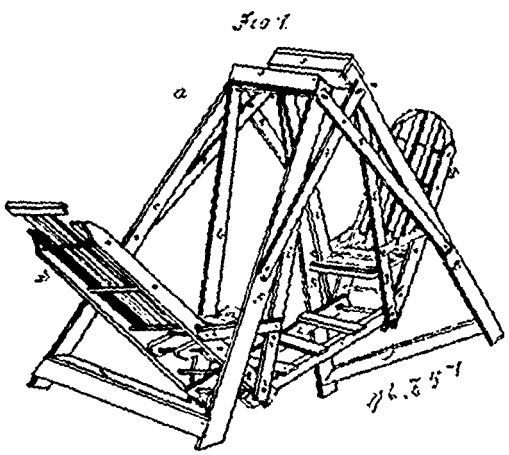


Thomas Craney, Bay City, Michigan, U.S.A., 14th August, 1894; 6 years.

Claim.—1st. In a furnace grate, the combination of a series of apertured grate bars, having passage ways G at the rear end of each bar, of the flanges I around such passage ways on the bars, and the hollow bridge wall formed in section the width of each bar and comprising the curved front wall *a* and the inclined rear wall *b* provided with inclined apertures, the lower side of the wall being open and fitting around the flanges, substantially as described. 2nd. In a furnace, the combination of the grate comprising the perforated grate bars, having at their rear ends a hollow raised ridge or cross-bar, having its rear face formed with a series of upwardly inclined perforations of the side grate bars having a raised air chamber J at their front ends consisting of the rear inclined perforated wall K and the front vertical wall K', substantially as described.

No. 46,857. Swing Chair Hammock.

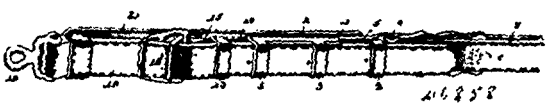
(*Chaise-hamac à bascule.*)



Charles Malcolm Burk, Colborne, Ontario, Canada, 14th August, 1894; 6 years.

Claim.—1st. The combination of the boxing in the top of the posts B, the chair arms *h*, and the brace boards J, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the crossing, the posts B, of hanging the four suspenders C, on one bolt K, the form of the braces G and the passing of one bolt K through all of the four posts B, where they cross, substantially as and for the purposes hereinbefore set forth.

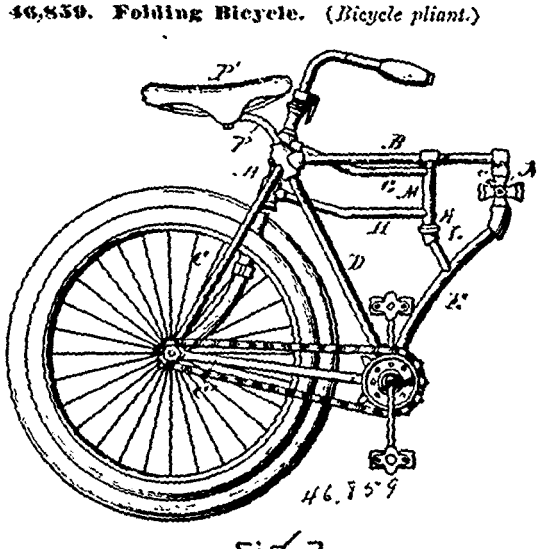
No. 46,858. Hame Tug. (*Crochet d'attelle.*)



William Timmins and William E. Moore, both of Wilsonville, Nebraska, U.S.A., 15th August, 1894; 6 years.

Claim.—1st. In a hame-tug, the combination of a tug-plate having transverse keepers and provided with a series of transverse slots, and the trace and adjusting plates located respectively at the rear and front ends of the tug-plate, and provided at their outer ends with transverse keepers, and having at their inner ends hooks detachably engaging slots of the tug-plate, substantially as described. 2nd. In a hame-tug, the combination with the tug-plate having the opposite side flanges and its bottom provided with a series of transverse slots, the trace plate slotted at its rear end to engage with the trace and having its front end reduced and bent to form a tongue engaging the rear slot of the tug-plate, of the adjustable plate arranged in the tug-plate and terminating at its front end in a reduced tongue and at its rear end bent to form a tongue for engaging the slots in the tug-plate, keepers formed on the tug, trace and adjustable plates, a buckle-plate bent to engage a buckle and having its rear end slotted to engage the tongue of the adjustable plate, the buckle arranged in the front bent end of the buckle-plate, the tug-strap terminating at its front end in an eye engaged with the buckle and passing under the several keepers of the several plates, the guard at the inner side of the tug and secured to the tug-strap, trace-plate and tug-plate, and the trace engaging the rear end of the trace-plate, substantially as specified. 3rd. In a hame-tug, the tug-plate 1 having transverse keepers 3, and provided with a series of transverse slots 4 whose edges are rounded or flared, combined with the trace-plate 5 located at the rear end of the tug-plate and engaging with one of the slots thereof and provided with keeper 9 and tongue 8, and an adjusting plate 10 provided with a keeper 13 and tongues 11 and 12, for the purpose set forth.

No. 46,859. Folding Bicycle. (*Bicycle pliant.*)

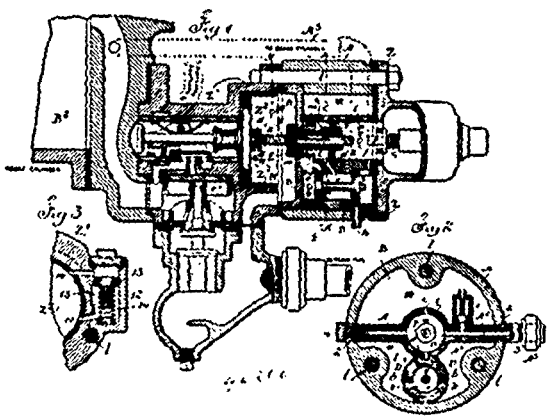


Michael B. Ryan, Boston, Massachusetts, Charles L. Backus and Charles F. Lincoln, both of Andover, Connecticut, all in the U. S. A., 15th August, 1894; 6 years.

Claim.—1st. The herein described folding bicycle, consisting of the standard A, bar B, frame standards C, D, braces E and F, the connecting rods G and H, and suitable interlocking devices, wheels, saddle, pedals and connecting parts adapted to operate, substantially as set forth. 2nd. In a bicycle, the standard A, the bar B, one or more rods suitably secured to the standard A, and hinged to the after part of the machine, the brace E, and suitable means for securing or interlocking the said rod or rods, combined and adapted to operate, substantially as set forth. 3rd. In a bicycle, the herein described interlocking mechanism consisting of the part N, of brace E, suitably formed to receive one or more rods secured to the front standard and having a hinged connection with the after part of the

machine, the button *a* movably secured to part N, and adapted to hold the said rod or rods interlocked, substantially as and for the purposes set forth. 4th. In a bicycle, the brace E, provided with the part N, suitably formed to receive one or more rods connecting the front standard A, with the after part of the machine by a hinged connection, and also having suitable catches *b*, b^1, near the ends of said part N, the button *a*, adapted to turn so that the ends a^1, a^2, of said button will enter said catches *b*, b^1, and said button will interlock the said connecting rod or rods, when placed between the part N and the button, the cam plate *c*, *d*, and the cam lever and hook *h*, *k* all arranged, combined and adapted as interlocking mechanism, substantially as and for the purposes set forth. 5th. In a bicycle, the combination of the bar B, brace E, the cam device *h*, *k*, *c*, *d*, and the button *a*, with one or more connecting rods secured to the main standard A, and having a suitable hinged connection with the frame of the machine, substantially as described. 6th. In a bicycle, the combination of the bar B, brace E, provided with the part N, adapted to receive one or more rods, connecting the front standard with the after part of the machine by a suitable hinged connection, and in combination therewith and suitable means for securing said connecting rod or rods to said part N, substantially as described. 7th. In a bicycle, the combination of the front standard A, the bar B, and one or more rods secured to said standard A, and having a suitable hinged connection with the machine and suitable means of securing rigidity, substantially for the purposes described.

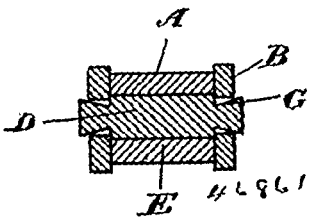
No. 46,860. Air Brake. (*Frein atmosphérique.*)



Nathaniel B. K. Hoffman, New York, State of New York, assignee of Jeremiah F. Voorhees, Philadelphia, Pennsylvania, both in the U.S.A., 15th August, 1894; 6 years.

Claim.—1st. The combination in the car brake apparatus with the triple valve, of automatic mechanism connected to the piston of such triple valve and controlled by the air pressure from the brake cylinder for automatically limiting the amount that the pressure is reduced to correspond to a proportionate amount of increase of pressure in the auxiliary reservoir and in the train pipe when releasing the brakes, substantially as specified. 2nd. The combination with the piston, of the valve that regulates the admission of air from the auxiliary reservoir to the brake cylinder of the interposed cylinder A, the cylinder C, and walls separating the cylinder A, into the air chambers W and U, the piston P, and stem R, connected to and moving with the triple valve, the piston P, being within the cylinder C, the piston valve L, the cylinder D, and its connected valves V^1, V^2, there being a port *a*, connecting with the brake cylinder, a port *e*, between the cylinder C, and the chamber W, ports *d*, *c*, *f*, between the cylinders C and D, and a port *o*, between the cylinder D, and the chamber U, an escape port *h*, to the atmosphere, and the check valve I, between the chamber W, and the pipe to the brake cylinder, substantially as set forth. 3rd The combination with the piston Z^2, and its valve that regulates the admission of air from the auxiliary reservoir to the brake cylinder, of the cylinder C, piston P, and stem R, connected to the piston Z^2, and its valve, an air chamber, pipe and check valve to admit air from the brake cylinder to act on the piston P, and automatically regulate the movement of the triple valve and its piston, substantially as set forth. 4th. The combination with the valve and its actuating piston, of a cylinder and an air pressure valve and its spring within such cylinder, holes or ports passing through the cylinder of the valve actuating piston, and so positioned as to be at opposite sides of said piston when the triple valve has been moved to apply the brakes, such ports extending to the cylinder at opposite sides of the air pressure valve, whereby air is allowed to pass into the brake cylinder and auxiliary reservoir to supply any defect of air from leakage and to maintain the proper relation between the pressure in the train pipe and in the brake cylinder, substantially as set forth.

No. 46,861. Drive Chain. (*Chaine sans fin.*)

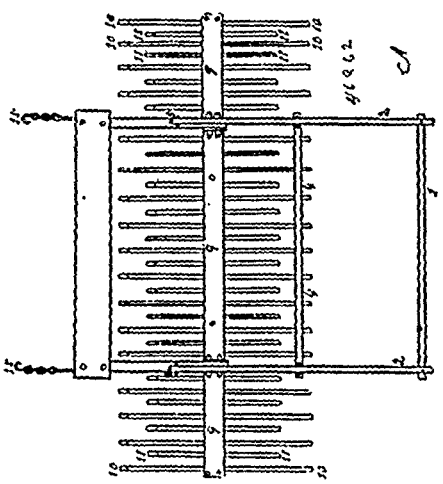


The Gould Bicycle Company, assignee of Harry Long, both of Brantford, Ontario, Canada, 15th August, 1894; 6 years.

Claim.—In a drive chain, a link consisting of a knuckle A, having a transverse passage F, formed therethrough, a pintle D, having a journal E, within the transverse passage, and having a notch or groove G, formed between each end of the journal E, and its respective end of the pintle, a head H, between the notch or groove G, the side bar B, having an eye C, adapted to enter the notch or groove G, and the eye C, shrunk under pressure or pressed into groove G, to lock the side bar to its respective end of the pintle, substantially as described.

No. 46,862. Revolving Pea Harvester.

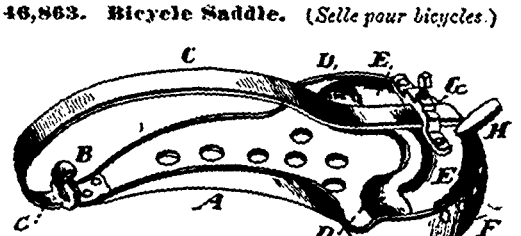
(*Machine tournante à récolter les pois.*)



Daniel Osborn, Picton, Ontario, Canada, 15th August, 1894; 6 years.

Claim.—1st. The brace 16, for holding the cross-bar 4, in proper position. 2nd. The combination of the upright 7, with the arm 8, and the brace 13, for the purposes set forth. 3rd. The combination of the handle 1, 2, 3 and 4, and the chain 6, with the upright 7, and arm 8, for the purposes set forth above.

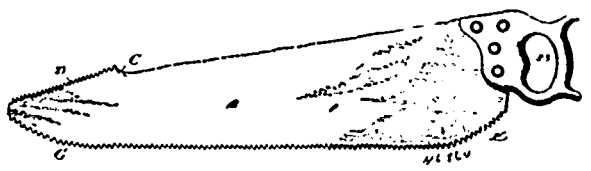
No. 46,863. Bicycle Saddle. (*Selle pour bicycles.*)



Louis Lawton Richmond, Meadville, Pennsylvania, U.S.A., 15th August, 1894; 6 years.

Claim.—The leather seat with hook in front, the concave plate riveted to the rear of said seat, the cushion arranged between the plate and rear of seat, the keeper riveted to the concave plate and a subjacent plate spring having a loop in front to connect with the hook of the leather seat, the rear of said spring being held adjustably in the keeper, all combined and arranged, substantially as shown and described.

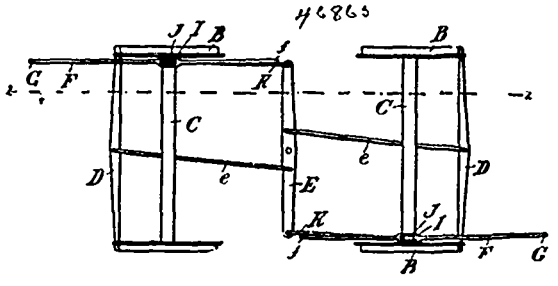
No. 46,864. Hand-saw. (*Scie à main.*)



William H. Bedell, Monroe, New Hampshire, U.S.A., 15th August, 1894; 6 years.

Claim.—A hand-saw having its lower cutting edge provided with one or more abrupt curves, as described, and having cutting teeth provided upon the upper edge of the blade at the free end thereof, substantially as specified.

No. 46,865. Car Brakes. (*Frein de char.*)

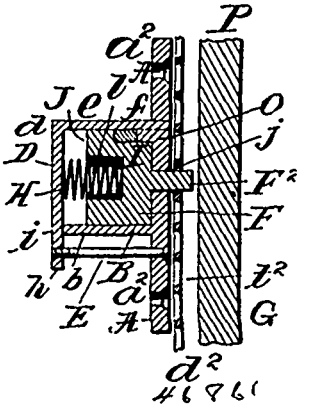


C. A. Christin, Ottawa, Ontario, Canada, 15th August, 1894; 6 years.

Claim.—1st. In a car brake, the combination with the brake beam D, connecting rods *e*, and operating rod E, of the toothed bar K, secured to one end of the said operating rod E, the toothed wheel M, secured on the axle C, of a car, adapted to be engaged by the said bar K, and means for operating the said bar K, substantially as set forth. 2nd. In a car brake, the combination with the toothed wheel M, secured on the axle C, of a car, of the toothed bar K, pivoted at one end to the operating bar of the brake beams, slots 1, formed in the said toothed bar, the bar F, pivoted to the truck at one end, the spiral spring H, holding up the free end under the platform A, of the car, the foot piece G, the hooks I, secured on the said bar F, engaging the said slots 1, in the bar K, and the grooved wheel J, journalled in a slot I, in the said bar F, substantially as set forth.

No. 46,866. Window and Door Fastener.

(*Arrête-croisée.*)

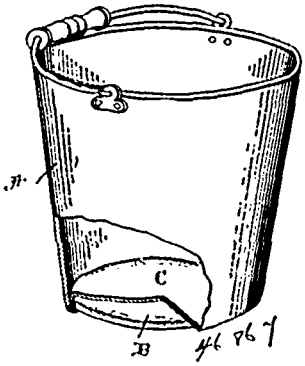


James N. Euwer, New Castle, Pennsylvania, U.S.A., 15th August, 1894; 6 years.

Claim.—1st. A plate A, having aperture *g*, and casing B, composed of side plates *a*, and bottom plate *b*, combined with cover D, having back plate *d*, and projection *h*, top plate *c*, having projection *f*, and rod E, and a bolt F, carried by the casing, substantially as described. 2nd. The plate A, and casing B, combined with a sliding bolt B, having a recess *l*, and with a spring within said recess, and a sliding rod having an inclined side for actuating said bolt, substantially as described. 3rd. The combination of the casing with a bolt sliding therein, and having a projection J, the wearing side of said projection being curved, with bar I, having an inclined edge *m*, to engage projection J, to move the bolt, substantially as described. 4th. The combination of a casing and its front plate, a bolt within said casing, and having a recess *l*, a spring within said recess, a projection J on said bolt, inclined rod I, to engage said projection to move the bolt and rod N, substantially as described. 5th. The combination of a casing having a front plate, a ledge *o*, bolt F having a recess *l*, spring H in said recess, projection J on said bolt, rod I having an inclined side, said rod having a hook-shaped end to engage projection J, for the purpose specified. 6th. A casing, projection M thereon, bolt F, combined with a bar having an inclined side to move said bolt, a projection L on said bar, and a spring between projections L and M, and a rod for moving the inclined bar, substantially as described. 7th. A casing containing a sliding bolt, combined with a bar having an inclined side to move said bolt, an independent spring to move said bar, and with a rod for moving the latter, substantially as described. 8th. A sash having a groove on its outer edge, combined with a plate over said groove, said plate having a series of apertures placed close together, the contiguous edges of said apertures being bevelled to permit a ready entrance of the bolt into the apertures, substantially as described. 9th. A sash having a groove on its outer edge, combined with a plate over said groove, and having a series of apertures to receive a bolt, said groove opening below said plate, substantially as described. 10th. A sash having a groove on its edge, combined with a plate over said groove, said plate being placed in a recess on said sash, said plate having a series of apertures to receive a bolt, substantially as described. 11th. A sash having a groove on its edge, combined with a plate P, said plate having a series of apertures that are oblong horizontally, substantially as described. 12th. A metal plate for a window sash having a series of apertures placed close together, their contiguous edge being bevelled, substantially as described. 13th. A plate for a window sash having a series of apertures that are oblong horizontally, substantially as described. 14th. The combination of bolt F, bar I, and rod N, having projections *t*, with a plate having apertures *w*, said plate acting to hold said rod when it is pushed through the aperture and turned, substantially as described. 15th. The combination of bolt F, bar I, rod N, having projection *t*, and a recess between said projection and the head *u*, with a plate having an aperture *w*, substantially as described.

No. 46,867. Bottoms for Metal Pails.

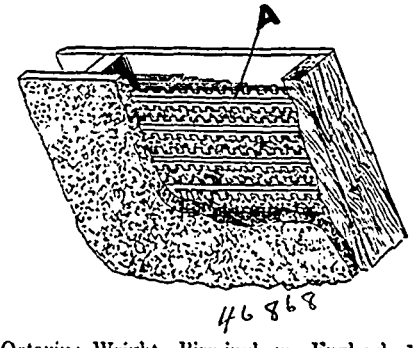
(*Fond de sceau métallique.*)



David A. Lisk and Truman V. Fox, both of Clifton Springs, New York, U.S.A., 15th August, 1894; 6 years.

Claim.—A bottom for pails and other vessels consisting of two concave plates of different metals, the upper plate being nested in and having greater natural expansive properties than the lower plate, the two plates being united at their edges only, substantially as and for the purpose described.

No. 46,868. Lath. (*Latte.*)

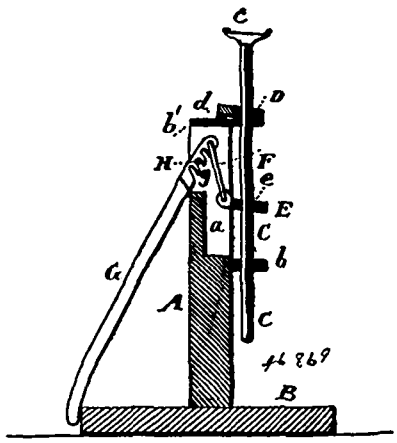


Arthur Octavius Wright, Birmingham, England, 15th August, 1894; 6 years.

Claim.—1st. The new laths and sheets for forming ceilings, floors

and partitions having an inclined groove or grooves, substantially such as and for the purpose herein described and shown. 2nd. The particular laths shown having the sharp edge a^7 which divides the plaster and directs it in two directions, as set forth.

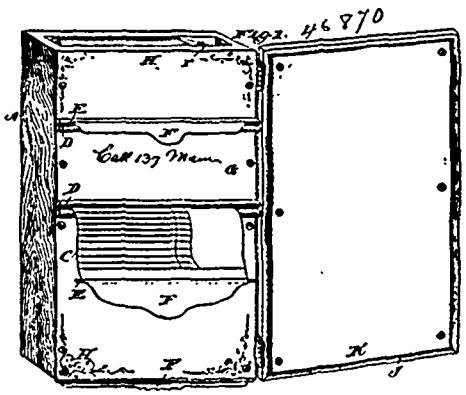
No. 46,869. Wagon Jack. (*Chèvre de wagon.*)



Harry H. Gould, assignee of Zenas F. Palmer, both of Bay Port, Michigan, U.S.A., 15th August, 1894; 6 years.

Claim.—In a lifting jack, the lever G having under its front end a series of fulcrum notches *g*, in combination with a lifting clutch connected with said lever by a pivoted loop, a post having the slot *a*, the cross-pivot H in said slot and guide eyes on the same side, a rod movable in said guide eyes and adapted to support the weight to be lifted, and a loose detent clutch for the top of the post, as shown and described.

No. 46,870. Indicator. (*Indicateur.*)

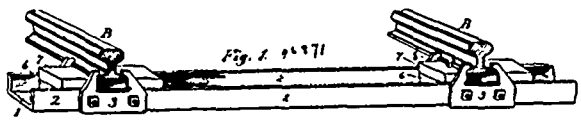


The Patent Telephone Indicator Company, assignee of Ignatius Rawleigh Burns and Walter Francis Burns, all of Chicago, Illinois, U.S.A., 15th August, 1894; 6 years.

Claim.—1st. A telephone indicator, comprising a casing having slots in its front wall and a hinged door, a series of flexible sheets having one end secured within the casing and the opposite free end projected through the slots in the front wall, means for retracting the curtains within the casing, and removable plates adapted to receive advertisements and to be secured upon the front wall of the casing and upon the door, substantially as described. 2nd. A telephone indicator, comprising in combination a casing having slits or openings in its front wall, a hinged door and a series of flexible sheets mounted upon spring rollers located within the casing and having their free ends projected through the slits in the front wall thereof, and plates adapted to receive advertisements, removably secured upon the front wall of the casing and on both sides of the door, substantially as described. 3rd. A telephone indicator, comprising a casing having its front wall provided with slits and a memorandum tablet secured thereon between the slits, flexible sheets having one end secured within the casing and the opposite end projecting through the slits, the top of the casing being recessed to provide a pencil receptacle and its bottom wall having a slit through which the free end of a curtain may depend and a hinged door adapted when closed to cover the front wall of the casing and thereby the ends of the sheets and memorandum tablet, substantially as described.

No. 46,871. Railroad Tie and Chair.

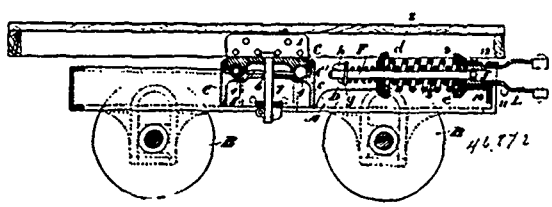
(*Traverse et coussinet de chemin de fer.*)



Phillip Wheeler, Branchport, and George H. Pierce, New York, both in the State of New York, U.S.A., 18th August, 1894; 6 years.

Claim.—1st. The combination with the tie, of the side plate 3, having projecting lips in its upper edge and the shim, as set forth. 2nd. The combination with the tie having upturned edges, of the shim 6, side plate 3, means for securing them together, said side plate having recesses and inwardly projecting lips, of the shim 7, having its lower face inclined, substantially as described for the purpose set forth. 3rd. The combination with a tie, and the side plates 3, having recesses *a* and *b* therein, inwardly projecting lips upon the upper face, means for securing said plates to the tie, and the shim interposed between it and the bottom of the rail, as described. 4th. The combination with the tie, side plates 3, means for securing them together, of the shim interposed between it and the bottom of the rail, and means for securing the shim securely under the rail, as set forth. 5th. The combination with the tie, the sides plates 3, means for securing the same together, said side plates having recesses and inwardly projecting lips, shims interposed between the rail and the bottom of the tie, and the tie, substantially as described.

No. 46,872. Car Coupler. (*Attelage de chars.*)



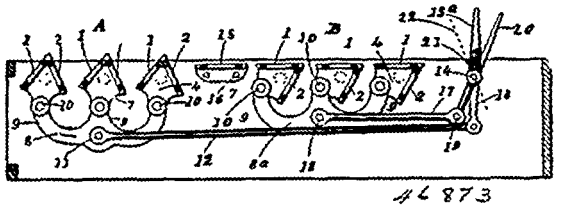
Otto Flohr and Fred C. Loh, both of Buffalo, New York, U.S.A., 18th August, 1894; 6 years.

Claim.—1st. The combination with a car truck, and fifth wheel, having a forwardly projecting yoke, of a draw-head, means for connecting the yoke and draw-head and means for holding said draw-head and yoke yieldingly apart, substantially as set forth. 2nd. The combination with a car frame and truck, of a fifth wheel comprising two sections, one secured to the car frame and the other to the truck, the truck section extending approximately from one side of the truck to the other and having a yoke projecting forwardly therefrom, substantially as set forth. 3rd. The combination with a car frame and truck, of a fifth wheel, comprising two sections, one secured to the car frame and the other secured to the truck, the truck section reaching approximately from one side of the truck frame to the other, and a means projecting outwardly from this section, to sustain the inward pressure upon the draw-head of a coupling, substantially as set forth. 4th. The combination with a car truck, of a casting extending from one side thereof to the other, and a yoke integral therewith and projecting forwardly therefrom, of a draw-head connected with the yoke and spring interposed between the yoke and draw-head, substantially as set forth. 5th. The combination with a car truck, of a casting reaching approximately across the truck, and secured thereto, said casting having a forwardly projecting yoke, a draw-head having a tail-bolt passing loosely through the yoke, a spring interposed between the yoke and draw-head, and a spring mounted on the rear end of the tail-bolt rearward of the outer end of the yoke, substantially as set forth. 6th. The combination with a car truck, a yoke secured thereon and provided with a concaved or dish-shaped outer end, of a draw-head provided with a dish-shaped inner end, a tail-bolt loosely connecting the yoke and draw-head and spring mounted on the bolt between the dish-shaped ends of the yoke and draw-head, substantially as set forth. 7th. The combination with a car truck, and a yoke or similar device secured thereon, of draw-head connected with the yoke, an angle iron secured at the other end of the truck and projecting inward for the abutment of the draw-head when pulled outward sufficiently and a projection on the draw-head adapted to strike opposite this angle iron plate when forced inward sufficiently, substantially as set forth. 8th. In a car coupling, the combination with a drawhead having a projection thereon, of a coupling jaw having an inclined slot within which said projection rests, and means for locking the jaw in its closed position. 9th. In a car coupling, the combination with a draw-head having a projection thereon, of a coupling jaw pivoted to the head and having an inclined slot in its hub adapted to receive the projection on the head, and means for locking the jaw in its closed position. 10th.

The combination with the draw-head and a coupling jaw, consisting of a coupling arm and a locking arm, the latter having a curved face and an inclined face, of a locking pin having a curved surface adapted to be engaged by the curved face of the locking arm as the latter is moved to its closed position, and with an inclined face adapted to rest in contact with the inclined face of the locking arm when the latter is in its closed position. 11th. The combination with a draw-head having a projection, and a coupling jaw having a slot, a curved face and an inclined face, of a coupling pin having a curved section adapted to be engaged by the curved section of the locking jaw, and an inclined section adapted to engage the inclined section of the locking jaw. 12th. The combination with a draw-head, having a spiral way on its floor, and a knuckle hinged to the draw-head, said knuckle having a tapering end, and a bevel portion formed at one side of the tapering end, of a sliding locking pin, having an inclining surface beneath which the tapering end of the knuckle engages in raising the pin and provided with a bevelled side adapted to engage the bevelled side of the knuckle, whereby the knuckle is locked, substantially as set forth. 13th. The combination with a draw-head, having a spiral way on its floor, and a knuckle hinged to the draw-head, said knuckle provided with a bevel face on its lower surface adapted to bear on the spiral way, and tapering at its outer end, of a sliding locking pin having an inclining portion adapted to be engaged by the tapering end of the knuckle, whereby the pin is raised, and the pin constructed to drop into the space between the knuckle and the wall of the draw-head when the knuckle is closed, substantially as set forth. 14th. The combination with a draw-head and a knuckle hinged thereto, said knuckle provided with a tapering outer end, of a locking pin provided with a bevelled portion adapted to be struck by the tapering outer end of the knuckle, whereby it is raised, the outer end of the knuckle also bevelled, and the locking pin constructed to form a wedge between this portion of the knuckle and the wall of the draw-head, substantially as set forth. 15th. The combination with a draw-head, having a spiral way on its floor, and a knuckle hinged to the draw-head, said knuckle provided with a bevel face on its lower surface adapted to bear on the spiral way and tapering at its outer end, of a sliding locking pin having an inclining portion adapted to be engaged by the tapering end of the knuckle, whereby the pin is raised, and the pin constructed to drop into and fill the space between the knuckle and the wall of the draw-head when the knuckle is closed, and a stop for preventing the knuckle from swinging open beyond a certain point, substantially as described.

No. 46,873. Alternating Dumping Grate.

(*Grille à bascule alternative.*)



46 873

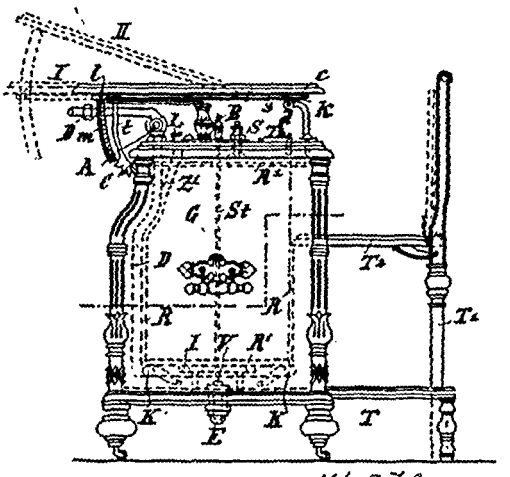
Eli L. Long and Alvin K. Long, both of Buffalo, New York, U.S. A., 18th August, 1894; 6 years.

Claim.—1st. A grate bar formed into a substantially inverted V-shaped trough, the ends of which are each provided with a trunnion, each face of the bar being provided with openings, and adapted to be turned into a horizontal plane, with an open side below it for the escape of ashes, and the entrance of air, said bar being also provided with an extension portion, diametrically opposite the apex of the bar, for operating it, substantially as set forth. 2nd. In a grate, the combination, with a series of inverted V-shaped trough bars pivotally secured at their ends, each bar having its edges the same distance from an axial line through the trunnions and each face and edge of the bar being provided with openings, said bar being further provided with an extension portion diametrically opposite the apex, a holding piece for said series of bars provided with a series of upward projections, one for each extension of the bar to which it is pivotally secured, and means for moving said holding piece longitudinally whereby the bars may be rocked on their trunnions so as to bring either face into a horizontal plane without the other face coming in contact with the holding piece, substantially as set forth.

No. 46,874. Foot Warmer. (*Chaufferette.*)

Robert Hermann Thielemann, Lichtenstein, in the Kingdom of Saxony, Germany, 20th August, 1894; 6 years.

Claim.—1st. In combination with a desk or table, double walls to surround the feet and legs of the occupant, and means for heating the space enclosed by said double walls, substantially as described. 2nd. The combination of a desk or table, consisting of an outer shell or substructure, an inner chamber within said exterior shell, a covering plate common to both shell and interior casing an adjustable slab mounted on and above said cover and means for heating the space enclosed between the said shell and interior casing, substantially as described. 3rd. The combination of a desk or table, consisting of an exterior shell and an interior chamber, a cover common

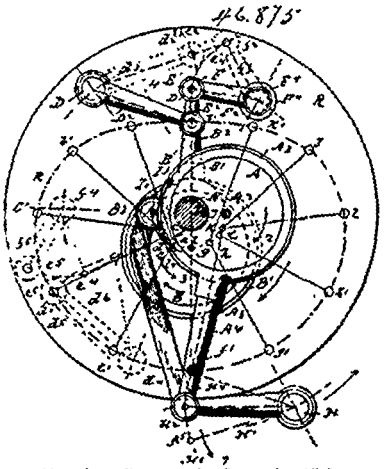


46 874

to both and adjustable slab mounted on said cover, a steam distributor between the shell bottom and inner casing bottom, steam supply pipe to said distributor, means for regulating the steam supply and a condensed water cock arranged in the bottom of the exterior shell, substantially as described. 4th. The combination of a desk or table, consisting of an exterior shell and an interior chamber, a cover common to both and adjustable slab mounted on said cover, a steam distributor between the shell bottom and inner casing bottom steam supply pipe to said distributor, means for regulating the steam supply and a condensed water cock arranged in the bottom of the exterior shell an extension of the base plate and chair arranged thereon, a folding seat to said chair, substantially as described. 5th. The combination of a desk or table, consisting of an outer shell or substructure, an inner chamber within said exterior shell, a covering plate common to both shell and interior casing, means for heating the space between said shell and interior casing, an adjustable slab, sliding rails hinged to said slab, fixed guide rolls to said rails, and means for arresting said rails in their forward or normal position, sector bars hinged to said slab, and guided in slots in the rail ends, and means for clamping said sectors in any position, substantially as described. 6th. The combination of a desk or table, having an exterior shell or substructure and an interior chamber cover common to both, and means to heat the space enclosed between the said shell and chamber, an adjustable slab mounted on sliding rails on said cover, means to guide said rails, and arresting mechanism for said rails consisting of a stationary spring, mounted parallel to said rail, a stud or pin on the free end of said spring, a slot or notch in said rail web into which said spring pin may engage, a spring retained wedge shaped block guided on said web and adapted to push back said spring from the said rail, and means for actuating said block, substantially as described and shown.

No. 46,875. Mechanical Movement.

(*Transmission du mouvement.*)



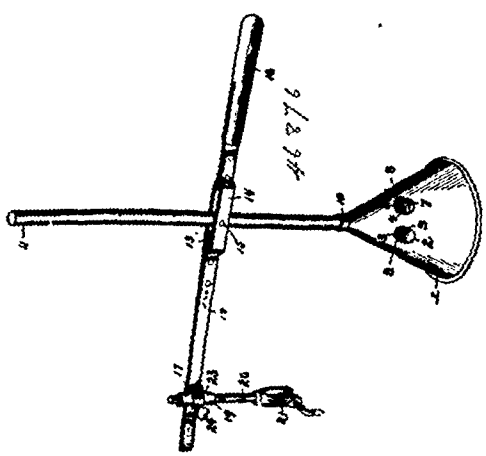
46 875

Samuel Glenville Brosius, Savannah, Georgia, U.S.A., 20th August, 1894; 6 years.

Claim.—1st. In a mechanical movement, a support, a driving ec-

centric, means for driving said eccentric, a working eccentric loose on the shaft of the driving eccentric, and connections between said eccentrics, whereby said driving eccentric controls through said connections the operation of the working eccentric to produce a variable motion. 2nd. In a mechanical movement, a support, a driving eccentric, a working eccentric having its centre of rotation coincident with the centre line of the shaft of the driving eccentric, and connections between the said eccentrics. 3rd. In a mechanical movement, a rotary disc, a driving shaft, a driving eccentric operated by said shaft, a working eccentric, and a toggle-joint controlled by the working eccentric, and a connecting rod for controlling the working eccentric, the latter being operated by the driving eccentric, whereby a variable motion is obtained. 4th. In a mechanical movement, a rotary disc, a driving shaft, a driving eccentric operated by said shaft, a working eccentric, a toggle-joint consisting of two levers and a connecting rod, said toggle-joint being controlled by the working eccentric, and a connecting rod operated by the driving eccentric and controlling the working eccentric. 5th. In a mechanical movement, a rotary disc, a driving eccentric, means for operating said eccentric, a working eccentric, connections between said eccentrics, and a toggle-joint controlled by working eccentric, said driving eccentric controlling through said connections the operation of the working eccentric to produce a variable motion. 6th. In a mechanical movement, a support, a shaft, a driving eccentric mounted thereon, a working eccentric loosely mounted on said shaft and oscillating thereon, and connections between said eccentrics. 7th. In a mechanical movement, a rotary disc, a shaft, a driving eccentric mounted thereon, a working eccentric mounted on said shaft and oscillating thereon, connections between said eccentrics, and a toggle-joint controlled by said working eccentric. 8th. In a mechanical movement, a support, a shaft, a working eccentric loosely mounted on said shaft and oscillating thereon, and means for oscillating said eccentric. 9th. In a mechanical movement, the combination of a driving eccentric, an oscillating eccentric having its centre of oscillation coincident with the centre line of the shaft of the driving eccentric, and a connecting rod for controlling the oscillating eccentric through the driving eccentric. 10th. In a mechanical movement, the combination of a driving eccentric and oscillating working eccentric upon the same shaft, and connections whereby the driving eccentric operates the working eccentric.

No. 46,876. Washing Machine. (*Machine à laver.*)



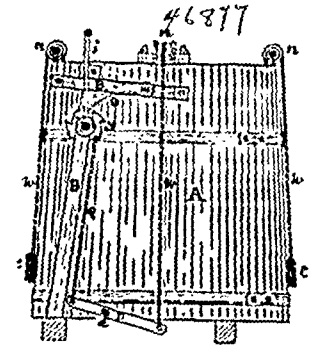
Edward C. Brewer, North Yakima, Washington, U.S.A., 20th August, 1894; 6 years.

Claim.—1st. The combination of a clothes pounder having a rod, an operating lever pivotally connected to the rod, a vertical stem provided at its lower end with jaws adapted to receive the upper edge of a boiler, tub or the like, and a block swivelled to the stem and vertically adjustable thereon, and provided with an opening adjustably receiving the operating lever and permitting a sliding movement of the same, substantially as described. 2nd. The combination of a vertical supporting stem provided at the lower end with a clamp, a sleeve mounted on the stem and capable of vertical adjustment and provided with an opening, a collar arranged in the opening and provided with a clamping screw for securing the sleeve in its adjustment, a block swivelled to the sleeve and provided with an opening, an operating lever slidingly mounted in the opening, and a clothes pounder having a rod pivoted to the operating lever, substantially as described.

No. 46,877. Machine for Cooling Carriage Wheel Tires. (*Machine pour refroidir les bandages des roues de voitures.*)

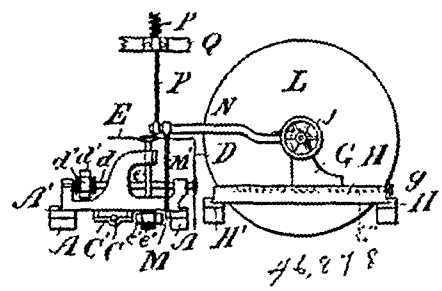
Aron Hassard, Farewell, Ontario, Canada, 20th August, 1894; 6 years.

Claim.—1st. The combination of the following elements to wit:—bed plate frame *g*, plate *x*, eye bolts *f*, cables *w*, balance weights C, and roller *n*, substantially as and for the purpose hereinbefore set



forth. 2nd. The combination of braces B, tank A, ratchet pinion S, crank *c*, ratchet dog *o*, bottom shaft *e*, arms D, cables *p* and *w*, substantially as and for the purpose hereinbefore set forth.

No. 46,878. Saw-Mill. (*Scierie.*)

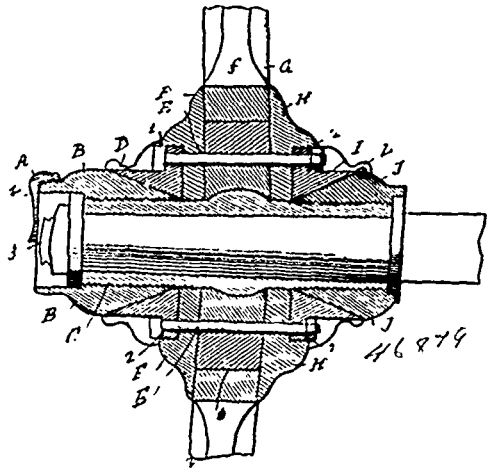


Alexander McKay, Vancouver, British Columbia, Canada, 20th August, 1894; 6 years.

Claim.—1st. In a saw-mill, the combination of a pair of head stocks G set a distance apart, a transverse slide bed H for each head stock, a screw G^1, with hand wheel g^1, on said bed passing through a nut on said head stock, a longitudinal slide bed H^1, carrying the transverse bed H, a spindle I, with chuck I^1 in each head stock, and a screw J, with hand wheel *j* moving said spindle longitudinally, substantially as set forth. 2nd. In a saw mill, the combination of a vertical and a horizontal saw arbor journalled on a sliding carriage and carrying circular saws, yokes carrying guide pulleys on said arbours, a driving shaft carrying pulleys, driving belts running over said pulleys and the guide pulleys and arbour pulleys and over guide pulleys at the end of the course, substantially as set forth. 3rd. In a saw-mill, the combination of a carriage bed, a carriage adapted to slide on said bed and carrying circular saws set at a right angle, means of propelling said carriage forward and backward, a bar or treadle adapted to be pressed down by the carriage and having its inner end pivoted at the side and near the end of the carriage bed and the outer end coupled to a transverse lever drawn upwards, a transverse lever having one end coupled to said treadle and drawn upwards and the other journalled upon the spindle of a head stock and provided with pawls, a ratchet wheel adapted to turn said spindle and to be engaged by the pawls on said lever, means of drawing the other end of the lever upward, and a head stock carrying a chuck spindle, substantially as set forth. 4th. In a saw-mill, the combination of a carriage bed, a carriage adapted to slide on said bed and carrying a horizontal and a vertical saw arbour with saws set to cut to the apex of a right angle, a screw extending the length of the carriage bed journalled at each end thereof and provided at each end with fast and loose pulleys and passing through a nut secured to said carriage, a rod held slidingly on said bed carrying stops adapted to come in contact with the carriage and carrying a belt fork at each end, a pair of head stocks with spindles carrying chucks adapted to centre and hold a log by the side of the carriage bed as high as the horizontal saw and made movable transversely and longitudinally on slide beds, substantially as set forth. 5th. In a saw-mill, the combination of a carriage bed, a carriage adapted to slide on said bed and carrying a horizontal and a vertical saw arbour set to cut to the apex of a right angle, means for moving said carriage forward and backward, a rod held slidingly on said bed and provided with adjustable stops coming in contact with the carriage and carrying belt forks controlling the carriage motion, and head stocks with spindles and chucks at the same height as the horizontal saw adapted to centre and hold a log at one side of the carriage bed made movable transversely and longitudinally, substantially as set forth. 6th. In a saw-mill, the combination of head stocks movable transversely and longitudinally on slide beds and each provided with a spindle carrying a chuck adapted to centre and hold the end of a log, and means for moving said head stock mechanically, sub-

stantially as set forth, 7th. In a saw-mill, the combination of head stocks movable transversely and longitudinally on slide beds and each provided with spindles carrying chucks adapted to centre and hold a log, and means of raising a log into position mechanically, substantially as set forth.

No. 46,879. Vehicle Wheel. (*Roue de voiture.*)



Russell A. Shay, New York, State of New York, U.S.A., 20th August, 1894; 6 years.

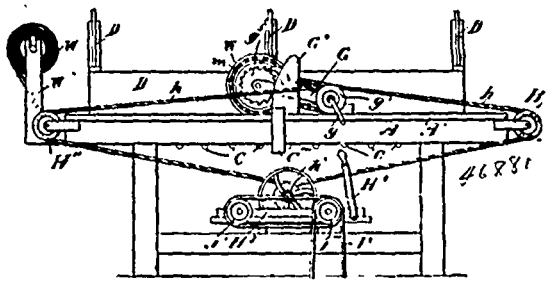
Claim.—1st. In a hub for vehicle wheels, the combination with a tubular axle, and spokes attached to the said axle, of a pair of oppositely disposed wedge-shaped bands located on each side of the plane of the spokes, the outer bands adapted to have a screw threaded connection with the ends of the axle box, whereby the part can be lightened and adjusted, substantially as in the manner set forth. 2nd. In a hub for vehicle wheels, the combination with a hub axle box, spoke bands loosely mounted on the axle box, and spokes clamped between the said spoke band, of a pair of oppositely disposed wedge-shaped bands placed on each side of the plane of the spokes, the outer bands having a screw-threaded connection with the ends of the said axle box, substantially as described and for the purpose set forth. 3rd. The combination in a hub for vehicle wheels, of a hub axle box having radial projections, spoke band loosely mounted on the axle box, spokes clamped between the said spoke bands and having seats in their inner ends to receive the said radial projections, and end clamping bands having screwed connection with said axle box, substantially as set forth. 4th. In a hub for vehicle wheels, the combination of an axle box having radial projections, spoke bands loosely mounted on the said box and having wedge-shaped projections spokes held between the said bands and having seats in their inner ends to receive the radial projections, and notches in their sides to receive the said wedge-shaped projections, and end clamping band having a screw-threaded connection with the axle box, substantially as set forth. 5th. In a hub for vehicle wheels, the combination of an axle box and having recesses in their outer faces, spokes placed between the said spoke bands, a pair of oppositely disposed wedge-shaped bands on each side of the plane of the spoke, the end bands having a screw-threaded connection with the ends of the axle box, the inner hub bands fitting in the recesses in the spoke bands, and bolts passing through coincident openings in the spokes, spoke bands and hub bands, substantially as and in the manner set forth. 6th. The herein shown and described hub for vehicle wheels, comprising the following elements: a tubular axle box having radial projections midway of its ends, spoke bands loosely mounted on the axle box and having wedge-shaped projections, spokes placed between the spoke bands and fitted between the said wedge-shaped projections, and having seats at their inner ends to receive the said radial projections, wedge-shaped hub bands arranged one on each side of the plane of the spokes and having notches or depressions to form seats for the bolt hubs and notches, and wedge-shaped bands adapted to screw upon the threaded ends of the axle box, the outer band having a projection to receive a cap by means of which the axle nut is closed in and a binding screwed to prevent relative turning of the inner end wedge band, and bolts passing through coincident openings in the spokes, spoke and hub bands, substantially as shown and set forth.

No. 46,880. Match Splint Coiling Machine.

(*Machine pour mettre en bottes les allumettes.*)

Joseph H. Mantion, Hull, Quebec, Canada, 20th August, 1894; 6 years.

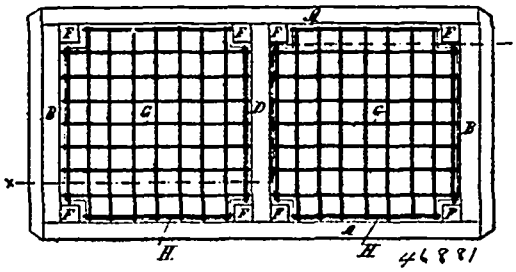
Claim.—1st. A match splint coiling machine, composed of a suitable frame or table supporting the operating mechanism, a transversely grooved plate bedded therein in a channel adapted to allow a longitudinal motion, means to impart a longitudinal vibrating motion to said plate, a hopper extending longitudinally over and transversely partly across said plate, and held over and close to the top of the same by brackets secured to the table, a pusher comb having the ends of its fingers in the rear ends of the



grooves in the said plate and adapted to travel therein beyond the front of the hopper intermittently, a flat tape or webbing laid along said table in front of the said plate and level with the bottom of the grooves therein, a carriage held slidingly on said table parallel to said plate and tape, a shaft or spindle journalled on said carriage and receiving motion, a shaft or spindle journalled on the free end of an arm pivoted to said last mentioned shaft or spindle and having a motion communicated to it by the same, a drum keyed to said last mentioned shaft or spindle adapted to engage and coil up said tape, and a ratchet wheel and pawl on said shaft preventing it from rotating it in the opposite direction, substantially as set forth. 2nd. In a match splint coiling machine, the combination of a table A, A^1, adapted to support suitable mechanism, a transversely grooved plate B, bedded on said table to slide therein longitudinally a spring C^1, drawing said plate against a stop at one end, a series of levers C, pivoted to lugs *c*, on said plate and fulcrumed to lugs on the table top, a hinged arm C^{11}, on a movable carriage adapted to come in contact with said levers and move them when passing in one direction and a stationary hopper D, and brackets D^1, the latter holding the former rigidly above and close to the top of said plate, substantially as set forth. 3rd. In a match splint coiling machine, the combination of a table A, A^1, adapted to support suitable mechanism, a transversely grooved plate B, bedded on said table to slide thereon longitudinally, means of giving a longitudinal vibratory motion to said plate, a hopper D, and brackets D^1, the latter holding the former over said plate and close to the surface thereof without resting thereon, fingers *f*, flexibly secured to a bar F, at one end and having their free ends in the rear end of the grooves, a shaft E^1, provided with hand-crank e^1, journalled parallel to the said plate, eccentrics E, mounted on said shaft and straps *e*, on said eccentrics pivoted to the comb-bar F, and adapted to operate said fingers in said grooves, substantially as set forth. 4th. In a match splint coiling machine, the combination of a table A, A^1, *a*, adapted to support suitable mechanism, a transversely grooved plate B, bedded on said table to have a longitudinal sliding motion, means of imparting a longitudinal vibrating motion to said plate, a hopper D, held above and close to the upper surface of said plate by brackets D^1, secured to said table, finger *f*, secured flexibly to a bar F, having their ends in the grooves of said plate, means of moving said fingers in said grooves at pleasure, and a tape or webbing W, laid before the front edge of said plate level with the bottom of the grooves in said plate, substantially as set forth. 5th. In a match splint coiling machine, the combination of a frame A, adapted to support suitable operating mechanism, a shaft H^1, journalled thereon, a rope drum H, and a friction pulley h^1, mounted on said shaft, a frame H^{111}, adapted to slide in a direction at a right angle to the shaft H^1, and to carry shafts, a lever H^2, adapted to hold or move said frame, two shafts *i* and *j*, journalled on said frame parallel to the shaft H^1, and one on each side thereof, friction pulleys I and J, mounted on said shafts and adapted to engage the pulley h^1, belt pulley I^1 and J^1, mouted on said shafts and connected by a belt, and a driving pulley on one of the said two shafts, substantially as set forth. 6th. In a match splint coiling machine, the combination of a table A^1, a transversely grooved plate having a longitudinal vibrating motion thereon, tape or webbing laid in front of said plate and parallel to it so that its upper surface is not above the bottom of the grooves in said plate, means of holding one end of said tape at one end of the table on an axle or roller, and means of drawing off a length thereof and then rolling it up, substantially as set forth. 7th. In a match splint coiling machine, the combination of a table A, A^1, a slide bed a^1, for a carriage travelling longitudinally, a transversely grooved plate B, parallel to said bed, a carriage G, adapted to travel in said bed, a shaft G^1, journalled on said carriage, a cord pulley g^1, mounted upon said shaft, a sprocket wheel g^{11}, mounted upon said shaft, an arm G^{11}, journalled upon said shaft, a shaft G^{111}, journalled at the free end of said arm, a ratchet wheel g^6, mounted upon said shaft, a pawl g^6, pivoted upon said arm and gearing into said ratchet wheel, a sprocket wheel g^{111}, mounted upon said shaft and connected by chain to the sprocket wheel g^{11}, and a drum G^5, secured upon said shaft by a key, substantially as set forth. 8th. In a match splint coiling machine, the combination of a table A, A^1, a slide bed a^1, in said table for a carriage travelling longitudinally, a carriage C,

adapted to travel in said bed, a shaft G^1, journalled on said carriage, a cord pulley g^1, mounted upon said shaft, a shaft H^1, journalled to said table below the top, a cord drum or pulley H, mounted upon said shaft, an endless cord h connecting said drum with the drum or pulley g^1, guide pulleys H^{11}, at the ends of said table, a friction-wheel h^1 mounted upon said shaft, a sliding frame H^{111}, surrounding said friction-wheel, two shafts I^1, and J^1, journalled upon said frame, friction-wheels I and J, and pulleys i and j mounted upon said shafts respectively, a belt connecting said pulleys, the pulley I^4, upon one of said shafts, and a lever H^4, controlling said frame, substantially as set forth. 9th. In a match splint coiling machine, the combination of a table A, A^1, a slide bed a^1 in said table for a carriage travelling longitudinally, a carriage G, adapted to travel in said bed, an arm C^{111}, secured to said carriage and projecting over and down the front edge, an arm C^{11} hinged to the said arm to swing horizontally to one side when the carriage is moving in one direction and remain stiff when moving in the other direction, substantially as set forth. 10th. In a match splint coiling machine, the combination of a table A, A^1, adapted to support suitable operating mechanism, a carriage G adapted to slide on said table and carrying a shaft adapted to receive motion when being drawn along the same and communicating said motion when moving in one direction to a drum on a shaft journalled on an arm pivoted to the shaft first above mentioned, a drum adapted to propel said carriage forward and backward at will by means of rope or cord passing over a pulley on the carriage, a friction-wheel on the shaft on which said drum is mounted, and a movable frame having friction-wheels adapted to engage the friction-wheel first above mentioned at opposite ends and mounted on parallel shafts with pulleys connected by belts, one of which receives motion in the usual way, substantially as set forth. 11th. In a match splint coiling machine, the combination of a table A, A^1, adapted to support suitable operating mechanism, a carriage adapted to slide on said table, and carrying a shaft adapted to receive motion when being drawn along the same in one direction, an arm having one end journalled upon said shaft, a shaft journalled upon the free end of said arm and carrying a drum secured thereto by a key, a ratchet-wheel mounted upon said shaft, a pawl pivoted to said arm and gearing into said ratchet-wheel, a tape laid upon said table and having one end secured upon said drum, an excentric e pivoted above said table, and adapted to bear upon said tape, and having an upwardly curved and slotted lever V, a lever V^1, pivoted at the end of said table and engaging said slotted lever, and a rod V^{11} linked to said lever and extending along said table, substantially as set forth.

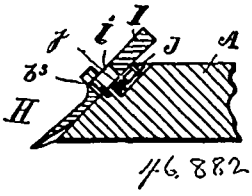
No. 46,881. Egg Case. (*Boîte à œufs.*)



Joseph D. E. Lafond, assignee of Henry M. Childes, both of Montreal, Quebec, Canada, 20th August, 1894; 6 years.

Claim.—1st. An egg carrier composed of a box having vertical posts in the corners and fillers composed of crossed strips forming the cells to contain the eggs, and having their corners open to embrace the corner posts of the box, the ends of the outside strips bearing against the posts, and the ends of the intermediate strips bearing against the sides of the box or case, substantially as described. 2nd. An egg carrier composed of a rectangular box having vertical posts in the corners, and fillers composed of crossed strips having their corners open to embrace the corner posts of the box. 3rd. An egg case divided into two compartments by a central vertical partition, filling strips set in the vertical corners of each compartment, a set of suitably separated rectangular trays in each compartment and each tray being partitioned into squares, a number of which are occupied or filled by the said filling strips, as set forth. 4th. An egg case or crate, such as described, containing removable rectangular trays G, separated by floors such as H, and partitioned into a number of completely formed squares or cells and incomplete or partially formed corner cells or spaces and permanent fillers for such incomplete corner cells of each tray, as set forth. 5th. An egg case or crate having a central vertical transverse partition D, dividing the interior into two divisions, both divisions containing five tiers or trays of cells formed of vertical walls interlocked at right angles to each other, and each tier or tray comprising complete four-sided cells and incomplete corner cells, floors H, intervening the tiers or trays of cells and having their corners cut away, and internal vertical corner pieces, or filler blocks F, extending through the several tiers or trays to permanently fill said incomplete corner cells, and the case provided with a suitable cover, as set forth.

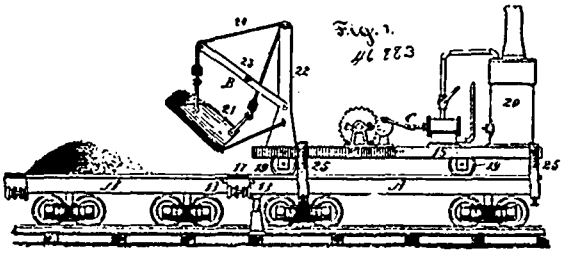
No. 46,882. Devices for Cutting Cards with Bevelled Edges for Photograph Mounts. (*Appareil pour découper des cartes en biais pour monter des photographies.*)



Bernard McHugh, Ottawa, Ontario, Canada, 21st August, 1894; 6 years.

Claim.—1st. A device for cutting cards with bevelled edges, consisting of a die of a truncated pyramidal shape, carrying slidingly on its sloping faces, spring retracted knives, and on the angles formed by the junction of the sloping faces, spring retracted knives sliding in dovetailed grooves, the upper edges of all the said knives projecting above the upper face of the said die, a block secured loosely to the said die and adapted to be held in a press, the sloping edges of the said block impinging on and pressing down the said knives, when pressure is applied, substantially as set forth. 2nd. In a device for cutting cards with bevelled edges, the combination of a die of a truncated pyramidal shape having chambers formed on its sloping sides to receive spiral springs of the spiral springs in said chambers, bosses sliding in the said chambers, knives carried slidingly on the said sloping sides, pins secured in the said knives and the said pins passing into apertures in the said bosses, substantially as set forth. 3rd. In a device for cutting cards with bevelled edges, the combination with the die A, carrying spring retracted knives on its sloping sides and on the angles made by the junction of the said sloping sides, of the block N, having guide pins M, adapted to enter apertures in the said die A, the head of the said pin sliding in the apertures n in the said block, the said aperture being smaller at its lower end, substantially as set forth. 4th. In a device for cutting cards with bevelled edges, a combination, with a die of a truncated pyramidal shape, carrying retracted knives on its sloping sides, of the corner knives H, sliding in dovetailed grooves D, the top of these knives having V-shaped grooves K, and means for retracting the said knives, substantially as set forth.

No. 46,883. Steam Shovel. (*Pelle à vapeur.*)

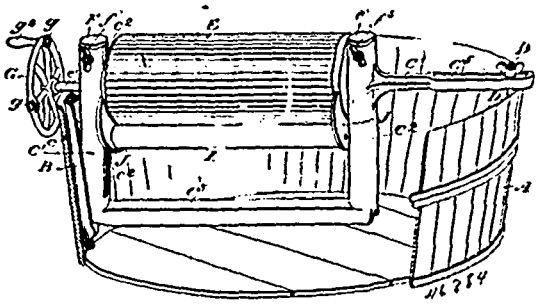


Jack Moses Boudrie and Thomas McManus, both of Rulo, Nebraska, U.S.A., 21st August, 1894; 6 years.

Claim.—1st. A flat car provided with channels in its upper face, and tracks or rails constituting one of the walls of the said channels, and chairs located at the ends of the car, one chair opposite each rail or track upon the car, the chairs at one end of the car being provided with a movable arm, as and for the purpose set forth. 2nd. A flat car for the purpose described, provided with a groove or channel in its upper face near each side, extending longitudinally thereof, and an angled track or rail located adjacent to each groove or channel, one member of each rail or track being located upon the upper face of the car bed, the other member forming a wall of the groove or channel, and chairs located at opposite ends of the car below the upper face of the bed, the chairs at one end being provided with rigid arms, and the chairs at opposite end with a rigid and a movable locking arm, the chairs being adapted to receive coupling rails, as and for the purpose set forth. 3rd. The combination with a flat car provided with channels in the upper face of its bed, one near each side edge, and tracks or rails adjacent to the channels, and chairs located at opposite ends of the car at the end of each track or rail, of a carriage the wheels of which are adapted to travel upon the rails or tracks of the car, said carriage being adapted to carry a loading apparatus, and clamps secured to the carriage and adapted for engagement with the car, as and for the purpose set forth. 4th. The combination, with a series of flat cars provided with rails upon their upper faces, and chairs at their ends opposite the ends of the rails or tracks, one set of chairs being provided with a movable member, and coupling rails located in opposing chairs of opposing cars, the tread of the coupling rails being substantially flush with the tread of the rails upon the upper face of the car, of a carriage the wheels of which are adapted to travel upon the rails of

the car and the coupling rails, the said carriage being adapted to carry a loading or derrick device, and clamps permanently connected with the carriage and adapted for removable engagement with the car, as and for the purpose specified.

No. 46,884. Washing Machine. (*Machine à laver.*)

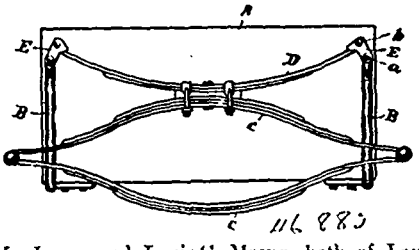


Johnson M. Grover, Winnipeg, Manitoba, and Lucien E. Auston, Toronto, Ontario, both in Canada, 21st August, 1894; 6 years.

Claim.—1st. The combination, with the main corrugated roller journalled in the cylindrical bearing blocks on spindles extending through the slots of the tubular standards, which are connected together at the bottom by a cross-bar, of the rubbing frame and food rollers having pins extending through the slots in the tubular standards and supported in position by spiral springs extending between the pins and the bottom of the standards, as and for the purpose specified. 2nd. The combination, with the roller E, journalled in the cylindrical bearing blocks F, F¹, on spindles extending through the slots c^2 and c^3, of the tubular standards C¹, C², cross-bars C³, lugs c and c^1, resting in the channel bracket B, and the arm C⁴, extending outwardly from the tubular standards C², and provided with a slot C⁵, and the bracket D, having reduced end *d*, and the thumb screw D¹, of the rubbing frame H, rollers J, journalled in crescent shaped end boards J, which have pins H¹, which extend through the slots c^2 and c^3, and are supported by the springs K, as and for the purpose specified. 3rd. The combination, with the roller E journalled as specified, and the rubbing frame and feed rollers supported as specified, of the lugs c and c^1, supported in the channel bracket B, and the slotted arms C⁴, forming part of the opposite side of the frame and held in position by the thumb-screw D¹, to the bracket D, as and for the purpose specified. 4th. The combination, with the roller E, journalled in the bearing blocks F and F¹, and the rubbing frame H, and feed rollers I, supported as specified, of the slots *f* and f^1, made in the bearing blocks F and F¹, and the screw-pins f^2 and f^3, extending through the hollow standard and slots and provided with thumb-nuts, as shown and for the purpose specified. 5th. The combination, with the roller E, journalled in the bearing blocks F and F¹, inserted in the tubular standards and the rubbing frame H, provided with feed rollers and supported as specified, of the ringing rollers L and M, the roller L, being journalled stationary and the roller M being supported by the spindle *m*, upon the rubber springs N, in the slots f^1 and f^3, as shown and for the purpose specified. 6th. The combination, with the rubbing frame H, and feeding rollers I, of the roller E, provided with a hand-wheel on the end of the spindle having holes or sockets *g*, for the reception of a movable handle g^2, as shown and for the purpose specified.

No. 46,885. Combined Spring and Shackle.

(*Ressort et manille combinés.*)



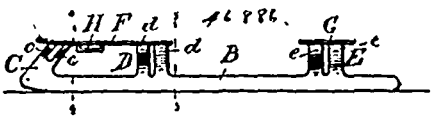
Howard K. James and Louis G. Mayer, both of Lawrenceburg, Indiana, U.S.A., 25th August, 1894; 6 years.

Claim.—1st. The combination of the body loops B, the springs C, D, shackle E, provided with a stop F, substantially as specified. 2nd. In combination with the springs D, the body loops B, provided with an eye G, and the shackle E, provided with the stop F, substantially as specified.

No. 46,886. Skate. (*Patin.*)

Thomas Harrison, and E. H. Whelpley, both of Darmouth, Nova Scotia, Canada, 25th August, 1894; 6 years.

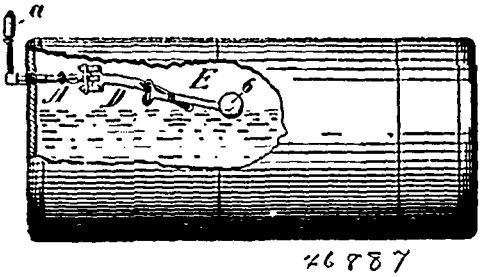
Claim.—1st. A skate consisting of a blade, a sole plate and a heel plate, the said blade being secured to the said sole and heel plates by arms which spring outwardly and upwardly from the said blade and have their upper ends secured in the said sole and heel plates at



the sides of the said plates, substantially as set forth. 2nd. In a skate, the combination with the blade B, the bench portions C, D, being split and each bent into two arms, of the sole plate F, in which the said arms are secured, the loop formed in the said sole plate, substantially as set forth. 3rd. In a skate, the combination with the heel plate G, of the bench portion E, of the blade B, the said bench portion being split into two arms, the said arms being secured to the said heel plate, one on either side, substantially as set forth.

No. 46,887. High or Low Water Alarm.

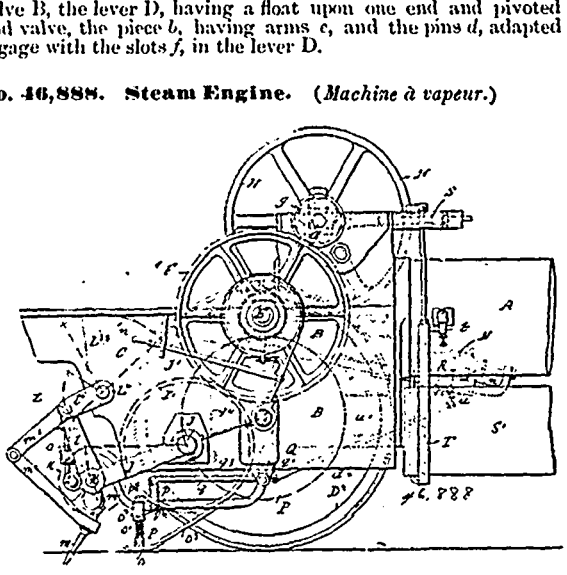
(*Indicateur à sifflet du niveau d'eau.*)



William Hodgson, Manticoke, Pennsylvania, U.S.A., 25th August, 1894; 6 years.

Claim.—1st. A high and low water alarm, comprising the combination with the boiler, a tube mounted therein, having an alarm signal upon its outer end, its inner end being provided with a valve, said valve having a bifurcated end C, the nut or piece *b* secured to said tube, and the lever D, provided with a float upon one end and secured, pivotally, to said piece *b*, and means for limiting the travel of the lateral arms of the lever D, upon the pieces *c*. 2nd. A high and low water alarm, comprising the combination with the boiler, of a tube mounted therein and having an alarm signal upon its outer end, and its inner end being provided with a valve, the lever D, and means for securing the float 6 adjustably thereto, the piece *b* secured to the tube, the lever D, pivoted to the outer end of the valve B, and means for limiting the travel of the lateral arms of the lever D, upon the arm c. 3rd. The combination with the tubes A, of the valve B, the lever D, having a float upon one end and pivoted to said valve, the piece *b*, having arms *c*, and the pins *d*, adapted to engage with the slots *f*, in the lever D.

No. 46,888. Steam Engine. (*Machine à vapeur.*)

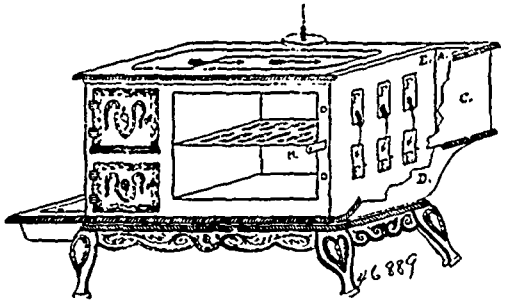


Thomas Cooper, Great Ryburgh, Norfolk, England, 25th August, 1894; 6 years.

Claim.—1st. In a digging apparatus for cultivating and tilling the soil, the combination of a locomotive engine with digging mechanism and means for automatically raising or lowering the same as required to maintain an even working depth during the travel of the engine over irregular or uneven surfaces, substantially as described. 2nd. In a locomotive agricultural digging apparatus,

having gear for raising and lowering the digging mechanism, the combination of a device for arresting automatically the movements of the raising and lowering gear, and a feeler following the surface of the ground whereby such movements are started. 3rd. The combination with the digging mechanism of an agricultural engine, of an hydraulic ram connected with the said digging mechanism, a vertical receiver open to the engine boiler and connected to the engine feed pump and to the valve box of the hydraulic ram, substantially as explained with reference to the drawings. 4th. In agricultural locomotive engines, the combination with the compensating driving gear, of means for locking one or other of the discs comprised therein for the purpose of facilitating the turning of the engine short round upon one wheel, substantially as described.

No. 46,889. Mode of Heating Reservoirs in Cooking Stoves and Ranges. (*Mode de chauffer les réservoirs dans les poêles de cuisine.*)

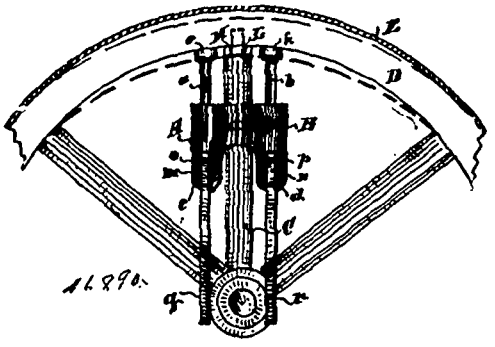


William Buck, assignee of Judson W. Buck, both of Brantford, Ontario, Canada, 25th August, 1894; 6 years.

Claim.—The combination or mode of using the slide or damper G, having the external handle H, and openings therein corresponding with the openings F, F, F, F¹, F¹, F¹, in the inner back plate E, of the stove or range, substantially as and for the purpose hereinbefore set forth.

No. 46,890. Tire Tightening Machine.

(*Machine pour assujétir les bandages.*)



Christopher H. Olson, Nicholas Clarke, Charles R. Lockhart and George L. Centre, all of Vancouver, British Columbia, Canada, 25th August, 1894; 6 years.

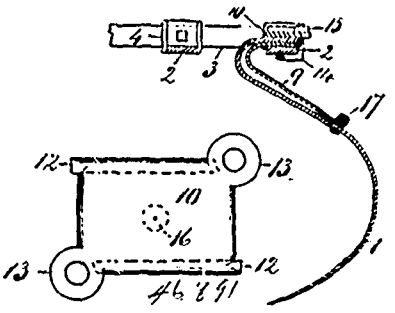
Claim.—1st. The combination in a tire tightening machine, clamps A and B, ears *c* and *d*, centered with jacks *a* and *b*, chairs *e* and *f*, eccentric levers *o* and *p*, substantially as and for the purposes set forth. 2nd. The combination with a tire tightening machine with jacks *a* and *b*, designed with inset *g* and *h*, to work in conjunction with pins *k* and *l*, substantially as set forth. 3rd. The combination in the tire tightening machines, clamps A and B, designed with convexed holes *h*, *i* and *j*, on the inner side and slot K, for hinging and fastening same, substantially as and for the purposes set forth.

No. 46,891. Sulky Spring Tooth Cultivator.

(*Cultivateur à siège à dents élastiques.*)

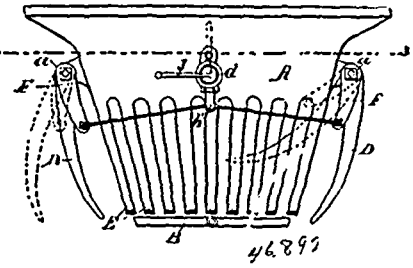
The J. W. Mann Manufacturing Company, assignee of James Alfred Publow, all of Brockville, Ontario, Canada, 25th August, 1894; 6 years.

Claim.—1st. The combination at the intersection of the side bars and tooth bars, of an intervening plate 4, having flanges 5, engaging the edges of said bars, and a through bolt 6, as set forth. 2nd. The combination, with the bull or tooth-bar 6, and spring tooth 1, of the auxiliary spring 9, approximately conforming to the tooth from the heel for a portion of its length, and clipped at one end against the underside of the tooth, rearwardly, and the other end secured fractionally to the tooth by a socket 17, and a clip 14, securing said spring and tooth to the tooth-bar, as set forth for the purpose described. 3rd. The combination, with a tooth bar and tooth, of the



auxiliary spring 9, approximately conforming to said tooth at the heel and located rearwardly thereof, the socket 17, sleeved on said tooth and receiving the end of the spring, the flanged plate 10, having flanges 11, and lugs 12, 13, and the clip 14, for adjustment of the teeth along the tooth-bar movably, as set forth. 4th. The combination, with the arm 20, clipped at one end to a rock shaft 22, of the adjustable link 25, connecting with the resilient end of a curved spring 24, and the other end of said spring secured to a harrow section, as set forth. 5th. The arm 20, having a bifurcated outer end and provided with wings 32, in combination with a chain 36, inserted through said bifurcation, and pin 31, retaining said chain, as set forth.

No. 46,892. Fire Pot for Stoves. (*Pot à feu.*)



Daniel Brazier and William H. Carson, both of Detroit, Michigan, U.S.A., 25th August, 1894; 6 years.

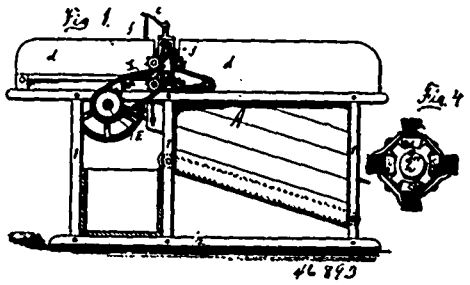
Claim.—1st. A fire-pot having an annular rim and upper body portion, and an annular lower body portion or base, the wall of said pot converging and all of the opposed angular portions thereof being provided with depending fingers. 2nd. The combination of the fire-pot having an opening therein, the stoking tine pivotally mounted, the mechanism for thrusting said tine into and withdrawing it from the pot through said opening, substantially as set forth. 3rd. The combination of the fire-pot having a series of openings therein, the series of pivoted tines registering with said openings, and mechanism for operating said tines to swing them into and out of the fire-pot through said openings. 4th. The combination of the fire-pot having a series of depending adjacent fingers, the series of tines mounted on a shaft and adapted to swing into and out of the fire-pot between said fingers, the arm on said shaft, the crank shaft, coupled to said arm, whereby the rotation of the crank shaft actuates said tines, substantially as specified. 5th. The combination of the fire-pot having openings on opposite sides thereof, the series of opposed tines mounted on rock shafts and arranged opposite said openings, the crank connected to said rock shafts whereby by the rotation of said crank, the rock shafts are simultaneously oscillated to alternately swing the opposed series of tines, into and out of the fire-pot, through said openings, substantially as specified

No. 46,893. Hop Picking Machine. (*Jaffet.*)

The Mills Hop Picking Machine Company, Syracuse, assignee of E. Deloss Mills, Clinton, and Lionel Emdin, Syracuse, all in New York, U.S.A., 25th August, 1894; 6 years.

Claim.—1st. In a hop picking machine, the combination with the brushes and means for rotating them, of a cut-off brought intermittently into engagement with feeding floor of the machine, as set forth. 2nd. In a hop picking machine, the combination with the brushes, horizontally mounted and means for rotating them, a cut-off yieldingly mounted and adapted to intermittently engage the feeding floor, as set forth. 3rd. In a hop picking machine, the combination with a series of brushes, vertically mounted, means for rotating them simultaneously and a sleeve adapted to engage with the feeding floor intermittently, as they pass through the machine, as set forth. 4th. In a hop picking machine, the combination with

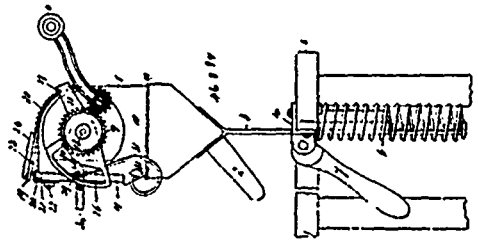
the series of brushes, each series adapted to engage with each other and mounted upon pinions of different diameters, for the purpose of varying the speed of the brushes and means for rotating them simul-



taneously, as set forth. 5th. In a hop picking machine, the combination with the frame and the front and rear portions, of a bracket mounted transversely thereon, brushes rotatably mounted therein having their peripheries in contact, means for rotating them simultaneously, a cam-wheel rigidly secured upon one end of said brushes, a concave-convex cut-off in cross section rotatably mounted in said bracket and having an arm adapted to engage with the cam-wheel for the purpose of raising and lowering the said sleeve when the brushes are rotated, as set forth. 6th. In a hop picking machine, the combination with a frame, of a bracket mounted transversely thereon, brushes secured thereon, having their periphery in contact and means for rotating them, a cam-wheel rigidly secured upon one end of said brushes, a concave-convex cut-off in cross section mounted in said bracket and having an arm secured to one end of its shaft adapted to engage with the cam-wheel, an arm secured at the top of said bracket and an elastic connection between it and the sleeve, as set forth. 7th. In a hop picking machine the combination with the frame and sieves reciprocatingly mounted therein, and means for shaking them intermittently, as set forth.

No. 46,894. Milking Machine.

(*Machine à traire les vaches.*)

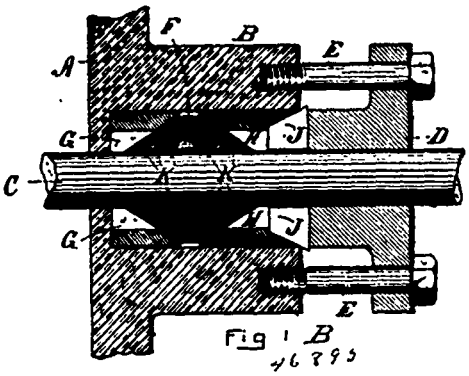


Elswood Smart, Brockville, Ontario, Canada, 25th August, 1894; 6 years.

Claim.—1st. In a milking machine, a hopper constructed of upper and lower sections, the upper section having an adjustable back provided with a yielding pad or cushion, and having a cam groove in the ends, a shaft journalled through the ends of said upper section and carrying slotted discs, and rolls journalled through said slots and bearing in said grooves, and the lower section of the hopper sustaining the upper section and provided with a discharge spout, as set forth. 2nd. The hopper section having an adjustable back seated between flanges on the end plates, and provided with lugs at the ends, in combination with a cam frame having a slot engaging said lugs, for movement of said back inwardly and outwardly, as set forth. 3rd. The hopper section having an adjustable back provided with a flexible cushion or pad, a shaft provided with slotted discs carrying rolls journalled to travel in an eccentric groove at the ends of said hopper section, a cam frame extending from end to end of said section for adjustment of id back, and springs reacting said back against the resistance of the rolls when rotated, as set forth. 4th. The hopper section having an adjustable back provided with a rubber cushion or pad clamped thereto, a shaft journalled through the ends of the hopper section, said ends having a cam groove, slotted discs keyed on said shaft, rolls journalled through said slots and into said cam grooves, a bottomless textile bag suspended in said hopper intermediately of said pad and rolls, a cam frame moving said hopper-back adjustably, an operating gear to rotate shaft by hand, and a lower hopper section adjustably attached to a stool, and supporting said upper section and operating, as and for the purpose set forth. 5th. The milking hopper constructed in two separable sections, the upper section having an adjustable back, a shaft mounted through the ends of said upper section and carrying slotted discs, rolls journalled through the slots in said discs, and into a cam groove in the ends of the hopper, a cam frame carried by the ends of said shaft and moving the back of the hopper adjustably, and a lower section supporting said upper section of the hopper and adjustably attached to a stool to move both sections vertically, as set forth. 6th. A milking machine having a hopper constructed of an upper section provided with an adjustable back and cushion and containing rolls having an eccentric movement around a rotary shaft, and a lower section supporting said upper section removably, and adjustably attached to a stool to move vertically, as set forth for the purpose described.

No. 46,895. Metallic Piston Rod Packing.

(*Garniture métallique de tige de piston.*)

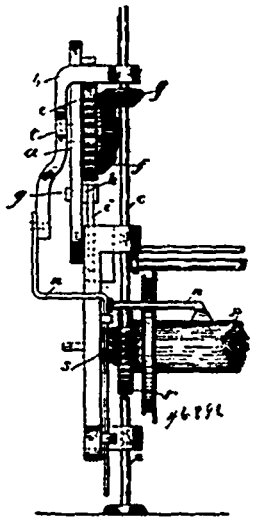


Charles F. Churchhill, Melrose, Massachusetts, U.S.A., 27th August, 1894; 6 years.

Claim.—The described rod packing for stuffing boxes, consisting of the inner segmental sleeve F, separated by radial planes *f*, and tapering from its middle portion toward each end, and the radial keys K, crossing said planes and closing the joints between adjacent segments, in combination with compressing rings G, H, internally tapered to conform to said sleeve, each made in two engaging parts so as to be applied around the piston rod laterally and connected for use, and with the tapered two part ring J, interposed in the mouth of the stuffing box between the gland D and the ring H, substantially as set forth.

No. 46,896. Let Off Mechanism for Looms.

(*Mécanisme de relâche pour métiers à tisser.*)

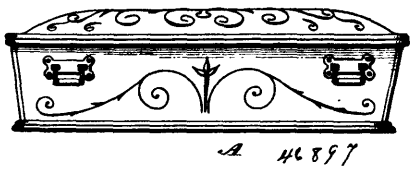


John H. Mayer, Waterloo, Ontario, Canada, 27th August, 1894; 6 years.

Claim.—1st. In combination in a let off mechanism, the beam, the worm shaft for driving the same, the mechanism for turning the worm shaft including a pawl lever and ratchet, said mechanism being arranged to slide along the worm shaft, the whip roll, the connections from said whip roll to the pawl lever, said connections having a shifting connection with said pawl lever, and the support for said sliding operating mechanism, said support arranged to press on the ways of the warp beam to be controlled as the same unwinds, substantially as described. 2nd. In combination, the warp beam, the shaft connected therewith for operating the same, the sliding pinion on said shaft, the pawl and ratchet for operating said pinion also arranged to slide, the pawl lever for operating the pawls, the whip roll, the connection therefrom to the pawl lever, said connections having a shifting joint connection with the pawl lever, and the support for controlling the position of the shifting parts, said sup-

port bearing on the warp beam, substantially as described. 3rd. In combination, the warp beam, the roll, the shaft connected with the warp beam, the operating mechanism for said shaft arranged to slide thereon, the support therefor, bearing on the warp beam, the whip roll and the connection therefrom to the operating mechanism, having a sliding connection therewith whereby the feed stroke of said mechanism will be varied as the warp unwinds, substantially as described.

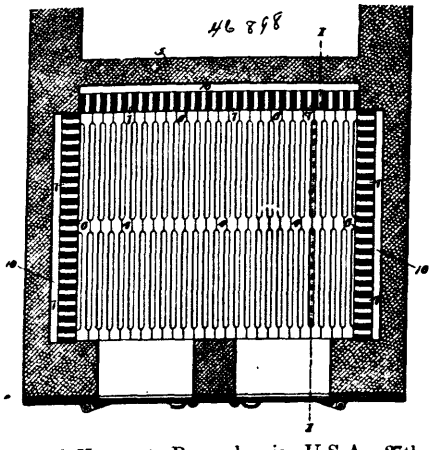
No. 46,897. Burial Casket. (*Cercueil.*)



George E. Shaw, Cincinnati, Ohio, U.S.A., 27th August, 1894; 6 years.

Claim.—1st. A burial casket composed of fibrous pulp-material, produced by pressure applied to all outer surfaces, and heat applied to both inner and outer surfaces, both heat and pressure being applied simultaneously until the casket is completed, and having thereby a uniformly compacted and extremely dense structure, substantially as set forth. 2nd. A burial casket produced from fibrous pulp-material by simultaneous external pressure compacting the fibres in the positions naturally assumed, without displacement, and thereby having the fibres uniformly interlocked and compacted without strain or rupture at any point in the structure, as herein set forth. 3rd. A burial casket produced by compression from fibrous pulp-material, having a leguminous substance disseminated throughout the mass, and, by moisture and heat, caused to permeate the interstices of the finished product and become adhesive by drying, as set forth. 4th. A burial casket or similar article produced from fibrous pulp-material having its corner angles or weak places or points of greatest strain strengthened by additional material forced into it during compression and the fibres of such additional material interlocked and compacted with those of the shell by pressure, substantially as set forth. 5th. A burial casket or similar article produced from fibrous pulp-material, rendered dense and practically non-porous by compacting pressure and by heat applied during pressure to both sides of the layer under compression, as set forth. 6th. A burial casket or box-shaped article produced by compression from fibrous pulp material, having the junctions of sides, ends, and bottom strengthened by additional material forced into the mass during compression, and constituting the outer angles of such junction, substantially as set forth.

No. 46,898. Furnace. (*Fournaise.*)

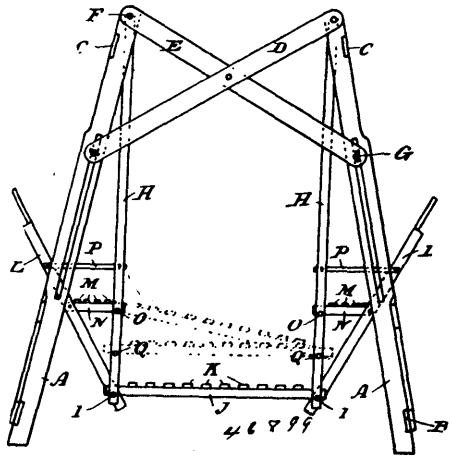


Richard Bow, McKeesport, Pennsylvania, U.S.A., 27th August, 1894; 6 years.

Claim.—1st. A furnace having above the grate-bars an air chamber formed in the furnace wall, and a perforated removable plate interposed between the air chamber and the combustion chamber and adapted to permit passage of air into the bed of fuel in the latter, said plate being supported above the base of said air chamber to afford an air passage leading transversely from beneath the grate-bars into said chamber back of the plate, substantially as described. 2nd. A furnace having above the grate-bars an air chamber formed in the furnace wall, a perforated reversible plate interposed between the air chamber and the combustion chamber, and adapted to permit passage of air into the bed of fuel in the latter, and supporting plate 8, having lugs which uphold said plate above the base of the air chamber, substantially as described.

No. 46,899. Combined Swinging Chair and Hammock.

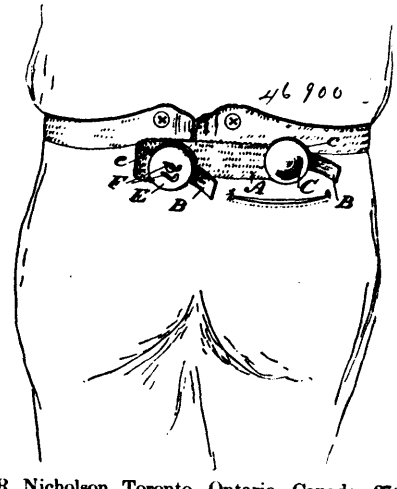
(*Chaise oscillante et hamac combinés.*)



Samuel R. Gilmore, St. Stephen, New Brunswick, Canada, 27th August, 1894; 6 years.

Claim.—1st. The arrangement and combination of the frame having the inwardly inclined and slotted legs A, transverse girts B and C, and the diagonal braces D and E, with the swinging pendants H, supporting a hammock or chairs, substantially as set forth and described. 2nd. The combination of a frame having the inwardly inclined and braced legs A, and the swinging pendants H, with a slotted removable floor supported by the rods I, O, or Q, substantially as and for the purposes set forth. 3rd. The combination of a frame having the inclined and slotted legs A, supporting a swinging hammock by the pendants H, with removable chairs having folding up seats, and attached to said pendants, substantially as and for the purpose described and set forth.

No. 46,900. Catch Band. (*Griffe de bande.*)



Frederick R. Nicholson, Toronto, Ontario, Canada, 27th August, 1894; 6 years.

Claim.—1st. A catch band for the waist or ankles of trousers and similar articles, consisting of the main portion of the band and end tapes, and discs provided with catch hooks interposed between the main portion and the tapes, as and for the purpose specified. 2nd. The combination with the main portion A, tapes B, and the catch comprised of the outer discs E, with inwardly extending lips *c*, the discs D, D, the outer disc E, provided with the outwardly extending lip *e*, extending within the lips *c*, of the disc C, and grasped by such lips, the catch hooks F, passed through the discs E, and the rivet G, all arranged and secured together, as and for the purpose specified.

No. 46,901. Violin and Other Musical Instruments.

(*Violon au autres instruments de musique.*)

Bruno Emil Wollenhaupt, New York, State of New York, U.S.A., 27th August, 1894; 6 years.

Claim.—1st. A musical instrument of the class described, provided

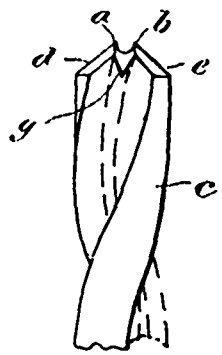
with an auxiliary vibrating device arranged within the body of the instrument, and adapted to sound sympathetically and in unison with the string or strings played, to prolong and reinforce the sound,

: 46,601

substantially as shown and described. 2nd. A musical instrument of the class described, provided with an auxiliary vibrating device forming a permanent fixture of and within the body of the instrument, the said device being arranged to sound sympathetically and in unison with the string or strings played, to prolong and reinforce the sound, substantially as shown and described. 3rd. A musical instrument of the class described, provided with an auxiliary vibrating device arranged within the body of the instrument, and adapted to sound sympathetically and in unison with the string or strings played, to prolong and reinforce the sound, and a dampening device under the control of the player and adapted to immediately dampen the auxiliary and reinforcing sounds of the said vibrating device without affecting the regular sounds of the instrument, substantially as shown and described. 4th. A musical instrument of the class described, provided with an auxiliary vibrating device, comprising auxiliary strings arranged longitudinally in the body of the instrument, and secured at one end to pins and at the other end to wrest pins adapted to be turned from the outside of the body of the instrument, substantially as shown and described. 5th. A musical instrument of the class described, provided with an auxiliary vibrating device, comprising auxiliary strings arranged longitudinally in the body of the instrument, and secured at one end to pins and at the other end to wrest pins adapted to be turned from the outside of the body of the instrument, and a damper adapted to be moved in contact with the said auxiliary strings, to dampen the latter, substantially as shown and described. 6th. A musical instrument of the class described, provided with an auxiliary vibrating device, comprising auxiliary strings arranged longitudinally in the body of the instrument, and secured at one end to pins and at the other end to wrest pins adapted to be turned from the outside of the body of the instrument, a damper adapted to be moved in contact with the said auxiliary strings, to dampen the latter, and a lever adapted to be pressed by the chain of the player, and connected with the said damper, to move the latter in contact with the said strings, substantially as shown and described. 7th. A musical instrument, provided with a dampening lever held on the tail-piece of the instrument and adapted to be pressed by the chin of the operator, substantially as shown and described. 8th. A musical instrument provided in its body with a fixed comb having its prongs tuned to sound sympathetically with the tunes played on the usual strings, to reinforce and prolong the tone, substantially as shown and described.

ERRATUM.

At page 534 of July Number a wrong drawing was inserted by error. The correct illustration for Patent 46,606 is the following:—



46606

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

3566. JOHN W. PATTERSON AND NOBLE L. PATTERSON, 2nd five years of No. 31,942, from the 3rd day of August, 1894. Improvements in Composite fabrics, 3rd August, 1894.

3567. JOHN W. PATTERSON AND NOBLE L. PATTERSON, 2nd five years of No. 31,971, from the 3rd day of August, 1894. Improvements in Process for Strengthening Paper, 3rd August, 1894.

3568. CHARLES W. STRATTON, 2nd five years of No. 31,948, from the 3rd day of August, 1894. Improvements in Jump Seat Vehicles, 3rd August, 1894.

3569. THE ANDERSON TRADING CO., (assignees), 2nd five years of No. 31,976, from the 3rd day of August, 1894. Improvements in Cash Registers, 3rd August, 1894.

3570. FREDERICK H. SNYDER, 2nd five years of No. 31,979, from the 3rd day of August, 1894. Improvements in and relating to explosives and other Projectiles or Shells, 3rd August, 1994.

3571. THOMAS P. CURRY, 2nd five years of No. 32,004, from the 5th day August, 1894. Improvements in Railway Signals, 3rd August, 1894.

3572. FERDINAND W. STARR, 2nd five years of No. 34,813, from the 2nd day of August, 1895. Improvements in Multiple Pointed Corrugated Fasteners. 6th August, 1894.

3573. ROBERT TORRANCE, 3rd five years of No. 19,963, from the 9th day of August, 1894. Improvements in the Method and Process of Welding Steel and Iron, 6th August, 1894.

3574. JOHN L. EASLEY, 2nd five years of No. 32,043. from the 8th day of August, 1894. Improved Lemon Juice Extractor, 6th August, 1894.

3575. THE WORTMAN AND WARD MANUFACTURING CO., (assignee), 2nd five years of No. 32,073, from the 12th day of August, 1894. Improvements on Barrel Churns, 7th August, 1894.

3576. THOMAS J. REID, 2nd five years of No. 32,060, from the 10th day of August, 1894. Improvements in Vehicle Hubs, 7th August, 1894.

3577. HIRAM H. FOWLER, 2nd five years of No. 32,059, from the 10th day of August, 1894. Improvements on Swings, 9th August, 1894.

3578. ROBERT PORTER, 3rd five years of No. 19,992, from the 15th day of August, 1894. Improvements in Horse Collars, 9th August, 1894.

3579. JEAN MALO, 2nd five years of No. 32,191, from the 10th day of September, 1894. Swimming Machine, 9th August, 1894.

3580. THE UNIVERSAL LASTING MACHINE CO. (assignees), 2nd five years of No. 32,055, from the 10th day of August, 1894. Improvements in the Art of Lasting Boots and Shoes, 9th August, 1894.

3581. THE UNIVERSAL LASTING MACHINE CO. (assignees), 2nd five years of No. 32,056, from the 10th day of August, 1894. Improvements in machines for Lasting Boots and Shoes, 9th August, 1894.

3582. WILLIAM GOWEN, 3rd five years of No. 19,994, from the 15th day of August, 1894. Improvements in Saw-mill Dogs, 11th August, 1894.

3583. ALFRED G. CAMPBELL, 2nd five years of No. 32,081, from the 14th day of August, 1894. Improvements in Railway Frog Guards, 13th August, 1894.

3584. THOMAS LOUDON, 2nd five years of No. 32,121, from the 20th day of August, 1894. Improvements in Folding Reclining Chairs, 13th August, 1894.

3585. FREDERICK H. SNYDER, 3rd five years of No. 31,979, from the 3rd day of August, 1899. Improvements in and relating to Explosives and other Projectiles or Shells, 13th August, 1894.

3586. JOHN J. CALLOW, 3rd five years of No. 20,003, from the 16th day of August, 1894. Improvements in the use and manufacture of Stencil Plates for Graining and Imitating Woods, Marbles, &c., 16th August, 1894.

3587. LEVI J. WING, 3rd five years of No. 20,353, from the 10th day of October, 1894. Improvements in Ventilating Apparatus, 16th August, 1894.

3588. WILLIAM LOCKWOOD, 3rd five years of No. 20,011, from the 12th day of August, 1894. Improvements in Buckboard Waggons, 16th August, 1894.

3589. PER P. OLSSON, 2nd five years of No. 32,158, from the 13th day of August, 1894. Improvements in Knitting Machines according to Lamb's system, 16th August, 1894.

3590. FREDERICK Y. WOLSELEY, 2nd five years of No. 32,116. from the 20th day of August, 1894. Improvements in Apparatus for Shearing Sheep, and other animals, Clipping Horses, &c., 16th August, 1894.

3591. HENRY BLACKMAN, 2nd five years of No. 32,210, from the 9th day of September, 1894. Improvements in Disintegrating Fibers and Manufacturing Paper Pulp, 20th August, 1894.

3592. EDWARD E. GOLD, 2nd five years of No. 32,301, from the 17th day of September, 1894. Improvements in Heating Apparatus, 20th August, 1894.

3593. SIDNEY W. WINSLOW, 2nd and 3rd, five years of No. 32,438, from the 3rd day of October, 1894. Improvements in Buffers, 21st August, 1894.

3594. SIDNEY W. WINSLOW, 2nd and 3rd, five years of No. 32,439, from the 3rd day of October, 1894. Improvements in Buffer Coverings, 21st August, 1894.

3595. SIDNEY W. WINSLOW, 2nd and 3rd, five years of No. 32,440, from the 3rd day of October, 1894. Improvements on Buffer Coverings, 21st August, 1894.

3596. SIDNEY W. WINSLOW, 2nd and 3rd, five years of No. 32,442, from the 3rd day of October, 1894. Improvements in Buffers, 21st August, 1894.

3597. IRVING BROWN, 2nd five years of No. 32,840, from the 15th day of November, 1894. Improvements in Chain Links, 23rd August, 1894.

3598. WILLIAM H. RICHMOND, 2nd five years of No. 34,127, from the 18th day of April, 1895. Improvements in Clothes Drying Reels, 24th August, 1894.

3599. KILGOUR BROS., (assignees), 2nd five years of No. 32,336, from the 18th day of September, 1894. Improvements in the Method of Making Striped Paper Bags, 24th August, 1894.

3600. WILLIAM A. CONNER, and JOSEPH W. MARSH, 2nd five years of No. 32,146, from the 28th day of August, 1894. Improvements in Conductors of Electricity, 27th August, 1894.

3601. WILLIAM HESLOP, 2nd five years of No. 32,148, from the 28th day of August, 1894. Improvements in the construction of Boats, 27th August, 1894.

3602. ARCALOUS WYCKOFF and ERNEST L. WYCKOFF, 2nd five years of No. 32,300, from the 17th day of September, 1894. Improvements in Pipe Casings or Conduits, 27th August, 1894.

3603. THE BROSIUS INTERNATIONAL MOTOR SEWING MACHINE COMPANY (assignees), 2nd five years of No. 32,165, from the 30th day of August, 1894. Improvements in Motors for Sewing Machines, 28th August, 1894.

3604. ALBERT P. BRAYTON, 2nd five years of No. 32,918, from the 21st day of November, 1894. Improvements in Water Wheels, 28th August, 1894.

3605. THE WESTERN ELECTRIC COMPANY (assignees), 3rd five years of No. 20,079 from the 29th day of August, 1894. Improvements in Multiple Switch Board Apparatus, 29th August, 1894.

3606. JAMES L. MORRISON, 2nd five years of No. 32,196, from the 3rd day of September, 1894. Improvements in Black Leaf Check Books, 29th August, 1894.

3607. JAMES W. PROVAN, 3rd five years of No. 20,200, from the 17th day of September, 1894. Improvements in Hay Carriers or Forks, 29th August, 1894.

TRADE-MARKS

Registered during the month of August, 1894, at the Department of Agriculture—Copyright and Trade-Mark Branch.

5018. ARCHDALE WILSON, of Hamilton, Ont. An Extract for the manufacture of Ginger Beer, 2nd August, 1894.

5019. NAPOLEON THOMAS TURGEON, of Brompton Falls, Que. Cigars, 2nd August, 1894.

5020. THE MILTON PRESSED BRICK AND SEWER PIPE COMPANY, LIMITED, of Milton, Ont. Bricks, Sewer Pipe, Tile, Terra Cotta, &c., 7th August, 1894.

5021. THORPE AND COMPANY, LIMITED, of Victoria and Vancouver, B.C. Aerated Waters, 7th August, 1894.

5022. LYMAN, SONS AND COMPANY, of Montreal, Que. Perfumed Toilet Preparations, 7th August, 1894.

5023. } THE BRITISH TEA AND TRADING ASSOCIATION, LIMITED, of
5024. } 118 Southwark Street, London, England. Tea, Coffee, Cocoa, and extracts therefrom, 8th August, 1892.

5025. }
5026. }
5027. } WORLD'S DISPENSARY MEDICAL ASSOCIATION of Buffalo, New
5028. } York, U.S.A. Medical Compounds, 9th August, 1894.
5029. }

5030. READ HOLLIDAY AND SONS, LIMITED, of Huddersfield, England. A Disinfectant in liquid and powder form, also Soap, 9th August, 1894.

5031. B. GOLDSTEIN AND COMPANY, of Montreal, Que. Cigars and Cigarettes, 10th August, 1894.

5032. THE AMERICAN TOBACCO COMPANY, of Newark, New Jersey, U.S.A. Manufactured Tobacco and particularly Cigars, Cigarettes, Cheroots, Snuff and Chewing and Smoking Tobacco, 14th August, 1894.

5033. HENRY MILES, of Montreal, Que. Soap, 17th August, 1894.

5034. CHARLES C. DALTON, of Toronto, Ont., trading as DALTON BROTHERS. Laundry Soap, 18th August, 1894.

5035. J. RATTRAY AND COMPANY, of Montreal, Que. Tobacco in all forms, including Cigars and Cigarettes, 18th August, 1894.

5036. G. J. MOULTON AND COMPANY, LIMITED, of Soho Mills, Macclesfield, Cheshire County, England. Paraffin Soap for Laundry Purposes, 21st August, 1894.

5037. THOMAS TRIMBLE, of Montreal, Que., (THE JOHN ANDERSON BREAD COMPANY). Bread, 22nd August, 1894.

5038. ISAAC WILMOT, de Montréal, Qué. Un Restorateur Infaillible de la Chevelure, 28 Août, 1894.

5039. GEORGE ROBSON BUCKHAM, of Toronto, Ont. Dress Fabrics, 30th August, 1894.

5040. LEVER BROTHERS, LIMITED, of Port Sunlight, near Birkenhead, Chester, England, Candles, Common Soap, Detergents, Matches, Starch, Blue, &c., also Perfumed Soap, Perfumery, &c., 30th August, 1894.

5041. JOSIAH BRUCE PAYNE, of Granby, Que. Cigars, 31st August, 1894.

5042. CRAWFORD TEA COMPANY, of London, England. Tea, 31st August, 1894.

COPYRIGHTS

Entered during the month of August, 1894, at the Department of Agriculture—Copyright and Trade-Mark Branch.

7525. THE MASCOT DANCE. By Madge A. H. Doughty, Calgary, Alberta, N.W.T., 2nd August, 1894.

7526. REPUBLIQUE ROYALE. Par Raymond Auzias-Turenne, Outremont, près Montréal, Qué., 3 Août, 1894.

7527. TRUE PIRATE STORIES. Temporary Copyright book published in the "Progress," St. John, N.B. William Kilby Reynolds, St. John, N.B., 3rd August, 1894.

7528. BELL TELEPHONE COMPANY OF CANADA, LIMITED, HAMILTON AND DUNDAS EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, JULY, 1894. The Bell Telephone Company of Canada, Limited, Montreal, Que., 4th August, 1894.

7529. THE EXEGETICAL SOCIETY OF TORONTO. (Pamphlet.) John Linden, Toronto, Ont., 6th August, 1894.

7530. *THE EAST AND WEST KOOTENAY DISTRICT. (Map.) Compiled by* Frank Fletcher, P.L.S., Nelson, B.C., 7th August, 1894.

7531. L'ASSOLEMENT SIDÉRAL DE M. G. VILLE ET LA BETTERAVE À SUCRE AU CANADA. Par le Comte des Etangs, Sorel, Que., 8 août 1894.

7532. THE HAUNTED SCHOOL HOUSE. (Photo.) Miss Janet Fraser, Nelson, Ont., 9th August, 1894.

7533. BLANK NOTE FORM. H. B. Andrews, Toronto, Ont., 9th August, 1894.

7534. TEN DAYS IN QUEBEC. (Book.) G. R. Renfrew, Quebec, Que., 10th August, 1894.

7535. TORONTO ISLAND GUIDE. (Book.) Arthur Taylor, Toronto, Ont., 11th August, 1894.

7536. TEMPORARY CASE GOODS CATALOGUE. The James Hay Company, Ld., Woodstock, Ont., 14th August, 1894.

7537. HILL CREST. By Mrs. Flewellyn. (Book.) Cooper & Co., Toronto, Ont,, 15th August, 1894.

7538. WEEKLY INVESTMENT STOCK CIRCULAR OF THE YORK COUNTY LOAN AND SAVINGS COMPANY. Joseph Phillips, Toronto, Ont., 17th August, 1894.

7539. THE PASTOR'S CONGREGATIONAL RECORD. (Non-denominational.) By Rev. G. S. Carson, B.A. A. and W. MacKinlay, Halifax, N.S., 18th August, 1894.

7540. METER REGISTER AND ACCOUNT BOOK FOR THE USE OF ELECTRIC LIGHT AND POWER COMPANIES. Douglas R. Street, Ottawa, Ont., 18th August, 1894.

7541. PHRENOLOGICAL CHART AND HYGIENE DIRECTIONS. William Jones, Toronto, Ont., 20th August, 1894.

7542. NOTES ON SELECTIONS FROM TENNYSON. By M. F. Libby, B.A. The Copp, Clark Co., Ld., Toronto, Ont. 22nd August, 1894.

7543. ILLUSTRATED CATALOGUE OF THE HEALTH BRAND UNDERWEAR. Henry J. Joseph, Montreal, Que., 23rd August, 1894.

7544. PORTRAIT DE ST. FRANÇOIS D'ASSISE. Frs. N. Faveur, Québec, Qué., 24 août 1894.

7545. QUEBEC READERS. First Book, Part One. *Wm. Foster Brown,* Montreal, Que., 24th August, 1894.

7546. LATIN PROSE COMPOSITION WITH EXERCISES ON CÆSAR, LIVY AND CICERO, by J. Fletcher, M.A., and J. Henderson, M.A. The Copp, Clark Co., Ld., Toronto, Ont., 27th August, 1894.

7547. APPLICATION AND CONTRACT WITH THE YORK COUNTY LOAN AND SAVINGS COMPANY FOR WEEKLY PAYMENT STOCK. Joseph Phillips, Toronto, Ont., 28th August, 1894.

7548. DE LA PREUVE EN MATIÈRE CIVILE ET COMMERCIALE. Par L'Hon. F. Langelier, LL.D., C.R., Québec, Qué.. 28 août 1894.

7549. CÆSAR DE BELLO GALLICO, BOOKS V. AND VI., WITH INTRODUCTION, NOTES, MAPS, ILLUSTRATIONS, &c., &c., by J. C. Robertson, B.A. The W. J. Gage Co., Ld., Toronto, Ont., 29th August, 1894.

7550. SELECT POEMS OF TENNYSON WITH INTRODUCTION AND NOTES, by Frederick Henry Sykes, M.A., Ph. D. The W. J. Gage Co., Ld., Toronto, Ont., 29th August, 1894.

7551. NOTES TO GOLDWIN SMITH'S LIFE OF COWPER, by Frederick Henry Sykes, M.A., Ph. D. The Copp, Clark Co., Ld., Toronto, Ont., 30th August, 1894.

7552. QUEBEC READERS. FIRST BOOK, PART SECOND. William Foster Brown, Montreal, Que., 31st August, 1894.

7553. TRIUMPHANT SONGS, NUMBER 4. By E. O. Excell. Wm. Briggs (Book Steward of the Methodist Church in Canada) Toronto, Ont., 31st August, 1894.

INDEX OF INVENTIONS.

INDEX OF PATENTEES.

Crumbie, Ella D. Stopper for ink bottles..... 46,704
Darling, James D. Art of producing nitric acid and metals from nitrates..... 46,734
Davis, Adolphus. Incinerator..... 46,743
Davis, Charles R., et al. Drenching bottle..... 46,761
Decker, William M., et al. Nursing bottle..... 46,759
Denis, Edward. Toy..... 46,787
Dennis, Martin. Process of making a tanning liquid..... 46,799
Dolge, Rudolf, et al. Harp..... 46,778
Dorenwend, Hildebert. Hair structure..... 46,769
Dowswell, George B. Clothes wringer..... 46,820
Du Bois Raymond, Alard E. Distribution of rotary electric currents..... 46,835
Eames, Henry H. Method of and apparatus for treating ore..... 46,764, 46,765
Edey, Charles C., et al. Rheostat..... 46,845
Eiche, August. Pastry tin..... 46,739
Eickershoff, John H. Steam engine..... 46,752
Ekstrom, Axel. Brush supporter for dynamo electric machines..... 46,804
Electric Selector and Signal Co. Electric block system..... 46,843
English, Carl S. Electrical governor for water wheels..... 46,756
Euwer, James N. Fastener for windows and doors..... 46,866
Feher, Odile. Lock..... 46,846
Filgate, Charles J. Machine for knitting stockings..... 46,797
Fletcher, Charles R. Production of alloys by electro decomposition..... 46,732
Flinn, Richard J. Steam trap..... 46,742
Flohr, Otto, et al. Car coupler..... 46,872
Flowers, Julius W., et al. Vise..... 46,782
Frechette, Isaie, et al. Lasting tool..... 46,702
Friedlaender, Max, et al. Joint for railway rails..... 46,773
Frolich, Oscar. Electric meter..... 46,735
Forbes, Emma L. Printing press..... 46,806, 46,807
Fowden Printing Telegraph Co. Printing telegraph..... 46,760
Fowden, Robert A. Printing telegraph..... 46,760
Fox, Truman V., et al. Pail..... 46,867
Galloway, Samuel J. et al. Car and air brake coupler..... 46,775
Gery, Aldis J., et al. Harp..... 46,778
Giesen, Andreas, et al. Apparatus for treating beer..... 46,727
Gilmore, Samuel R. Swinging chair and hammock..... 46,899
Globe Buffer Company. Buffing pad..... 46,762
Goetz, Henry A. Joist hanger..... 46,853
Gorges, Johannes H. F. Electric meter..... 46,796
Gould Bicycle Co. Drive chain..... 46,861
Gould, Harry A. Wagon jack..... 46,869
Granite Mills. Lock..... 46,689
Grover, Johnson M., et al. Washing machine..... 46,884
Halpin, Cornelius. Car coupler..... 46,706
Harrison, Thomas, et al. Skate..... 46,886
Harvey, James F., et al. Hammer..... 46,698
Hassard, Aaron. Machine for cooling tires..... 46,877
Hawes, George T. Truss for bridges..... 46,685
Heenan, Thomas, et al. Transfer ticket..... 46,745
Hermann, Edward A. Signal..... 46,791, 46,803
Herschell, Allan and George C., et al. Merry-go-round..... 46,790
Hoch, Fred. Cable street railway..... 46,753
Hodgson, William. High and low water alarm..... 46,887
Hoepfner, Carl. Method of producing nickel and cobalt..... 46,830
Hoepfner, Carl. Ore separator..... 46,691
Hoffman, George A., et al. Joint for railway rails..... 46,773
Hoffman, Nathaniel B. K. Air brake..... 46,860
Horn, George A., et al. Churn dasher..... 46,707
Howard, Henry, et al. Grinding machine..... 46,779
Hume, Robert D. Can making machine..... 46,710
Hussey, Charles A., et al. Rheostat..... 46,845
James, Howard K., et al. Spring and shackle..... 46,885
Janowitz, Julius. Dress stay..... 46,750
Johnston, William, et al. Transfer ticket..... 46,745
Kelley, Charles. Air trap and valve for water closets..... 46,711
Kennedy, Patrick, et al. Electric car lighting apparatus..... 46,749
Ketcher, Joseph L. Apparatus for generating and supplying electricity..... 46,692
Lafond, Joseph D. E. Egg case..... 46,881
Laline, Jean B., et al. Lasting tool..... 46,702
Lamb, Richard. Logging system..... 46,821
Lavergne, Louis. Street gulley..... 46,850
Le Bel, John D., et al. Switch..... 46,683
Leonard, Michael B. Electric block system..... 46,843
Lesem, Samuel, et al. Rock drill..... 46,703
Lincoln, Charles F., et al. Bicycle..... 46,859
Lisk, David A., et al. Pail..... 46,867
Lockhart, Charles B., et al. Tire tightening machine..... 46,890
Logan, Charles L. Register for fare..... 46,697
Loh, Fred C., et al. Car coupler..... 46,872
Long, Eli L., and Alvin K. Grate..... 46,873
Long, Harry. Drive chain..... 46,861
Macdonald, David, et al. Pail..... 46,757
MacDonald, Randolph, et al. Electric propulsion of cars 46,700
Magnetic Electric Railway. Electric railway..... 46,701
Mann (J. W.) Manufacturing Co. Cultivator..... 46,891
Mantion; Joseph H. Match splint coiling machine..... 46,880
Mason, William B. Medicinal compound..... 46,730
Mayer, John H. Let-off mechanism for looms..... 46,896
Mayer, Louis G., et al. Spring and shackle..... 46,855
McBryer, Charles W., et al. Device for preventing the derailing of cars..... 46,684
McHugh, Bernard. Device for cutting cards for photograph mounts..... 46,882
McKay, Alexander. Saw-mill..... 46,878
McKenzie, John D., et al. Book-safe..... 46,699
McKnight, Jacob M., et al. Oiler for locomotives..... 46,708
McManus, Thomas, et al. Steam shovel..... 46,883
Meisner, Waldemar. Distribution of electric currents..... 46,844
Mills, E. Deloss. Hop-picking machine..... 46,893
Mills Hop-Picking Machine Co. Hop-picking machine..... 46,893
Mitscherlich, Alexander. Process of making wood fibre capable of being spun..... 46,722
Mcomelis, Adolph. Cigarette machine..... 46,812, 46,825
Moomelis, Adolph. Machine for cutting cigarette wrappers..... 46,813, 46,823, 46,824
Moore, William, et al. Hame tug..... 46,858
Muller, Adelbert O., et al. Apparatus for treating beer..... 46,727
Mundry, John, et al. Fastener for trunk straps..... 46,776
Mundry, Peter, et al. Fastener for trunk straps..... 46,776
Murby, Edward. Machine for making looped fabric..... 46,719
Newlands, Andrew M. Rug..... 46,802
New York Car Switch Company. Switch for railways..... 46,851, 46,852
Nicholson, Frederick R. Catch-band..... 46,900
Norreys, Alfred. Process of producing fuel..... 46,731
Olson, Christopher H., et al. Tire tightening machine..... 46,890
O'Neill, Michel B., et al. Book safe..... 46,699
Osborn, Daniel. Pea harvester..... 46,862
Palmer, Zenas L. Wagon jack..... 46,869
Park, Charles S. Car coupler..... 46,818
Patent Telephone Indicator Co. Indicator..... 46,870
Payne, George, et al. Machine for handling invalids..... 46,690
Payne, Nimrod P., et al. Car and air brake coupler..... 46,775
Pell, Harry S. Pulley..... 46,840
Peterson, Herluf A. F. Underground conduit for electric railways..... 46,712
Philipsborn, Alexander. Electric car..... 46,737
Philipsborn, Alexander. Electro-locomotive..... 46,736
Philipsborn, Alexander, et al. Electro-locomotive..... 46,686
Pickett, George W., et al. Rock drill..... 46,703
Pierce, George H., et al. Railroad tie and chair..... 46,871
Pontier, Henry, et al. Fastener for trunk straps..... 46,776
Porter, Henry C. Electrode for secondary batteries..... 46,814
Priest, Edward D. Commutator connections..... 46,805
Publow, James A. Cultivator..... 46,891
Pupin, Michael J. Electrical transmitter..... 46,768
Rice, Edwin W. Electric conversion..... 46,783
Richie, Walter J. Harp..... 46,696
Richmond, Louis L. Saddle for bicycles..... 46,863
Ricker, John W., et al. Churn dasher..... 46,707
Ries, Elias E. Electric motor..... 46,847
Ries, Elias E. Holder for incandescent electric lamps..... 46,809
Ries & Henderson. Electric motor..... 46,847
Rogers, Samuel C., et al. Grinding machine..... 46,746
Rosebrugh, Abner M. Multiplex telephony..... 46,713
Rostel, Carl B. Truss..... 46,815
Ruehs, Charles L. Machine for preparing moulding sand..... 46,777
Ryan, Michael B., et al. Bicycle..... 46,859
San Francisco Register Co. Register for fares..... 46,697
Schaefer, Peter, et al. Drenching bottle..... 46,761
Schiemann, Max, et al. Electric locomotive..... 46,686
Schifferdecker, Charles. Target and indicator therefor..... 46,728
Schilling, Henry B., et al. Device for preventing the derailing of cars..... 46,684
Schuler, Lina, et al. Fireproofing composition..... 46,781
Schwarz, Abraham W. Process of blasting..... 46,721
Scott, Richard C. Method of ageing spirits..... 46,798
Scott-Moncrieff. William D. Apparatus for treating sewage..... 46,770
Scouler, James. Negative and screen holder..... 45,755
Seagrave, Frank E. Signal for electric railways..... 46,810
Seaton, Benjamin C. Signal for electric railways..... 46,839
Seibert, David. Eccentric spring motor..... 46,838
Seger, Garret, et al. Washing machine..... 46,705
Seward, Edward C., et al. Switch for railways..... 46,852
Shaw, George E. Method of making burial caskets..... 46,897
Shaw, George V. Nutmeg grater..... 46,832
Shay, Russell A. Vehicle wheel..... 46,879
Sleeper, Frank H. Alternating current generator..... 46,837
Sleeper, Frank H. Alternating current motor..... 46,836
Slusser, Murray C., and William J. Nut lock..... 46,831
Smart, Elswood. Milking machine..... 46,894
Smith, Joseph H. Rock drill..... 46,729
Southard, Calvin B. Box machine..... 46,718
Sperry, Elmer A. Electric mining machine..... 46,827
Spoendlin, Rudolf. Process of treating nettle fibre..... 46,766
Stafford, William. Press screw..... 46,829
Still, William J., et al. Electric propulsion of cars..... 46,700
Stone, John S. Telephonic transmission..... 46,774
Struble, Charles B. Cigar lighter..... 46,693
Summers, Smith W. Car and air brake coupler..... 46,854

Swanson, Alfred, Peter, Frank and Andrew. Washing machine..... 46,705
Symmes, Henry D. Speed regulator for dynamos..... 46,725
Tassie, William T., et al. Pail..... 46,757
Thiel, Herman K. Motor and dynamo..... 46,687
Thielemann, Robert H. Foot warmer..... 46,874
Timmins, William, et al. Hame tug..... 46,858
Thomson, Elihu. Electric distribution..... 46,785
Thomson, Hugh. Hydrant..... 46,789
Thomson, Walter P., et al. Machine for handling invalids. 46,690
Turner, James H., et al. Oiler for locomotives..... 46,708
Van Wickel, Frederick D. Cigar holder..... 46,720
Verity, Robert H. Jaw and clevise for plows..... 46,715
Waltbridge, Alexander S. Bridge..... 46,695
Wanner, Martin. Refrigerating liquid..... 46,819
Webster, Harold A. Buffing pad..... 46,762
Weed, Gustavus R. Stopper for ink bottles..... 46,704
Wendte, William C. Printing press..... 46,806, 46,807
Western Union Telegraph Company. Telegraphy..... 46,780
Wheeler, Phillip, et al. Railroad tie and chair..... 46,871
Whelpley, Edwin H., et al. Skate..... 46,886
Wicks, Pierson J. Telegraphy..... 46,780
Wiley, William A., et al. Hammer..... 46,698
Wilson, Henry M., et al. Cheese making machine..... 46,800
Wint, Thomas L., et al. Weather board gage..... 46,758
Wollenhaupt, Bruno E. Violin..... 46,901
Woods, Edward. Feet for dredges..... 46,816
Woodward, Abner. Carriage..... 46,849
Woolley, Hyrum S. Electric conduit system..... 46,826
Wörner, Adolf. Trolley..... 46,747
Worthen, William E. Apparatus for applying and removing storage batteries..... 46,694
Wright, Arthur O. Lath..... 46,868
Young, Samuel J. T., et al. Weather board gage..... 46,758
Zanardo, Antonio. Stone carving machine..... 46,744
Zimmerman, (The C. F.) Company. Harp..... 46,696, 46,778