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The Canadian Patent Office Record

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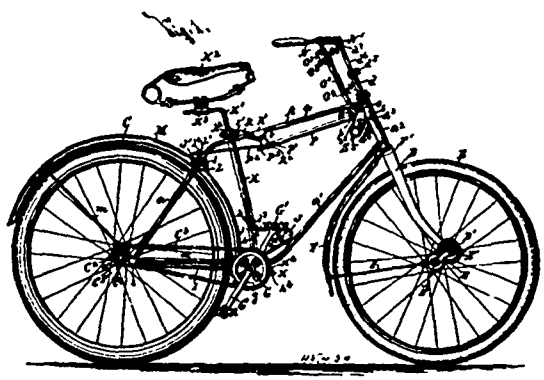
No. 45,450. Bicycle. (*Bicycle.*)



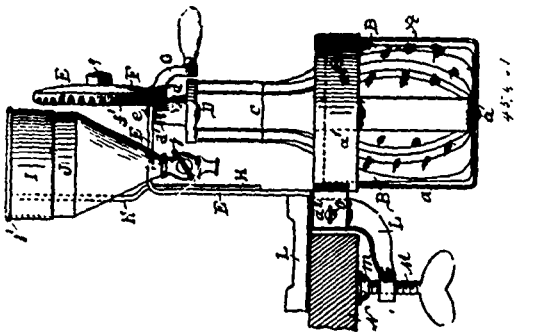
Henry La Casse, Rochester, New York, U.S.A., 1st March, 1894 6 years.

Claim. 1st. In a bicycle, the combination of a front wheel B having an axle b, a pair of links E E extending upwardly and forwardly from the axle, and having their lower ends rigidly secured to the opposite ends of the axle, a fork D hinged to the upper ends of the links, a spring E^1, having one end secured to the fork, and the other end to one of the links, and shoulders D^3 E^2, formed on said link, and fork for limiting the movement of the link, substantially as and for the purpose set forth. 2nd. In a bicycle, the combination of a front wheel B having a hub b^1, and an axle b, a pair of links E E extending upwardly and forwardly from the axle, and having their lower ends rigidly secured to the opposite ends of the axle, a fork D hinged to the upper ends of the links E, springs E^1 E^1, having their upper ends secured to the fork and their lower ends to the corresponding links, shoulders D^3, D^3, formed on said links and fork for limiting the movement of the links, and anti-friction balls b^4, c^1, between the axle b, and the front wheel hub b^1, and between the upper ends of the links E and the fork D, substantially as and for the purpose specified. 3rd. In a bicycle, the combination of the front and rear wheels B, C, a frame A supported on the wheels, a pedal-shaft G, a knuckle-joint H interposed between the pedal-shaft and the frame, and comprising a series of levers pivoted to each other, and also to the pedal-shaft and to the frame, and a spring J for supporting said knuckle-joint H in its normal position, substantially as and for the purpose set forth. 4th. In a bicycle, the combination of the front and rear wheels B, C, a frame A supported on said wheels, a pedal-shaft G, a knuckle-joint H interposed between the pedal-shaft, and the frame and comprising a series of levers pivoted to each other, and also to the pedal-shaft and to the frame, a spring J for supporting said knuckle-joint in its normal position, and a link I, having one end connected to said knuckle-joint, and the other end hinged to the frame at a point at the rear of the point of support of the knuckle-joint upon the frame, substantially as and for the purpose specified. 5th. In a bicycle, the combination of a frame A, a pedal-shaft G, a lever H projecting from the pedal-shaft, a pair of levers H^1, H^2, having their adjacent extremities hinged together, and having their opposite ends hinged respectively, to the frame A, and to said lever H^3 projecting from the pedal-shaft, and anti-friction balls h^4, between said levers and between said frame and the one of said levers hinged to the frame, substantially as and for the purpose set forth. 6th. In a bicycle, the combination of a frame A, a seat K^2, a seat support K, a knuckle-joint H between the frame and the seat support, and an adjustable spring J secured to said frame and to said seat support, substantially as and for the purpose specified. 7th. In a bicycle, the combination of the front and rear wheels B C, a frame A supported on said wheels, a pedal-shaft G, a knuckle-joint H interposed between the pedal-shaft and the frame and comprising a series of levers pivoted to each other and also to the pedal-shaft and to the frame, a spring J for supporting said knuckle-joint H in its normal position, a link I having one end connected to said knuckle-joint and the other hinged to the frame at a point at the rear of the point of support for the knuckle-joint upon the frame, and a seat support K mounted on said knuckle-joint and provided with a seat K^2, substantially as and for the purpose set forth. 8th. In a bicycle, the combination of a frame A, a pedal-shaft G, a knuckle-joint H interposed between the pedal-shaft and the frame, and comprising a series of levers pivoted to each other and also to the pedal shaft and to the frame, a link I having one end connected to said knuckle-joint, and the other hinged to the frame at a point at the rear of the point of support of the knuckle-joint upon the frame, a seat support K provided at its upper end with a seat K^2, and having its lower end supported on said knuckle-joint H and provided with a series of notches or seats k, and a spring J having one end hinged to the frame A and the other end removably engaged with the notches or seats k, substantially as and for the purpose specified. 9th. In a bicycle, the combination of a frame A provided at its rear end with a screw-threaded arm a^1, a rear wheel C provided with an axle c, an arm or connecting piece C^4 having one end supported on the rear axle and the other movable on said screw-threaded end of the frame, nuts C^5 movable upon said screw-threaded frame end and engaged with the arm or connecting plate C^4 for holding the same in position, a pedal-shaft G supported on the frame and power transmitting mechanism connecting said rear wheel and the pedal-shaft, substantially as and for the purpose set forth. 10th. In a bicycle, the combination of a frame A, a rear wheel C movable lengthwise of the frame, means, substantially as described, for securing the wheel in its adjusted position on the frame, a pedal-shaft G, a link I having one end hinged to the frame and the other connected to support the pedal-shaft, and a spring J holding the pedal-shaft in position, substantially as and for the purpose specified. 11th. In a bicycle, the combination of a frame A, a pedal-shaft G, a movable link I for supporting the pedal-shaft secured to the frame, and a handle bar N connected, substantially as described, to said support, whereby the handle bar vibrates in unison with the pedal-shaft, substantially as and for the purpose set forth. 12th. In a bicycle, the combination of a frame A, a seat support K movably supported on the frame, a handle bar N connected, substantially as described, to said seat support, whereby the handle bar vibrates in unison with the

seat support, and a spring S for forcing the handle bar upwardly, substantially as and for the purpose specified. 13th. In a bicycle, the combination of a frame A, a brake-lever L supported on the frame, a movable handle bar N upon the frame, movable connections P, P^2, L^2, supported on the frame for operating the brake-lever, a lever O connected to said movable connections, and a link O^1 connected by ball and socket joints to said handle bar and the lever O, substantially as and for the purpose set forth. 14th. In a bicycle, the combination of a frame A, a pedal-shaft G, a movable support I for the pedal-shaft secured to the frame, a seat support K mounted on the movable support for the pedal-shaft, a handle bar N connected, substantially as described, to the seat support, whereby the handle bar N, the seat support K and the pedal-shaft G vibrate in unison, and a brake lever L supported on the frame and connected, substantially as described, to the handle bar N, substantially as and for the purpose specified.

No. 45,451. Mayonnaise Mixer.

(*Appareil pour mélanger la mayonnaise.*)

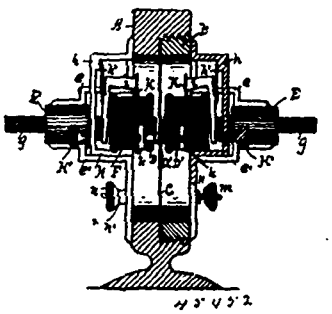


Jennie De Witt Harvey, Wilkesbarre, Pennsylvania, U.S.A., 1st March, 1894; 6 years.

Claim. 1st. A mayonnaise mixer having a beater, .. cup within which the beater wires operate, means for holding the cup removably in position, and oil reservoir suspended above the cup, said reservoir being provided with means for regulating the flow of the oil into the cup. 2nd. In a mayonnaise mixer, the combination, with a beater provided with a clamping bracket, of a cup-holder removably secured to said bracket, a cup within the holder, and an oil reservoir provided with a stop-cock and arranged to discharge its contents into the cup for the purposes stated. 3rd. In a mayonnaise mixer, the combination, with a beater provided with a clamping bracket, of a cup-holder removably secured to said bracket, a cup within said holder, means for steadying the cup, and oil reservoir provided with a gauge and means for regulating the outward flow of the oil, said reservoir being so arranged as to discharge its contents into the cup, for the purposes set forth. 4th. A mayonnaise mixer comprising a rotary beater, a bracket for clamping the beater to a table or like support, a cup-holder removably secured to the bracket, a cup within said holder, means for steadying the cup, a standard secured to the beater and carrying a ring at its upper end, and an oil reservoir carried by said ring, said reservoir being provided with a gauge and a stop-cock, all substantially as described.

No. 45,452. Long Distance Telephone.

(*Téléphone à longue distance.*)

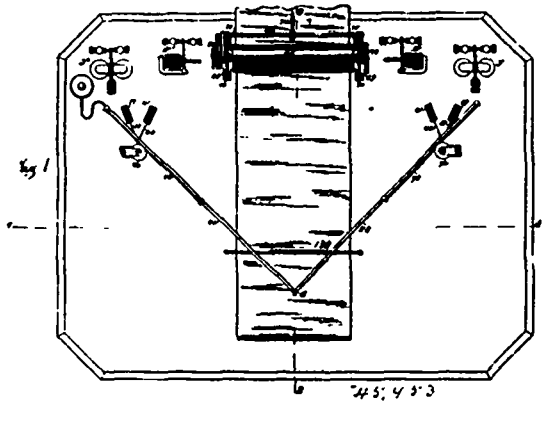


Charles Marshall Haynes, Omaha, Nebraska, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. In a telephone repeater, the combination with a supporting standard, of a diaphragm within the field, of two or more electro-magnets, within separate circuits, an insulated arm secured at one point to said diaphragm and an adjustable tension spring secured to said arms, to counterbalance the attraction of said electro-magnets, all substantially as and for the purpose set forth. 2nd. In a telephone repeater, the combination with a suitable standard, of a diaphragm held within said standard, two or more electro-magnets adjustably secured to said standard within separate circuits and functioning said diaphragm, and an insulated tension spring secured to said diaphragm, and having its free ends working against a suitable set screw, all substantially as and for the purpose set forth. 3rd. In a telephone repeater, the combination with a supporting standard, of a diaphragm secured within said standard and provided upon each side with an insulated arm secured at one point to said diaphragm, said arms being provided with a metallic electrode, upon the free end, a recurved tension spring secured to each of said arms, and provided with an electrode, in combination with said metallic electrode, and means for regulating the tension of said recurved spring, all substantially as and for the purpose set forth. 4th. In a telephone repeater, the combination, with a supporting standard, of a diaphragm secured within said standard and provided upon each side with an insulated arm secured at one point to said diaphragm, said arms extending in like direction and provided with a metallic electrode upon the free end, a recurved adjustable tension spring secured to each of said arms, a supporting bracket secured to said frame, one upon each side, and positioned in front of said metallic electrode and provided with a set screw, a stub spring secured to each of said brackets upon the rear, and provided with an L-shaped tension lever, one stem of said lever working against said set screws, a diaphragm spring secured to the free end of each of said levers and provided with a recessed carbon electrode adapted to hold the free recurved end of said bow spring, so as to bring said carbon and metallic electrodes into juxtaposition, each set of electrodes being within a separate electric circuit, and an inductive coil within each of said circuits, all arranged to operate substantially as and for the purpose set forth. 5th. In a duplex telephone repeater, the combination of a supporting standard, a diaphragm secured within said standard, provided upon each side with an arm of non-conducting material, said arms extending slightly outward and secured at one end centrally within diaphragm, said arms extending in like direction and provided with a metallic electrode upon the free end, a recurved bow spring secured to each of said non-conducting arms, a supporting bracket secured to said frame, one upon each side, and positioned in front of said metallic electrode and provided with a set screw, a stub spring secured to each of said brackets upon the rear, and provided with an L-shaped tension lever, one stem of said lever working against said set screws, a diaphragm spring secured to the free end of each of said levers and provided with a recessed carbon electrode adapted to hold the free recurved end of said bow spring, so as to bring said carbon and metallic electrodes into juxtaposition, each set of electrodes being within a separate electric circuit, and two adjustable and insulated electro-magnets, one within each of said circuits and positioned centrally within the field of said diaphragm, one upon each side, and secured by means of suitable brackets, all arranged to operate, substantially as and for the purpose set forth. 6th. In a duplex telephone repeater, the combination of a supporting standard, a diaphragm secured within said standard provided upon each side with an arm of non-conducting material, said arms extending slightly outward and secured at one end centrally within said arms extending in like direction and provided with a metallic electrode upon the free end, a recurved bow spring secured to each of said non-conducting arms, a supporting bracket secured to said frame, one upon each side, and positioned in front of said metallic electrode and provided with a set screw, a stub spring secured to each of said brackets upon the rear, and provided with an L-shaped tension lever, one stem of said lever working against said set screws, a diaphragm spring secured to the free end of said levers and provided with a recessed carbon electrode adapted to hold the free recurved end of said bow spring, so as to bring said carbon and metallic electrodes into juxtaposition, each set of electrodes being within a separate electric circuit, two adjustable and insulated electro-magnets, one within each of said circuits and positioned centrally within the field of said diaphragm, one upon each side, and an auxiliary induction coil within said circuit, all arranged to operate substantially as and for the purpose set forth. 7th. In a telephone repeater, the combination of the following instrumentalities, to wit: the standard A, diaphragm C, the brackets c, c, supporting the cylindrical holders E, E, and the electro-magnets F, F, adjustably held within the holder E, each magnet being within a separate circuit, all substantially as and for the purpose set forth. 8th. In a telephone repeater, the combination of the instrumentalities, to wit: the standard A, provided centrally with the diaphragm C, the non-conducting arms C^1, C^1, secured to said diaphragm, and provided with the outwardly extending electrode D, and the recurved metallic tension spring D^1, and the brackets c^1, c^1, provided in the rear with the shoulder h, giving support to the stub spring h^1, the levers i secured to the spring h^1, the lower end working against the set screw H, the diaphragm springs K secured to said levers, and provided with the carbon electrode K adapted to hold the free end of the spring D, and work against the said electrode D, each set of electrodes being within a separate electric circuits, all substantially as and for the purpose set forth. 9th. In a duplex telephone repeater, the combination of the following instrumentalities, to wit: the standard A, diaphragm C, the arms C^1, C^1, secured to said diaphragm, and provided with the metallic electrodes D, D, and the recurved tension springs D^1, D^1, the bars c, c, supporting the cylindrical holders E, E, said holders adjustably securing the electro-magnets F, F, the brackets H, H, provided

with the shoulders h, h, supporting the stub springs h^1, h^1, to which are secured the L-shaped levers i, i, working at their lower ends against the set screws H, H, the diaphragm springs K, K, provided with the carbon electrodes k, k, securing the free end of the tension springs D^1, D^1, and working upon the electrodes D, D, and the auxiliary induction coil F^1, F^1, each set of electrodes being within a separate electric circuit, to transmit and repeat the electric undulations, substantially as and for the purpose set forth.

No. 45,453. Telautograph. (*Télautographe.*)



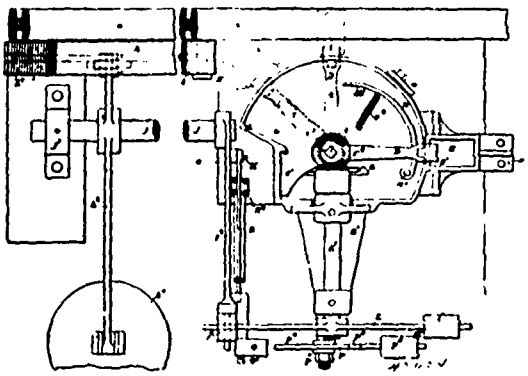
Elisha Gray, Highland Park, Illinois, U.S.A. 3rd March, 1894; 6 years.

Claim.—1st. The combination of a motor, a telautographic receiving-pen driven thereby, and a magnetic-clutch through which the power of the motor is transmitted to the driven mechanism, said clutch consisting of two members each of magnetizable material, one having a rotatory and the other a rectilinear motion, substantially as set forth. 2nd. The combination of telautographic receiving-pen, a motor or other power mechanism for driving the receiving-pen, and a magnetic-clutch for transmitting power from the motor to the pen, said clutch consisting of two members, each of magnetizable material, one caused to rotate by the power mechanism and the other receiving a rectilinear movement therefrom, substantially as described. 3rd. As a means for controlling the application of power, a disc or discs of magnetizable material mounted upon the power shaft, a plate or bar of like material located in proximity thereto, and having a sliding motion on guides and means for magnetically exciting the disc and plate when it is desired to transmit power, substantially as described. 4th. As a means for controlling the application of power, a disc or discs of magnetizable material mounted upon the power shaft, a plate or bar of like material located in proximity and tangentially to the disc and receiving motion therefrom, and means for magnetically exciting the disc and plate when it is desired to transmit power, substantially as described 5th. As a means for transmitting power, a rotating disc or discs of magnetizable material and a plate or bar of like material having a sliding motion on guides, and a reciprocating plate or bar of like material, in such magnetic condition that they are attracted to each other and the one caused to move by movement of the other, substantially as described. 6th. The combination of a telautographic transmitting-pen, a receiving-pen, a motor or other power mechanism for driving the receiving-pen, power transmitting mechanism for conveying power to the receiving-pen, consisting in part of a magnetic-clutch, one member of which is a disc of magnetizable material rotated by the power mechanism, and the other member is a plate or bar of like material located in proximity of the exterior of the disc and connected with the receiving-pen, and means operated through the movement of the transmitting-pen for magnetically exciting said disc and plate to cause movement of the receiving-pen, substantially as described. 7th. As a means for transmitting power to drive the drum of a receiving-pen alternately in opposite directions two pairs of rotating discs of magnetizable material, two reciprocating plates or bars of like material, one placed in proximity to each pairs of discs, connections between the plates and drum whereby the plates may be caused to drive the drum respectively in opposite directions, and means for alternately exciting each pair of discs to cause the power to be transmitted through the corresponding plate, substantially as described. 8th. The combination of a telautographic transmitting pen, a receiving pen, a motor or other power mechanism for driving the receiving pen, power transmitting mechanism for conveying power to the receiving pen consisting in part of two magnetic clutches, one member of each of which is a pair of magnetizable discs rotated from the source of power, and the other mem- a magnetizable reciprocating plate or bar located in proximity to the pair of discs and connected to the receiving pen, and means operated through the movement of the transmitting pen, for alternately) agnetically exciting each pair of discs and its plate for causing the direction of the movement of the receiving pen to be reversed in accordance with reversal in direction of movement of the transmitting pen, substantially as described. 9th. The combination of a telautographic transmitting pen at a transmitting station, a receiving pen at a receiving station, electrical connections between the two stations, mechanism for driving the receiving pen, a part of said mechanism consisting of a magnetic clutch provided with a rotating disc or discs and a reciprocating plate or bar both of magnetizable material, a magnet for controlling the magnetic condition of said clutch, and means whereby the electrical condition of said magnet is controlled from the transmitting station and the movements of the receiving pen thereby effected, substantially as described. 10th. The combination of a motor or other power mechanism, a telautographic receiving pen or other mechanism driven thereby, and a magnetic clutch through which the power of the motor is transmitted to the driven mechanism said clutch consisting of two members, each of magnetizable material, one having a rotary motion and the other reciprocating in the plane of rotatory motion and in a direction perpendicular to a radius of the rotary member, substantially as described. 11. The combination of a telautographic receiving pen, a motor or other power mechanism for driving the receiving pen a reversing mechanism consisting of two magnetically controlled clutches one or the other of which is put into operation according to the direction of motion desired for the receiving pen and an additional mechanism for regulating and limiting the amount of power transmitted to the receiving pen, substantially as described. 12th. The combination of a telautographic receiving pen, a motor or other source of power for driving the receiving pen, a reversing mechanism for reversing the direction of movement imparted to the receiving pen to follow similar changes in the movement of the transmitting pen, and additional mechanism for regulating and limiting the amount of power transmitted to the receiving pen, substantially as described. 13th. The combination of a telautographic receiving pen, a motor or other power mechanism for driving it, and a frictional power regulator between the power mechanism and the receiving pen, substantially as set forth. 14th. The combination of a telautographic receiving pen, a motor or other source of power for putting the same under tension to move in a given direction, an escapement for holding the receiving pen in restraint as against said tension, and a mechanically acting friction clutch for limiting the amount of power applied to the receiving pen, substantially as described. 15th. The combination of a telautographic receiving pen, a motor or other source of power for putting the same under tension to move in a given direction, an escapement for holding the receiving pen in restraint as against said tension, and a frictional power regulator for regulating the amount of power applied to the receiving pen, substantially as described. 16th. The combination of a telautographic receiving pen, a motor or other power mechanism for driving the same, and a regulator for regulating the amount of power applied to the receiving pen consisting of two surfaces in frictional contact, by means of the friction between which the power is transmitted, substantially as described. 17th. In combination with a receiving pen and a motor or other power mechanism for driving the same, a power regulator, the members of which are a plate and cushion in frictional contact, one of said members being driven from the power mechanism and the other connected to the receiving pen to drive the same, and means for holding the plate and cushion one against the other, so that the power is transmitted to the receiving pen by reason of said friction, substantially as described. 18th. The combination of a telautographic transmitting pen at a transmitting station, a receiving pen at a receiving station, electrical connections between the two stations, a motor for driving the receiving pen, means operated through the transmitting pen for sending electrical impulses in line to control the movement of the receiving pen, and two frictional power regulators one for each of two crosswise directions of movement of the receiving pen, whereby a uniform and precisely adjusted application of the power to the receiving-pen is secured, substantially as described. 19th. In a telautograph, the combination of a motor or other source of power, a paper feeding mechanism driven thereby, a magnetic-clutch for transmitting the power of the motor to the feed mechanism, said clutch consisting of two pieces of magnetizable material receiving motion one from the other when magnetically excited, and means for controlling the magnetic condition of the clutch, and thereby the feed of the paper, substantially as described. 20th. The combination of a telautographic receiving-pen, a motor or other power mechanism for driving the same, a paper feeding mechanism, and a magnetically controlled clutch through which the power of the mechanism is transmitted to the paper feeding mechanism, said clutch having two members each of magnetizable material, one member receiving motion from the other by reason of their mutual magnetic attraction, substantially as described. 21st. The combination of a telautographic receiving-pen, a motor or other power mechanism for driving the same, a magnetic-clutch for transmitting power from the power mechanism to the paper feeding mechanism, said clutch consisting of two members each of magnetizable material one being rotated by the power mechanism and the other receiving motion therefrom, and means for controlling the magnetic condition of the clutch from the distant station, and thereby the feed of the papers, substantially as described. 22nd. The combination in a telautograph of a paper shifting mechanism, an electric magnet for controlling the operation thereof, and a circuit breaker for breaking the magnet circuit when

the paper shifter has moved sufficiently the same being operated automatically by the paper shifting mechanism at its extreme point of movement, substantially as described.

No. 45,454. Fog Signal Apparatus.

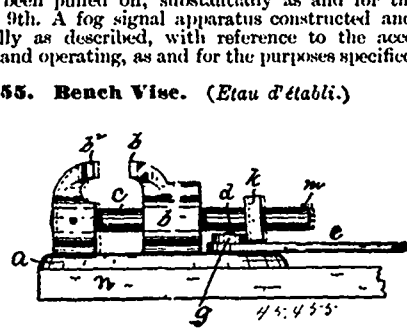
(*Appareil de signal de brume.*)



John George Dixon, 98 Norman Road, Birkly, County of York, England, 3rd March, 1894; 6 years.

Claim.—1st. A fog signal apparatus, having a detonator feeding-arm which can oscillate between the rail and a magazine, said arm being controlled by balance weights and by an inclined bar adapted to be depressed by the wheel of a passing engine or train, for the purpose specified. 2nd. In such apparatus, so providing that the inclined bar is not positively connected to the feeding-arm, for the purpose specified. 3rd. The combination, with the oscillating feeding-arm and the inclined bar, of a dash-pot or air cylinder to prevent the too rapid return of the inclined bar after each depression thereof, substantially as and for the purpose specified. 4th. In combination, with the apparatus claimed in the preceding claiming clause, the groove H^4, in the dash-pot, as and for the purpose specified. 5th. The spring controlled jaw, on the feed-arm, in combination with the means for opening said jaw during the return movement of the arm of the magazine, substantially as and for the purpose specified. 6th. The combination, with the feeding-arm of the magazine and the detonators therein, constructed and arranged, substantially as specified. 7th. The combination, with the feeding-arm, and the inclined bar arranged and operating as above described, of the pulling-off lever connected with the ordinary semaphore signal, and so arranged that it will when operated engage the feeding apparatus when the latter is at the danger position, but not at any other time, substantially as and for the purpose specified. 8th. The combination, with the feeding-arm, the inclined bar, and their connected parts, of the locking-rod R, for locking the feeding-arm when the latter has been pulled off, substantially as and for the purposes specified. 9th. A fog signal apparatus constructed and arranged substantially as described, with reference to the accompanying drawings, and operating, as and for the purposes specified.

No. 45,455. Bench Vise. (*Etau d'établi.*)



Algernon Sidney Hubbell, Norwich, Connecticut, U.S.A., 3rd March, 1894; 6 years.

Claim.—In a vise, fixed and movable jaw, the latter having a rod extending through the support of the fixed jaw, as set forth, a nut loosely mounted upon said rod, and an eccentric adapted to engage and rock the said nut, substantially as and for the purpose specified.

No. 45,456. Dental Clamp.

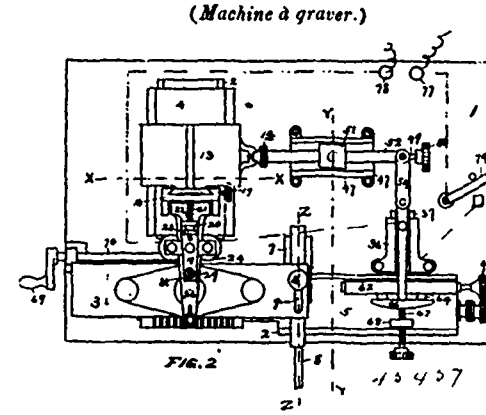
(*Griffe dentaire.*)

Joseph M. Stout, Portland Main, U.S.A., 3rd March, 1894: 6 years.

Claim.—1st. A dental clamp, substantially as herein shown and described. 2nd. A dental clamp, adapted to engage one tooth and a tooth other than the one engaged by the said clamp, substantially as set forth. 3rd. A dental clamp, the same consisting of a yoke-like body, and an extension arm adjustably connected with the body, the said arm terminating in a claw, as and for the purpose set forth. 4th. As an improved article of manufacture, a dental clamp, the same consisting of a yoke-like body, and an extension arm adjustably connected with said body, the said arm terminating in claws, having outward inclination, as and for the purpose set forth. 5th. A dental clamp, the same consisting of a yoke-like spring body, and an extension arm adjustably attached to the body and projecting laterally therefrom, the outer extremity of said arm being at an angle to the body and shaped to embrace the neck of the tooth, as and for the purpose specified. 6th. As an improved article of manufacture, a dental clamp, the same consisting of yoke-like spring body, a locking device carried by the body, and an arm adjustably located between the clamping device and the body, and adapted to be acted upon by the same, the outer extremity of which arm is at an angle to the body and shaped to embrace the neck of a tooth other than that acted upon by the clamp, as and for the purpose specified.

No. 45,457. Engraving Machine.

(*Machine à graver.*)



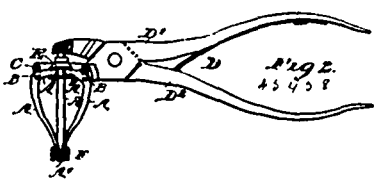
Charles C. Bruckner, Chicago, Illinois, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. In an engraving machine, a work table and a copy slide moving a fixed bed, a pivoting point on each slide and also on the bed, and an operating lever adapted to vibrate about one of said pivots and to slide with respect to the other two pivots. 2nd. In an engraving machine, a lever pivoted to a fixed support and also to two moving slides, means for permitting the lever to slide with respect to two of these pivots, and means for adjusting at least one of said pivots with respect to the length of said lever. 3rd. In an engraving machine, a tool slide and tracing slide, a lever connecting said slides and serving to transmit motion from one to the other, a pivot for said lever, and a screw for adjusting said pivot by small degrees. 4th. In an engraving machine, a screw for imparting transverse motion to an engraving tool, a ratchet wheel secured to said screw, a moving pawl for turning said ratchet wheel, and an adjustable throw-out device adapted to disengage said pawl from said ratchet wheel at a predetermined point. 5th. In an engraving machine, having a cutting tool controlled by an electro-magnet, a lever adapted to vibrate by the movement of a copy under a tracing point on said lever, two adjustable, insulated contact points between which said lever vibrates and against one of which it is normally held, a conducting wire leading from said electro-magnet, and means for connecting said wire to either of said contact points whereby the same pattern may be used for either relief or intaglio engraving, substantially as set forth. 6th. In an electrically controlled engraving machine, a lever adapted to vibrate by the reciprocation of a pattern under a tracing point connected to said lever, two electrical contact points between which said lever vibrates, a conducting wire and means for connecting said wire so that either relief or intaglio engraving may be made from the same pattern. 7th. In an electrical engraving machine, controlled by the vibration of a tracing point in passing over a copy, a pivoted lever supporting said tracing point, two contact points between which said lever vibrates, a conductor, and means whereby shifting the conductor from one contact point to the other will change the machine from relief to intaglio engraving, or vice versa, without changing the pattern. 8th. In an electrical engraving machine, adapted to make either relief or intaglio engraving from a single pattern, means for controlling the operation of the cutting tool by vibration caused by the reciprocation of a pattern under a tracing point, a pattern consisting of a series of character faces clamped together, and a clamp for said pattern, said clamp being operated by a right and left hand screw. 9th. In an engraving machine, a work table and a copy slide moving on a fixed bed, a lever adapted to give synchronous movements of a fixed ratio to said table and slide, a copy, a tracing point and lever therefor,

contact points between which said lever vibrates and means for causing the electrical contact to occur at either of said contact points, substantially as and for the purpose set forth. 10th. In an engraving machine, a work table and copy slide moving on a fixed bed, a lever adapted to give synchronous movements of a fixed ratio to said table and slide, a chuck on said table, said chuck having work holding pins adapted to be screwed below the surface, a copy holding clamp on said copy slide, said clamp being operated by a right and left hand screw. 11th. In an electrical engraving machine controlled by the vibration of a tracing point passing over a copy, a copy consisting of a series of movable type, and a clamp for said type, said clamp consisting of jaws operated by a right and left hand screw, and supported in a block having a bevelled lip adapted to project over the counters of said type. 12th. In an engraving machine, a work table and a copy slide on a fixed bed, an adjustable hand lever for giving the said table and slide synchronous and parallel movements in the same direction of any desired ratio, a tool slide and a tracing slide having movements at right angles to said first movements, a lever mounted on an adjustable pivot for giving the said tool slide and tracing synchronous and parallel movements in opposite directions of any desired ratio, an electrically operated tool mounted on the tool slide and supported above the work table, a tracing point mounted on the tracing slide and held over a copy on the copy slide, and means substantially as described, whereby vibrations of the tracing point in passing over the copy will cause corresponding vibrations of the tool in passing over the work held upon the work table. 13th. In an electrically operated engraving machine adapted to reproduce on a work table the copy held upon a copy slide, devices consisting of adjustable levers for changing the scale of the reproduction as compared to the copy in regard to length or breadth, or both, and an electric connection adapted to be shifted to either of two contact points between which a lever vibrates, for enabling the operator to produce either relief or intaglio engraving from a single copy. 14th. In an electrically operated machine adapted to make an engraved reproduction of a copy, independent adjustable levers for adjusting the length of the reproduction independently of the breadth and the breadth independently of the length, and means for shifting the electrical connections to either of two contact points between which a tracting lever vibrates so as to make the reproduction either in relief or intaglio, as desired from a single copy, substantially as described. 15th. In an engraving machine, a work table and copy slide having synchronous and parallel movements in the same direction in a horizontal plane, a tool slide and a tracing slide having synchronous and parallel movements in the opposite direction and also in a horizontal plane, an engraving tool and a tracing point mounted upon their respective slides and having synchronous and parallel movements in a vertical plane, and means for causing said last mentioned movements to be either in the same or in the opposite directions, substantially as and for the purpose set forth.

No. 45,458. Surgical Instrument.

(*Instrument de chirurgie.*)



Alonzo Cooper Kellogg, Portage, Wisconsin, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. In a surgical instrument, the combination with a support, of pivoted prongs adapted to close at their free ends to receive an elastic band, and means for moving the prongs outward, substantially as described. 2nd. A surgical instrument, comprising a pair of tongs, a series of prongs pivoted on one of the members of the said tongs, and a button held on the other member and connected with the said prongs to open and close the same, substantially as described. 3rd. A surgical instrument, comprising a pair of spring pressed tongs, a ring projecting from the free end of one of the members of the said tongs, a series of prongs pivoted on said ring, each prong having an inwardly extending arm, and a button connected with the said prong arms and pivoted on the other member of the said pair of tongs, substantially as shown and described.

No. 45,459. Tiles, Bricks, &c.

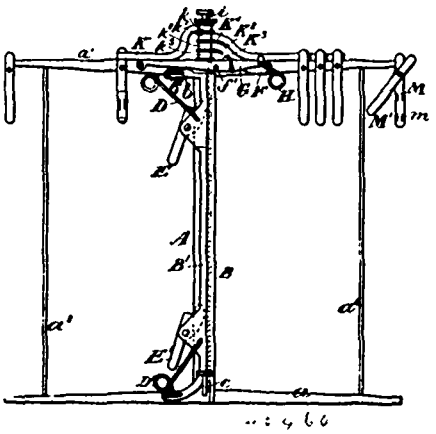
(*Tuiles, briques, etc.*)

William Duxbury, London, England, 3rd March, 1894; 6 years.

Claim.—Glass-faced tiles, bricks, mouldings and other building forms consisting of glass upon which is cast mortar made of brick or slate dust or other suitable powdered waste material mixed with lime, substantially as set forth.

No. 45,460. Turner for Music Leaves.

(*Tourne-feuille de musique.*)

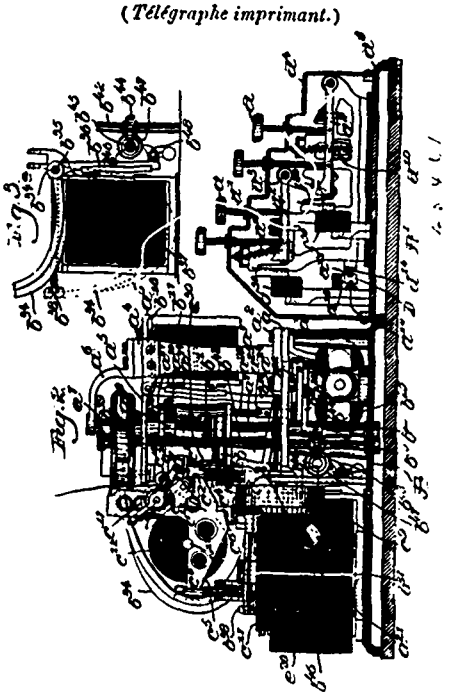


Thomas Douglas, New York, State of New York, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. The music leaf turner, comprising a supporting frame, means for securing the music leaves as a whole to the frame, spring actuated leaf turning arms located at the top of the frame, each provided with means for attaching its free end to the edge of the leaf, escapement mechanism located at the top of the frame and comprising a pivoted lever and a pivoted dog connected to move together and a controlling spring common to the two, for releasing the arms one at a time, and an operating rod extending from the pivoted lever to the foot of the frame for operating the escapement, substantially as set forth. 2nd. The music leaf turner, comprising a supporting frame, clamping jaws for holding the back of the music secured to the frame, one of the jaws being movable toward and away from the other and the opposite jaw, being under-cut, springs for actuating the movable jaw toward the other, a cam lever for forcing the movable jaw and locking it away from the other, leaf turning arms secured to the frame, an arm operating rod located within the said under-cut jaw and means for actuating the rod, substantially as set forth.

No. 45,461. Printing Telegraph.

(*Télégraphe imprimant.*)



Albert David Neal, of Boston, and Howard French Eaton, of Quincy, both of Massachusetts, U.S.A., 3rd March, 1894; 6 years.

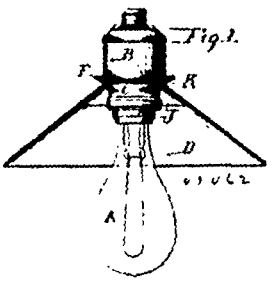
Claim.—1st. In an electro-mechanical typewriting apparatus, a movable character or type carrier, electro-magnets to positively

rotate said carrier in one plane or direction and longitudinally move the same in a different plane or direction and circuit controllers governing the operation of said magnets, substantially as described. 2nd. In an electro-mechanical typewriting apparatus, a character or type carrier, having its characters or type arranged in rows, electro-magnets, character keys and connections whereby movement of the same operates to move said carrier both vertically and horizontally as required to bring any desired character into printing position, substantially as described. 3rd. In an electro-mechanical type-writing apparatus, a character or type-carrier, electro-magnets to move said carrier in different directions and to control the direction or length of movement in one direction, and circuit controllers governing said magnets, substantially as described. 4th. In an electro-mechanical type-writing apparatus, a movable character or type carrier, electro-magnets to positively rotate said carrier in one plane or direction and longitudinally in a different plane or direction, and circuit controllers to govern the operation of said magnets, substantially as described. 5th. In an electro-mechanical typewriting apparatus, a movable character or type carrier, an electro-magnet to move the same in one direction, a second electro-magnet to move it in another direction, and an electro-magnet to control the duration or length of movement in one direction, and circuit controllers to regulate the operation of said magnets, substantially as described. 6th. In an electro-mechanical typewriting apparatus, a revoluble type-carrier provided with a plurality of characters, a positioning-arm to revolve with said carrier, movable stops connected in pairs co-operating with said arm, and electro-magnets to operate said type-carrier and stops, and circuit controllers governing the operation of said magnets, substantially as described. 7th. In an electro mechanical typewriting apparatus, a revoluble type-carrier provided with a plurality of characters, a positioning-arm to revolve with the carrier, movable stops connected in pairs co-operating with said arm, electro-magnets to operate said type-carrier and stops, and circuit controllers governing the operation of said magnets, substantially as described. 8th. In an electro-mechanical type-writing apparatus, a character or type-carrier provided with a plurality of letters or carriers, and electro-magnets to move the same in different directions, a multiplying device for moving the carrier, a striker or hammer, and electro-magnets to operate the said multiplying device, the hammer or striker, and circuit controllers governing the operation of said magnets, substantially as described. 9th. In an electro-mechanical typewriting apparatus, a type-carrier provided with a plurality of characters, a positioning device movable with said type-carrier, and having a stop, and a printing magnet operated by the said arm or the stop, substantially as described. 10th. In an electro-mechanical typewriting apparatus, a type-carrier movable longitudinally on a pivot and provided with characters arranged in rows, a positioning device to move with the carrier, electro-magnets to move the type-carrier longitudinally on the pivot, and to revolve the type-carrier in opposite directions, movable stops operated in pairs by electro-magnets, circuit controllers governing the operation of said magnets, a hammer or striker, and electro-magnet to actuate the same, governed by the electro-magnet actuating the movable stops and by the positioning device, substantially as described. 11th. In an electro-mechanical typewriting apparatus, a type-carrier provided with characters arranged in substantially horizontal and vertical rows, and moved in one direction by a plurality of electro-magnets, and moved in a different direction by electro-magnets, and a positioning device movable with the said type-carrier, stops operated by electro-magnets to co-operate with said device, and a transforming device to control the circuits of the electro-magnets effecting the movements of the type-carrier, substantially as described. 12th. In an electro-mechanical typewriting apparatus, a type-carrier provided with a plurality of characters arranged in rows, a plurality of electro-magnets to elevate said type-carrier different distances, electro-magnets to positively move the type-carrier in a different direction, a positioning device or arm movable with the said type-carrier, and stops or pins to co-operate with said arm or device and electro-magnets to operate the same, and a carriage, an electro-magnet to move the same in a forward direction across the face of the type-carrier, a hammer or striker, an electro-magnet to operate the same, and electro-magnetically governed mechanism to effect the movement of the carriage in a backward direction, substantially as described. 13th. In an electro-mechanical typewriting or printing apparatus, a circuit terminal carrying roll and circuit terminals co-operating with the terminals on said roll and the circuit, terminal disc or support loosely mounted on said roll and adapted to be moved on the roll to vary the position of its terminals with relation to the terminals on the roll, and a contact arm or brush fast to the roll to revolve therewith and co-operating with the circuit terminals of the di c, substantially as described. 14th. In an electro-mechanical type-writing or printing apparatus, a movable type-carrier provided with a plurality of characters, and an electro-magnet to operate the same, means operated by the electro-magnet to produce a multiplied movement of the type-carrier, and a positioning device or arm for said type-carrier, means operated by an electro-magnet to engage the positioning device or arm and stop the movement of the type-carrier, and an electro-magnetically actuating striker or hammer, substantially as described. 15th. In an electro-mechanical type-writing or printing apparatus, a pivotal shaft, a type-carrier longitudinally movable thereon, and an electro-magnet to effect such movement, a second electro-magnet to revolve said carrier, and a positioning arm or device also actuated by said second magnet, circuit controllers for said electro-magnets, and an electro-magnetically operated hammer or striker, substantially as described. 16th. In an electro-mechanical typewriting or printing apparatus, a type-carrier and a movable arm or device, each revoluble in opposite directions, the movement of the said arm in opposite directions being effected by independent electro-magnets, movable stops or pins arranged on opposite sides of the normal position of the movable arm or device to co-operate with it and operated by independent electro-magnets governed in their operation by circuit controllers, substantially as described. 17th. In an electro-mechanical typewriting or printing apparatus, a movable type-carrier provided with a plurality of characters and an electro-magnet to move the same, means operated by said electro-magnet to produce a multiplied movement of the said type-carrier, a hammer or striker operating on the type-carrier, a movable paper-carrying carriage moved across the face of the type-carrier by an electro-magnet, and circuit controllers governing the operation of the electro-magnets, substantially as described. 18th. In an electro-mechanical typewriting or printing apparatus, a movable carrier provided with a plurality of characters, and a positioning arm or device movable with said type-carrier, and stops or pins connected together to be moved simultaneously and co-operating with said positioning arm or device, electro-magnets to operate said stops or pins, and said type-carrier, circuit controllers governing said magnets, substantially as described. 19th. In an electro-mechanical typewriting or printing apparatus, a transmitter consisting of character keys and a plurality of independent circuit controllers composed of stationary and movable circuit terminals, a plurality of movable circuit terminals being operated by each of the said character keys, substantially as described. 20th. In an electro-mechanical type-writing or printing apparatus, a type-carrier provided with a plurality of characters and adapted to be moved by an electro-magnet, and a positioning device movable with the type-carrier, a plurality of stops or pins operated by a plurality of electro-magnets connected to circuit terminals, and a plurality of circuit controllers operated by each, of a series of character keys, whereby the circuit controllers operated by a particular character key depend upon the position of the character or letter on the type-carrier, which corresponds to the said particular key, substantially as described. 21st. In a system of typewriter intercommunication between different points, a character or type-carrier at each point in electro-magnetic connection with and controlled by a series of character keys at each point, and a switch at each point, having a plurality of pens or brushes, and a series of general and special contacts or buttons, the said contacts being electrically connected with the electric connections between the carriers at different points, and means to change the relative positions of the brushes or buttons, whereby manipulation of one of the series of character keys will transmit intelligible messages to one or more of the different points and only a jumble of letters to the other points, substantially as described. 22nd. In a system of typewriter intercommunication between different points, a type-carrier provided with a plurality of characters and adapted to be moved by an electro-magnet, and a positioning device movable with the type-carrier, a plurality of stops or pins operated by a plurality of electro-magnets connected to circuit terminals, and a plurality of circuit controllers operated by each of a series of character keys, whereby the circuit controllers, operated by a particular character key, depend upon the position of the letter or character on the type-carrier which corresponds to the said particular key, and a switch having a plurality of pens or brushes, and a series of general and special contacts or buttons, and means to change the relative positions of the brushes or buttons, and a series of branch wires to connect the different contacts of the general and special series of contacts with the wires, connecting the magnets of the different type-carriers at different stations, substantially as described. 23rd. In a type-writer system of intercommunication, a series of character or type-carriers, each movable in different directions and having the duration or length of movement in one direction, controlled by or through electro-magnets, and circuit controllers governing the magnets, a switch having a plurality of pens or brushes and a series of general and special contacts or buttons, means to change the relative positions of the brushes or buttons, and a series of branch wires to connect the different contacts of the general and special series of contacts with the wires connecting the magnets, of the different type-carriers at different stations, substantially as described. 24th. In a system of type-writer intercommunication between different points, a type-writing machine at each point, having a series of character keys in electro magnetic connection with and controlling the characters, and a switch at each point, having a plurality of pens or brushes and a series of general and special contacts or buttons, the said contacts being electrically connected with the electric connections between the type writing machines at different points, and means to change the relative positions of the brushes or buttons, whereby manipulation of one of the series of character keys will transmit intelligible messages to one or more of the different points and only a jumble of letters to the other points, substantially as described. 25th. In an electro-mechanical type-writer system of intercommunication, a series of type-writers having electro-magnets to determine the selection of the different letters or characters, the electro magnets of one instrument being connected in circuit with corresponding electro magnets of other typewriters of the series, and combination or individualizing switches for con-

necting two or more of the typewriters to thereby transmit a special message to the exclusion of the other typewriters of the series, substantially as described.

No. 45,462. Shade for Incandescent Lamps.

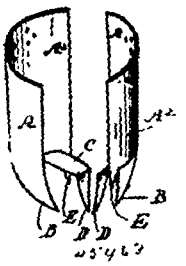
(*Abat-jour pour lampes à incandescence*)



Edward Dean Cooke, Chicago, Illinois, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. A lamp shade made and constructed in the way shown and described and for the purposes specified herein. 2nd. A shade for incandescent lamps consisting of a single piece of sheet metal with unbroken periphery shaped from a blank in to the form of a shade with a flat middle and upper portion with securing fingers cut and formed from the flat sheet metal at its middle, and at the upper end of the shade, and fingers adapted to securely and firmly grip the socket as shown in the drawing and described. 3rd. The process of manufacturing shades for incandescent lamps, which consists in stamping out a piece of sheet metal of suitable shape then burnishing or polishing the same, then shaping the same by successive shaping processes, leaving a flat central portion, then cutting out of such flat central portion suitable securing fingers, as described. 4th. The combination of a lamp shade having downwardly and inwardly projecting spring fingers with a socket having a portion over which the fingers pass, and against which they then bear, as shown and described. 5th. A lamp shade having an expansible upper aperture with supporting fingers projecting therefrom, and adapted to permit the shade to be slipped onto the socket, and then to retain it in position, as shown and described. 6th. A lamp shade consisting of a shade body with an upper portion having an inner metallic portion with outer spring fingers bent thereupon so as to hold the body between such portion and fingers, and inner and downwardly projecting spring fingers on such portion to hold the shade to the socket, and upwardly and outwardly projecting fingers which bear against the side of the socket, in combination with a lamp having a removable annular projection against which such inner fingers bear when the shade is in position.

No. 45,463. Earth Auger. (*Sonde à trépan.*)



Charles G. Schellenberger, Streater, Illinois, U.S.A., 3rd March, 1894; 6 years.

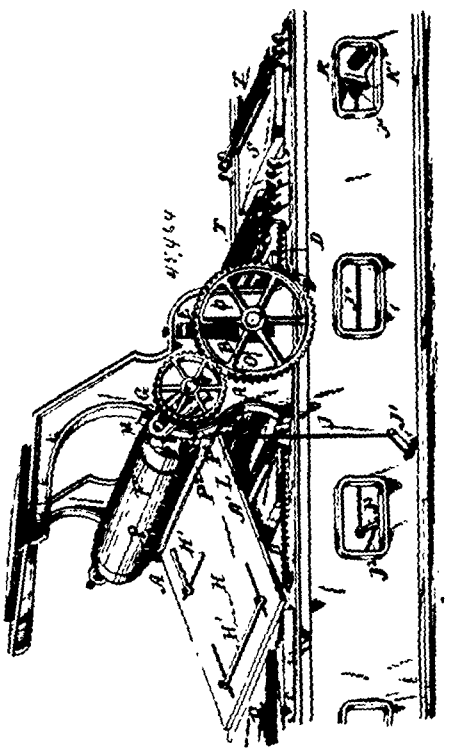
Claim.—1st. An earth auger provided with two or four blades riveted to a bail H, provided with a handle or rod F, substantially as shown and described 2nd. An earth auger with more than four cutters B, for downward cutting, also with flat cutters C, and a circle cutter E, and a centreing cutter B, substantially as shown and described. 3rd. An earth auger made of side blades with downward cutters B and E and a flat centre cutter C, fastened to the rod F, and held in position by a screw or pin of rivet J, and tip K, engaging in slot L, substantially as shown and described.

No. 45,464. Printing Machinery.

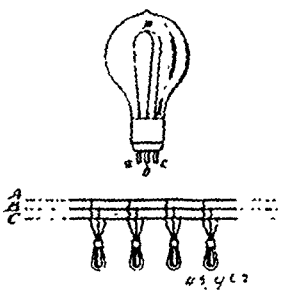
(*Presse d'imprimerie.*)

Samuel Lyndhurst Parker, St. Kilda, Victoria, Australia, 3rd March, 1894; 6 years.

Claim.—1st. In printing machinery and process in connection therewith, the process of printing on unyielding substances, such as sheets of metal, glass or like material by the medium of a sheet of india-rubber, or analogous elastic material, which takes up the inked design from a stone, type or dye and transfers same on to the desired material under pressure, substantially as described. 2nd. In printing machinery and processes in connection therewith, the process of printing on tin, glass or like unyielding material, which consists in coating a cylinder with india-rubber, or analogous elastic material, to receive an imprint from an inked design and transferring said print on to the material by means of pressure on said material from a second cylinder coated with elastic material. 3rd. In printing machinery, the combination of a cylinder, as A, having a coating of india-rubber, or analogous elastic material, and an adjustable spring to regulate the pressure when taking up the inked design with a second cylinder similarly coated and having an adjustable spring to regulate its pressure against the material whilst the latter receives the imprint from the first roller, substantially as described.



No. 45,465. System for Operating Glow Lamps by Means of Multiphase Currents. (*Système pour actionner les lampes à incandescence au moyen de courants multiphases.*)

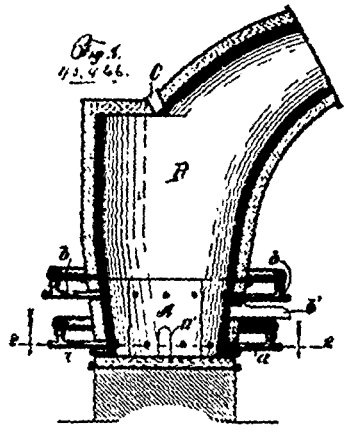


Johannes Heinrich Friedrich Görges, Berlin, Germany, 3rd March, 1894; 6 years.

Claim.—1st. A system for operating glow lamps by means of multiphase currents, which consists in a number of rotation current conductors corresponding to the number of phases of the current, any desired number of glow-lamps, a number of current introducers to each lamp equal to the number of said conductors and connected to the said conductors and glow bodies at the interior of the lamp electrically connected to each other and to pairs of the said current introducers, substantially as described. 2nd. In a system for operating glow lamps by means of multiphase currents, the combination, with a multiphase dynamo, of a number of rotation current conductors deriving their electricity from the terminals of the said dynamo, any desired number of glow lamps connected to the said

conductors and having a number of leading-in wires corresponding to that of the said rotation current conductors, with glow bodies at the interior of the lamp electrically connected to each other and connecting the said leading-in wires in series, substantially as described. 3rd. A system for operating glow lamps by means of three-phase currents, which consists in three rotation-current conductors, any desired number of glow lamps, a current introducer from each of said conductors electrically connected to each lamp, and three glow bodies at the interior of the lamp electrically connected to each other and to the said current introducers, substantially as described. 4th. A system for operating glow lamps by means of three phase currents, which consists in three rotation-current conductors, any desired number of glow lamps, a leading-in wire from each of said conductors to each lamp, and three filaments connecting the three leading-in wires with each other in series, substantially as described. 5th. A system for operating glow lamps by means of three-phase currents, which consists in three rotation current conductors, any desired number of glow lamps, a leading-in wire from each of said conductors to each lamp, and three filaments of equal length, each connected at one end to one of said leading-in wires and connected at the other to the ends of the other two filaments, substantially as described.

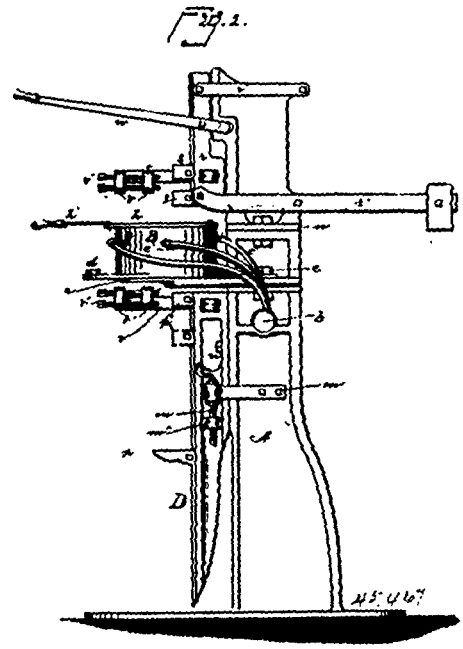
No. 45,466. Process and Mechanism for Smelting Ores and Refining Metals. (*Procédé et mécanisme de fusion des minerais et de raffinage des métaux.*)



Charles Maurice Allen, Butte City, Montana, U.S.A., 3rd March, 1894; 6 years.

Claim.—1st. The process of smelting ores, which consists in subjecting them to a blast heated by passing through molten metal or matte in a furnace or convertor, and checking or stopping the blast by plugging the tuyers to permit slag, matte and metal to separate in the convertor, substantially as described. 2nd. The process of smelting ores and refining metals, which consists in melting ores in a furnace or convertor, forcing a blast through the molten material, checking or stopping the blast by plugging the tuyers to permit slag, matte and metal to separate in the convertor, and tapping the slag, matte and metal from the convertor separately and at different heights, substantially as described. 3rd. The process of smelting ores and refining metals, which consists in feeding raw sulphides into a furnace or convertor, subjecting them to a blast heated by through molten material, checking or stopping the blast by plugging the tuyers to permit slag, matte and metal to separate in the convertor separately and at different heights, and retaining sufficient molten material after each tap to ignite the next charge, substantially as described. 4th. In combination with an apparatus for treating ores or molten material and provided with tuyers for the introduction of a blast, plugs for closing the tuyers formed of the material to be treated and adapted to be driven in to open the tuyers, substantially as described. 5th. A tuyer for convertors or blast furnaces provided with a magazine for holding plugs, and a trough or support for guiding plugs into the opening of the tuyer, substantially as described. 6th. A tuyer for convertors or blast furnaces provided with a magazine for holding plugs, a trough or support for guiding plugs into the opening of the tuyer, and means for holding the plug in the opening, the magazine being provided with valved openings, substantially as described. 7th. A tuyer for convertors or blast furnaces provided with a magazine for holding plugs, a trough or support below the magazine for guiding plugs into the opening in the tuyer, and a rod for holding the plug in the opening and driving it into the convertor, the magazine being provided with valved openings, substantially as described. 8th. In combination with an apparatus for treating ores or molten material, a bottom water jacket comprising an upper and a lower plate separated by thimbles on the tops of which the upper plate rests, 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 a 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 and steam from immediately below the upper plate, substantially as described. 11th. In combination with an apparatus for treating ores or molten material, a bottom water jacket inserted from below, and to be surrounded by the lower edges of the side water jackets, substantially as described.

No. 45,467. Welding Apparatus. (*Appareil à souder.*)

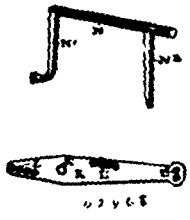


Charles E. Laye and John A. Prosa, both of Syracuse, New York, U.S.A., 5th March, 1894; 6 years.

Claim.—1st. The combination with the standard and the horizontal table thereon, of a furnace consisting of segments independently pivoted to and resting upon the table, and each provided with a forward arm, and means to lock the arms together when the segments are closed. 2nd. The combination with the standard and the table thereon, of a furnace consisting of segments pivotally mounted upon the table, and a cover perforated centrally and pivoted upon the furnace. 3rd. The combination with the standard, the table thereon and the furnace consisting of segments independently pivoted upon the table, of a vertically movable work-holder above the furnace, and a vertically movable slide below the furnace, clamps upon said holder and slide and means to operate them vertically. 4th. The combination with the standard, the table thereon and the furnace consisting of segments independently pivoted upon the table, of a vertically movable work-holder above the furnace, a vertically movable slide below the furnace, and means to operate them vertically, and the swinging clamps pivoted upon said work-holder and slide and provided with jaws, and means to hold the bars therein. 5th. The combination with the standard and the furnace supported thereby, of vertically adjustable jaws and laterally swinging clamps independently connected to the standard in sets, one above and the other below the furnace, said clamps being provided with means to grip the bar in the jaws. 6th. The combination with the standard, the table thereon, and the furnace consisting of segments independently pivoted upon the table, of a vertically movable work-holder above the furnace, a vertically movable slide below the furnace, and means to operate them independently and a main pipe leading to sources of air and gas supply, supported by said standard, and flexible branch pipes leading therefrom and connected to the furnace segments. 7th. The combination with the standard, the table thereon, and a furnace composed of segments independently pivoted upon said table, of a main pipe leading to sources of air and gas supply, and flexible pipes leading therefrom and connected to said furnace segments. 8th. The combination with the standard, the table thereon, and a furnace composed of segments pivotally mounted upon said table, of a main pipe leading to sources of air and gas supply, flexible pipes connecting said furnace segments to said main pipe, and a cover pivotally mounted upon said furnace, and provided with a central opening of less diameter than that of the furnace.

9th. The combination with the standard, the table thereon, the furnace composed of segments pivoted thereon, the main pipes leading to a source of air and gas supply, the flexible pipes leading therefrom to said furnace, of vertically adjustable slides mounted upon the standard, vertically adjustable jaws mounted upon the slides, and swinging clamps pivoted upon the slides. 10th. The combination with the furnace and the standard, of the slide connected thereto, the counterbalance connected to both, grip jaws upon the slide, and a lever adapted to depress said slide. 11th. The combination with the furnace and the standard, of the slide connected thereto, the counterbalance connected to both, grip jaws upon the slide, swinging clamps pivoted upon the slide, and a lever adapted to depress said slide. 12th. The combination with the standard and the table thereon, of a furnace composed of segments independently pivoted thereon, and piping leading therefrom to sources of air and gas. 13th. The combination with a furnace composed of segments independently pivoted upon the supporting table and means to support it, of swinging grip clamps above and below it, and normally in line with the centre thereof, and jaws movably secured to the furnace support. 14th. In a welding machine, the combination of a standard in two sections, a furnace carried by the standard, independent work-holding devices for each section, and means for adjustment between the two sections with reference to the alignment of the bars to be welded. 15th. In a welding machine, a standard supporting a laterally adjustable furnace support, a furnace supported thereby and a vertically adjustable work-holder, in combination with a superimposed standard, provided with a vertically movable work-holder, and means for lateral adjustment between both sections of said standard.

No. 45,468. Car Brake. (*Frein de chars.*)



Marcus E. Ellsworth, Hudson, Ohio, U.S.A., 5th March, 1894; 6 years.

Claim.—1st. In a railway car brake, a shaft having two integral arms, one of said arms terminating in an ear, a lever centrally pivoted beneath a car and provided with an opening, in combination with a series of rods or chains, brake-bars and shoes and an actuating lever or brake-rods, in the manner substantially as and for the purpose set forth. 2nd. A perforated lever centrally pivoted beneath a car, and a series of rods or chains in combination with an actuating lever or brake-rod, a double armed shaft attached to said car and a series of brake-bars and shoes, in the manner substantially as and for the purpose set forth. 3rd. The combination in a railway car brake, of one or more double armed shafts connected by a series of rods or chains, with one or more perforated levers, said perforated levers connected by a series of rods or chains, with the brake-bars and actuating lever or brake-rod of one or more cars, in the manner substantially as and for the purpose set forth.

No. 45,469. Liquid Dispensing Apparatus.
(*Appareil pour la distribution des liquides.*)

Fig. 1

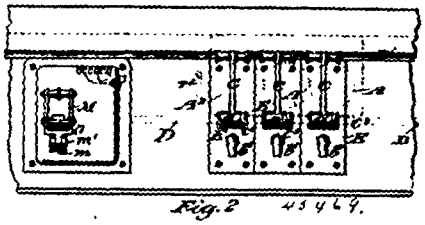
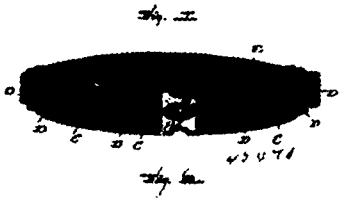


Fig. 2 45469.

William M. Fowler, New York City, New York, U.S.A., 5th March, 1894; 6 years.

Claim.—1st. In combination, one or more dispensing mechanisms, a recording device and a registering device, the recording device being under the control of the dispensing mechanism to determine the price to be recorded for a single transaction and the registering device being simultaneously under the control of the dispensing mechanism to determine the sum total of a plurality of transactions, substantially as set forth. 2nd. In combination, one or more dispensing mechanisms, a recording device, a registering device and a common connection between the dispensing mechanisms and the recording and registering devices, whereby the operation of the dispensing mechanisms serves to determine the price to be recorded for that operation and registers the price either alone or in connection with other operations, substantially as set forth. 3rd. In combination, a dispensing mechanism, a recording mechanism, a shaft connecting the two and a variable connection between the said shaft and the dispensing mechanism whereby the shaft may be rotated more or less while the quantity of liquid dispensed remains constant, substantially as set forth. 4th. In combination, a dispensing mechanism, a recording mechanism, a shaft connecting the two, an operating lever for the recording mechanism and an impression device, the recording mechanism being under the control of the dispensing mechanism to determine the amount to be recorded and the impression device being under the control of said operating lever to make the record, substantially as set forth. 5th. The dispensing mechanism, comprising the measuring receptacle, means for supplying liquid thereto, means for withdrawing the liquid therefrom and a sliding piston within the measuring receptacle, the interior portions of the receptacle upon both sides of the piston being in permanent communication with each other, substantially as set forth. 6th. The combination, with the shaft and the dispensing operating mechanism for controlling the movements of the shaft of a printing wheel having an interrupted connection with the shaft and means for controlling the connection of the printing wheel with the shaft, substantially as set forth. 7th. The combination, with the shaft and means for rotating it, of a spring actuated printing wheel having an interrupted engagement with the shaft, an impression device, means for moving the impression device toward and away from the printing wheel, and a key under the control of the impression device and its operating means to throw the printing wheel into engagement with the shaft, substantially as set forth. 8th. The combination, with a dispensing device, the shaft and means for rotating the shaft, of a printing wheel having an interrupted engagement with the shaft, an impression device, means for moving the impression device toward and away from the printing wheel, a tape supply roller carried by the frame of the impression device, tape feed mechanism and means for interrupting the feed during a portion of the movement of the impression device, substantially as set forth. 9th. The combination, with a dispensing device, the printing wheel and means for operating it, of the impression device supported in a reciprocating frame, a tape supply roller, a tape conduit on the frame, tape feed mechanism, a cutter carried by the frame, a stop carried by the frame to temporarily lock the printing wheel, and means for operating the frame and thereby securing an impression, feeding the tape and severing the printed portion, substantially as set forth. 10th. In combination, several dispensing mechanisms each provided with its own operating lever, locking mechanism in position to prevent the simultaneous movement of two operating levers, the connection between the locking device and the levers being such that a second lever may be operated as soon as the preceding lever has completed its advance stroke, substantially as set forth.

No. 45,470. Woven Cartridge Belt.
(*Cartouchière tissée.*)



Thomas Corwin Orndorff, Worcester, Massachusetts, U.S.A., 5th March, 1894; 6 years.

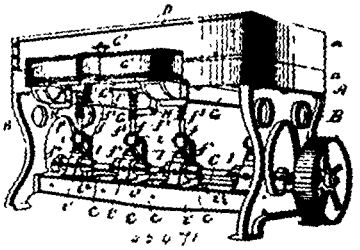
Claim.—1st. A woven cartridge belt, having two layers of pockets or thimbles woven in one therewith, the pockets of the outer layer alternating with those of the layer next to the body of the belt, and being carried by tongues extending outwardly between the pockets of the latter layer, as and for the purposes hereinbefore set forth. 2nd. A woven cartridge belt, having two layers of pockets or thimbles woven in one therewith, the pockets of the outer layer being carried by and formed in one with tongues projecting outwardly between the pockets of the inner layer and consisting each of two plies or thickness of fabric, jointed at their outer extremities by auxiliary binding warps which are omitted from the fabric of the outer pockets, as and for the purposes hereinbefore set forth. 3rd. A woven cartridge belt, having two layers of pockets or thimbles woven in one therewith, the pockets of the outer layer being completed by binding warps which enter into the fabric of the belt, but are omitted from the fabric of which the body of the outer pockets is composed, substantially as and for the purposes hereinbefore set forth.

No. 45,471. Strainer. (*Couloir.*)

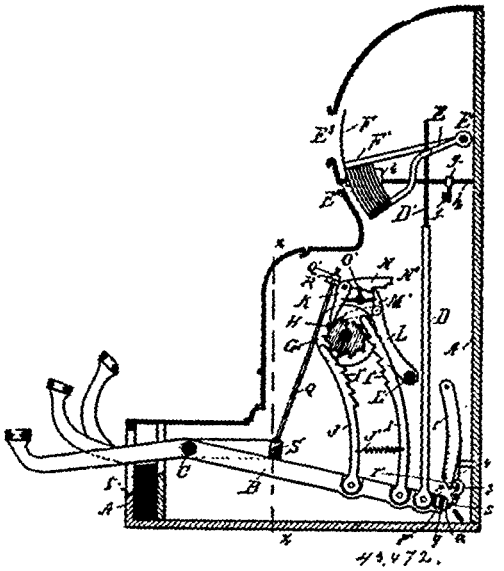
Darwin Bryant Gotham, Brownville, New York, U.S.A., 5th March, 1894; 6 years.

Claim.—1st. In a strainer, the combination of a normally stationary chamber D for receiving the unstrained material provided with

a perforated wall *d* through which the material is strained, a stationary suction-chamber E at one side of said perforated wall, a rectilinearly moving plunger F for producing a suction in the suction-chamber provided with a plunger rod *f*, a cam J for engaging the plunger rod, and forcing the plunger towards the perforated wall, said cam being unconnected with the plunger rod for permitting the plunger to return independently of the cam, and a spring H for returning the plunger rod and engaging the same with the cam, substantially as and for the purpose described. 2nd. In a strainer, the combination of a normally stationary chamber D for receiving the unstrained material provided with a perforated wall *d* through which the material is strained, a stationary suction-chamber E at one side of said perforated wall, a rectilinearly moving plunger F for producing a suction in the suction-chamber provided with a plunger rod *f*, a wearing piece f^2 removably secured to the plunger rod, a cam J for engaging the plunger rod and forcing the plunger towards the perforated wall, said cam being unconnected with the plunger rod for permitting the plunger to return independently of the cam, and a spring H for returning the plunger rod and engaging the same with the cam, substantially as and for the purpose specified. 3rd. In a strainer, the combination of a normally stationary chamber D for receiving the unstrained material provided with a perforated wall *d* through which the material is strained, a stationary suction-chamber E at one side of said perforated wall, a rectilinearly moving plunger F for producing a suction in the suction-chamber, provided with a plunger rod *f*, a cam J for engaging the plunger rod and forcing the plunger towards the perforated wall, said cam being unconnected with the plunger rod for permitting the plunger to return independently of the cam, a spring H for returning the plunger rod and engaging the same with the cam, and a movable shoulder f^2 upon the plunger rod forming an adjustable bearing for one end of the spring, substantially as and for the purpose set forth. 4th. In a strainer, the combination of a normally stationary chamber D for receiving the unstrained material provided with a perforated wall *d* through which the material is strained, a stationary suction-chamber E at one side of said perforated wall, a rectilinearly moving plunger F for producing a suction in the suction-chamber provided with a plunger rod *f*, a bracket I formed with a bearing *i* for the plunger rod having its lower end arranged above the lower end of the plunger rod, said bracket being provided with a bearing i^2 arranged beneath and at an angle with the former bearing, and a shaft I^3 journalled in the latter bearing and provided with a cam J for engaging the lower end of the plunger rod and operating the plunger, substantially as and for the purpose set forth. 5th. In a strainer, the combination of a chamber D for receiving the unstrained material provided with a perforated wall *d* through which the material is strained, a stationary suction-chamber E at one side of said perforated wall, a downwardly extending outlet passage e^1 opening from the suction-chamber, an outlet chamber G arranged beneath the outlet passage and opening therefrom, said outlet passage and outlet chamber being of greater combined depth than the depth of the suction-chamber and a plunger F for producing a suction within the suction-chamber, substantially as and for the purpose described. 6th. In a strainer, the combination of a normally stationary chamber D for receiving the unstrained material provided with a perforated wall *d* through which the material is strained, stationary suction-chambers E each arranged at one side of the perforated wall, a downwardly extending outlet passage e^1 opening from each suction-chamber, an outlet chamber G, arranged beneath each pair of the outlet passages and opening therefrom and having one end thereof extending beyond the corresponding wall of the adjacent suction-chamber, and provided with an outlet opening *g*, said outlet chamber and one of the outlet passages opening thereinto being formed of greater combined depth than the depth of the suction-chamber connected to said outlet passage, an upper outlet chamber G^1, arranged above the former outlet chambers, and having its opposite ends provided with inlet openings g^1, registered with the outlet opening *g* in the ends of the former outlet chambers, substantially as and for the purpose specified. 7th. In a strainer, the combination of a normally stationary chamber D for receiving the unrestrained material provided with a perforated wall *d* through which the material is strained, stationary suction-chambers E, each arranged at one side of the perforated wall, a downwardly extending outlet passage e^1 opening from each suction-chamber, an outlet chamber G, arranged beneath each pair of the outlet passages and opening therefrom, and having one end thereof extending beyond the corresponding wall of the adjacent suction-chamber, an upper outlet chamber G^1, arranged above the former outlet chamber and opening therefrom, and provided with an outlet nipple G^2, a sleeve G^3, movable within the nipple G^2, and provided with a screw-threaded rod G^5, a support G^6, on the chamber G^2, through which the rod G^5 passes, and an adjusting nut G^7, on said rod above the support G^6, substantially as and for the purpose described.



No. 43,472. Cash Register. (*Registre de monnaie.*)

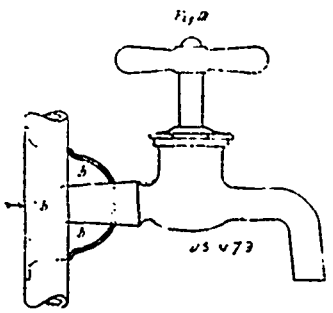


Joseph Augustus Treat, Stuart, Iowa, U.S.A., 5th March, 1894; 6 years.

Claim.—1st. In a registering machine, the combination with a registering-wheel, and a series of keys for actuating the same, of two actuating arms pivoted to said keys extending upon opposite sides of the register-wheel, substantially as described. 2nd. In a registering machine, the combination with a registering-wheel, and a series of keys for actuating the same, of two coupled actuating arms pivoted to said key, extending upon opposite sides of the register-wheel, substantially as described. 3rd. In a registering machine, the combination with a registering-wheel, and a series of keys for actuating the same, of two actuating arms pivoted to said keys extending upon opposite sides thereof, and a spring coupling said arms together, substantially as described. 4th. In a registering machine, the combination with a series of keys, a series of register actuating arms on said keys, a registering-wheel adapted to be differently moved by each key, and a second arm on the key, forming a guide for the register actuating arm, substantially as described. 5th. In a registering machine, the combination with a series of keys, a series of register actuating arms on said keys having racks thereon, a register-wheel with which said racks engage in the forward movement of the key lever, and a second series of arms on said keys having racks adapted to actuate said register-wheel in the return movement of the key, substantially as described. 6th. In a registering machine, the combination with a registering-wheel, and a series of keys for actuating the same, part of the actuation being effected on the forward movement, and part on the return movement thereof, substantially as described. 7th. In a registering mechanism, the combination with the register-wheel, a carrying motor set from the register-wheel, and released by the actuating mechanism, substantially as described. 8th. In a registering mechanism, the combination with the register-wheels, and a series of keys for actuating the same, of a carrying motor set from the register-wheel, and released upon the operation of any key, substantially as described. 9th. In a registering mechanism, the combination with the register-wheels, and a series of keys for actuating the same, of a carrying motor set from a register-wheel to actuate the wheel of next higher denomination, a latch for holding the motor inoperative during the movement of the wheels, and means for releasing the latch after the completion of such movement, substantially as described. 10th. In a cash register, the combination with the register-wheels, and the keys adapted to actuate the wheels proportionate to their value, of a carrying motor normally inoperative set by the register-wheels, a latch for holding it in its operative position during the forward movement of the wheel, and a connection from the keys to said latch to release the same upon the return of the key to its initial position, substantially as described. 11th. In a cash register, the combination with the register-wheel, the keys adapted to actuate the wheels proportioned to their value, a carrying device set by the wheel of lower denomination to actuate the wheel of next higher denomination, and consisting of the arm P, pawl M, latch N, spring O, and means for tripping said latch, substantially as described. 12th. In a cash register, the

combination with the register-wheels, the keys adapted to actuate wheels proportioned to their value, a carrying device set by the wheel of lower denomination to actuate the wheel of next higher denomination and consisting of the arm L, the cam-shaped face P, the pin P^1, the pawl M, finger M^1, latch N, spring O, and a tripping mechanism actuated from a universal bar above the keys, substantially as described. 13th. In a cash register, the combination with a series of keys and a series of tablets actuated thereby, of a movable cipher sign normally exposed to view and adapted to be carried out of sight upon the actuation of any key, substantially as described. 14th. In a cash indicator, the combination with a series of keys and a series of tablets actuated thereby, of a slotted casing through which said tablets are adapted to be exhibted, a cipher sign normally exhibited through said aperture resting upon the top of said tablets, whereby upon the actuation of any of said tablets the cipher sign is removed, substantially as described. 15th. In a cash register, the combination with a series of keys, a series of tablet actuating rods pivoted thereto, the arms E actuated by said rods and journalled upon a common bar E^1, of the tablets E^2 at the ends of said bars, substantially as described. 16th. In a cash register, the combination with the keys arranged in groups, of a universal bar extending across said keys and carried thereby, of interlocking faces on the bar and keys, and means for coupling the operated keys together by said bar, substantially as described. 17th. In a cash register, the combination of a series of keys, of the bar *a* carried by the keys, having a notched face, corresponding notches in the ends of the keys, the finger *c* and cam *o*, substantially as described. 18th. In a cash register, the combination of a series of keys, a coupling device therefor, and a lock for the unoperated keys actuated by said coupling device, substantially as described. 19th. In a cash register, the combination of the bar *a*, the lever s^1, having a bar extending across all the keys, the cam r^1, the parts combined and operating substantially as and for the purpose described. 20th. In a cash register, the combination with a series of groups of tablets, and a series of keys for actuating the same, of a latch for each group of tablets, a connecting bar for said latches and mechanism connected with the keys for tripping said latches upon the operation of any key, substantially as described. 21st. In a cash register, the combination with a series of tablets and a series of keys for operating the same, arranged in groups, a shoulder on said tablets, latches for engaging with said shoulder, and mechanism connected with the keys for tripping said latches, substantially as described. 22nd. In a cash register, the combination with a series of tablets and a series of keys for actuating the same, of the latch bar *f*, latches *i*, bell-crank lever *k*, the rods *c* having the head *d* the inclined bearing *e* and the spring *j*, the parts arranged and operating, substantially as described. 23rd. In a cash register, the combination with a series of keys, of a device for preventing the simultaneous operation of two keys, comprising a series of plates, one forming a lock for each key, and means for locking all the plates of the inoperated keys upon the operation of a key, substantially as described. 24th. In a cash register, the combination with a series of keys, of a device for preventing the simultaneous operation of two keys, comprising a series of plates each plate having slots in line with all the keys but one, an inclined bearing beneath such key, a slot at the base of said bearing all so constructed that the movement of one key will lock all the plates, substantially as described. 25th. In a cash register, the combination with a series of keys, and a series of tablets actuated thereby, of a movable cipher sign, and a shield for said cipher sign actuated by the keys to expose the cipher sign upon the indication of any figure of higher denomination, substantially as described. 26th. In a cash register, the combination with a series of keys of a device for preventing the simultaneous operation of two keys comprising a series of plates, one forming a lock for each key, means for locking all the plates of the unoperated keys upon the operation of a single key, and a spring to return said plates to their normal position, substantially as described.

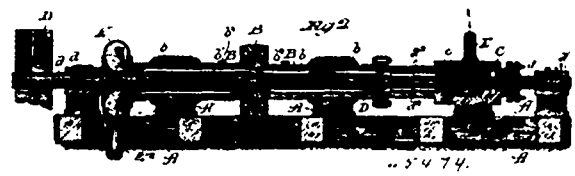
No. 45,473. Faucet Tag. (*Talon de robinet.*)



Esdras Rousseau, Montreal, Quebec, Canada, 6 mars 1894; 6 ans.

Résumé. Un talon de robinet de forme concave-convexe ayant une ouverture O pour recevoir le robinet, deux encoches N, V, s'adaptant au tuyau et des trous d'assujettissement, *m*, *m*, *m*, *m*, le tout tel que décrit et montré sur les dessins.

No. 45,474. Centrifugal Amalgamator.
(*Machine à amalgamer centrifuge.*)



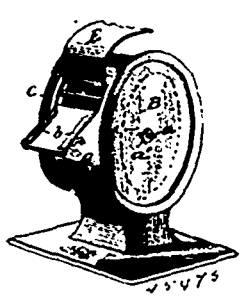
Orrin Burton Peck, Chicago, Illinois, U.S.A., 6th March, 1894; 6 years.

Claim.—1st. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for forcing material through the channel or channels, and means for stirring and distributing the material under treatment, substantially as described. 2nd. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for forcing material through the channel or channels, and means for stirring and distributing the material under treatment rotatable independently of the rotatable vessel, substantially as described. 3rd. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for stirring and distributing the material under treatment, and means for deflecting or guiding the material into proximity to the mercury, substantially as described. 4th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for stirring and distributing the material under treatment rotatable independently of the rotatable vessel, and means for deflecting or guiding the material into proximity to the mercury, substantially as described. 5th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, and means for mechanically forcing material through the channel or channels, substantially as described. 6th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, and means for mechanically forcing material through the channel or channels rotatable independently of the rotatable vessel, substantially as described. 7th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for mechanically forcing material through the channel or channels, and means for deflecting or guiding the material through the channel or channels, substantially as described. 8th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for mechanically forcing material through the channel or channels rotatable independently of the rotatable vessel, means for deflecting or guiding the material into proximity to the mercury, and means for stirring and distributing the material under treatment rotatable independently of the rotatable vessel, substantially as described. 9th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions, adapted to receive and contain mercury during the rotation of the vessel and rotatable, obliquely arranged screws or blades for mechanically forcing material through the channel or channels, substantially as described. 10th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, means for mechanically forcing material through the channel or channels, and means for stirring and distributing the material under treatment, substantially as described. 11th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, means for mechanically forcing material through the channel or channels, means for deflecting or guiding the material into proximity to the mercury, and means for stirring and distributing the material under treatment, substantially as described. 12th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, means for mechanically forcing material through the channel or channels, means for deflecting or guiding the material into proximity to the mercury, and

means for stirring and distributing the material under treatment rotatable independently of the rotatable vessel, substantially as described. 13th. In a centrifugal amalgamator, the combination of rotatable cylinders, one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, means for conveying material through the channel or channels, and means for stirring and distributing the material under treatment, substantially as described. 14th. In a centrifugal amalgamator, the combination of rotatable cylinders, one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, means for conveying material through the channel or channels, means for stirring and distributing the material under treatment, and means for mechanically forcing the material through the channel or channels, substantially as described. 15th. In a centrifugal amalgamator, the combination of rotatable cylinders, one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, each of said cylinders being rotatable independently of the other, substantially as described. 16th. In a centrifugal amalgamator, the combination of rotatable cylinders, one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, and rotatable obliquely arranged screws or blades for mechanically forcing material through the channel or channels, substantially as described. 17th. In a centrifugal amalgamator, the combination of rotatable cylinders, one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, at least one of the cylinders being provided with ribs, corrugations or projections on its surface for stirring and distributing the material under treatment, substantially as described. 18th. In a centrifugal amalgamator, the combination of rotatable cylinders one within the other, provided with a channel or channels containing chambers or depressions adapted to receive and contain mercury during the rotation of the vessel, and means for causing water to circulate repeatedly through the channels or passages, substantially as described. 19th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, and a non-rotatable pipe or conduit communicating with the vessel for supplying water and material under pressure thereto, substantially as described. 20th. In a centrifugal amalgamator, a rotatable vessel provided with a channel or channels containing chambers or depressions adapted to receive and retain mercury the more securely the greater the amount of centrifugal force developed, means for deflecting and guiding the material along the surface of the mercury in the vessel, and a non-rotatable pipe or conduit communicating with the vessel in a substantially water-tight manner for supplying water and material under pressure thereto, substantially as described. 21st. In a centrifugal amalgamator, the combination of two rotatable cylinders, one within the other, with a channel or passage between them adapted to receive and contain mercury during the rotation of the outer cylinder, and a supply pipe or conduit non-rotatably connected with one of the cylinders in a substantially water-tight manner, for supplying water and material under pressure to the channel or passage, substantially as described.

No. 45,475. Paper Weight and Calendar Combined.

(*Pesée pour papier et calendrier combinés.*)

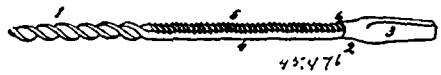


Austin D. Palmer, Coshocton, Ohio, U.S.A., 6th March, 1894; 6 years.

Claim.—1st. In a combined paper weight and calendar, a hollow base having secured thereto a cylinder provided with an opening, and a flap or apron extending out from said opening, and provided with guide strips, substantially as shown and described. 2nd. In a combined paper weight and calendar, a heavy base having secured thereto a cylinder provided with an opening, a rod across said opening and flap or apron, extending out from said opening and provided with guide strips, substantially as shown and described. 3rd. In a combined paper weight and calendar, a heavy base having secured thereto a cylinder provided with an opening, a rod across said opening and a flap or apron extending out from said opening and provided with guide strips, and said flap inclined downwards, substantially as shown and described. 4th. In a combined paper weight and calendar, a hollow case provided with an opening near its top, a small rod running horizontally across this opening and a flapped metal apron secured on an inclined angle to the end of said opening, said case being mounted upon the heavy weighted base, and provided with sides and bolt and nut for securing said sides, substantially as shown and described.

No. 45,476. Bit and Saw combined.

(*Mèche et Scie combinées.*)

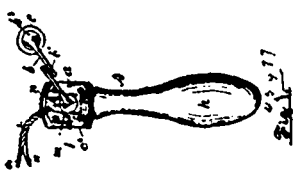


Eric Olof Lofdahl, Rockford, Illinois, U.S.A., 6th March, 1894; 6 years.

Claim.—A keyhole cutter consisting of a section in bit form, the shank being flattened on two opposite sides and one edge, and being of less diameter than the diameter of the bit portion, the edge being cut in saw teeth and the end of the shank fitted to enter a brace.

No. 45,477. Electric Cigar Lighter.

(*Allumoir électrique pour cigares.*)



Lawrence T. Smith, Barrington Centre, Rhode Island, U.S.A., 6th March, 1894; 6 years.

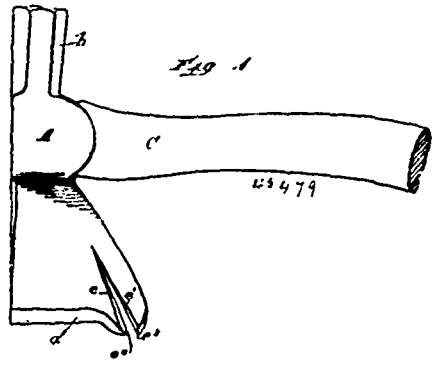
Claim.—1st. In an electric cigar-lighter, consisting of a head portion arranged to be connected in an electric circuit, conducting holders or arms secured to said head adapted to contact with the poles of the circuit, and an incandescing plug or burner block attached to said holders, the plug containing a non-exposed high resistance conducting wire or filament having its ends arranged to electrically engage the holders, substantially as set forth. 2nd. An electric cigar-lighter provided with current conducting arms or holders, an incandescing plug or burner block adapted to be supported by said arms composed of fire resisting material, a non-exposed conducting wire or filament of high resistance embedded in the plug, and having the ends of said filament arranged to engage the arms, whereby an electric current may pass from one arm to the other via the filament contained in the interposed plug, substantially as set forth. 3rd. A cigar-lighter adapted for continuous heating by electricity, consisting of a non-exposed conducting wire or filament of high resistance mounted in a plug or cylinder of fire-resisting material, and having said plug removably secured to conducting arms or holders mounted in a head located in an electric circuit, substantially as set forth. 4th. A cigar-lighter having a burner or plug formed of fire-resisting material provided with a non-exposed conducting filament of high resistance, combined with a head portion arranged to be located in an electric circuit, and conducting arms secured to the head arranged to receive said plug, for the purpose set forth. 5th. In a cigar-lighter, the combination of conducting arms adapted to be connected with the poles of an electric circuit, with an incandescing plug mounted in said arms having capped conducting ends, and further provided with a non-exposed conducting filament of high resistance secured to said caps, substantially as set forth. 6th. A cigar-lighter, consisting of a head or holder portion arranged to connect with the poles of an electric circuit, and a burner block provided with a non-exposed high resistance current conducting wire or filament, removably mounted in said head, and having such wire or filament adapted to contact with the current poles for continuous heating. 7th. In an electric cigar-lighter, the combination of an inner block of non-conducting material, a thin wire or filament of high resistance wrapped on the outer surface of said block, said wire forming part of an electric circuit, and an outer covering of fire clay or other non-conducting fire resisting material, substantially as described. 8th. In an electric cigar-lighter, the combination of an inner block of non-conducting material, a thin wire or filament of high resistance wrapped on the surface of said block in a helical or tortuous path, and an outer covering of non-conducting fire resisting material, with a battery or similar source of electricity in said circuit of sufficient strength to render said outer surface incandescent, substantially as described.

No. 45,478. Cane and Umbrella Combined.
(*Canne et parapluie combinés.*)

William B. Black, Bedford, Ohio, U.S.A., 6th March, 1894; 6 years.

Claim.—1st. A combined cane and umbrella, comprising a hollow stick, a telescoping device composed of a stationary part adapted to be detachably connected with the stick, and carrying a rib notch, and a movable part carrying a runner to which the stretchers are attached, the said movable parts carrying a locking device which engages the stick to prevent the telescoping device and thereby the umbrella frame from having any rotary motion, substantially as specified. 2nd. A combined cane and umbrella, comprising a hollow stick, a telescoping device comprising a stationary part adapted to be detachably connected to the stick and carrying a rib notch and a movable part carrying a runner for the stretchers, the runner engaging the end of the stick when the umbrella is raised, the said runner and the end of the stick having engaging portions to prevent the runner having a rotary movement in relation to the stick, substantially as described. 3rd. A combined cane and umbrella comprising a hollow stick having an opening in its small end extending from the outer side thereof inward and communicating with the interior of the hollow stick, a longitudinally slotted tube adapted to be detachably secured within said opening and extending into the stick a distance equal to the outward movement thereof, for the purpose described, and projecting beyond the outer end of the tube, ribs attached thereto, a runner surrounding the tube and connected with the rod through the slot in the tube and stretchers connected to the runner and to the ribs, all operating as described. 4th. A combined cane and umbrella comprising a hollow stick having a longitudinal screw threaded opening in one end a tube having a screw threaded portion extending inward beyond the screw threaded portion, for the purpose described, a rod moving within the tube, a rib notch attached to the outer end of the tube, a runner surrounding the tube, the latter having a longitudinal slot through which the runner is attached to the rod, the rod projecting beyond the outer end of the tube when the umbrella is closed, and stretchers connecting the runner and the ribs, substantially as described.

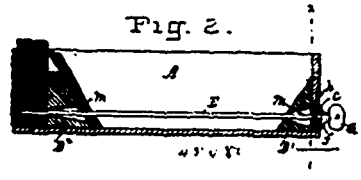
No. 45,479. Combination Tool. (*Outil à combinaison.*)



Charles A. Ketchum, William Wrigley, and William Scatchard, all of Chicago, Illinois, U.S.A., 6th March, 1894; 6 years.

Claim.—As an improved article of manufacture, a combination tool or hatchet having an A shaped slit or opening therein extending obliquely from the cutting-edge and towards the centre of the body of the tool, said slit or opening having its edges beveled on both sides, and provided at its outer extremity with the points or projections c^2, c^3, substantially as described.

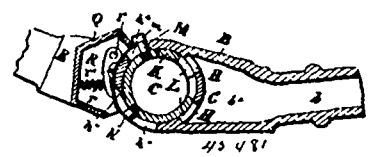
No. 45,480. Card Box. (*Boîte à cartes.*)



Richards & Co., assignees of William Evarts Richards, all of New York City, New York, U.S.A., 6th March, 1894; 6 years.

Claim.—1st. In a card-holding box or drawer, a guard-rod provided with a locking device consisting of a button, and a cam or cams engaging with each other, and a handle on the rod substantially in the manner and for the purpose herein described. 2nd. In a card-holding box or drawer, a guard-rod provided with a locking device consisting of a button, and a cam or cams engaging with each other, a handle or knob G provided with a flange *f*, bearing against the face of the box or drawer, and a shank between said flange and the button *h*, substantially as described. 3rd. In a card-holding box or drawer, a guard-rod having a knob or handle G, having a button *h* on the end thereof, an elliptical opening in the face of the box or drawer for the insertion of the button, and an escutcheon plate having a rim *l* provided with cam surfaces adapted to be engaged by the button, substantially as described.

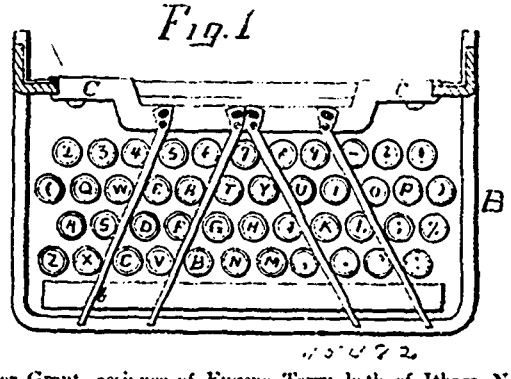
No. 45,481. Air Brake Coupler.
(*Joint de frein atmosphérique.*)



William Borbridge, Thomas Fraser, and William Printer, all of Ottawa, Ontario, Canada, 6th March, 1894; 6 years.

Claim.—1st. In a coupling for air pipes in an air-brake or air-signalling system, the combination with the flexible hose A, jaws B, having passages b^2, chamber C, and annular rubber cushion D, of the wall G, having openings H H, communicating with the said passage b^2, slots h^2 and h^3, the said slot h^3 being beveled at h^4, the hollow plug K having one end closed, opening L, adapted to register with the said openings H, pin M and N, passing through and into the said slots h^2, and h^3, respectively, the cap I, spring P, the aperture *o* in the closed end of the said plug K, the spring-dog R in the box Q, substantially as set forth. 2nd. In a coupling for air pipes in an air-brake or air-signalling system, the combination with the jaw B, having a chamber C, passage b^2, a wall G between said chamber and passage, openings H H, in said wall, communicating with the said passage b^2, and the annular band c^2, of the cylindrical valve plug K having openings adapted to register with the said openings H H, pins M and N projecting through and into slots made in the casting and means for operating the said pins so as to partially turn the said valve plug, as the jaw is being coupled with its mate, substantially as set forth. 3rd. In a coupling for air-pipes in an air-brake or air-signalling system, the combination with plug valves in the jaws of said couplings, the plugs of which have pins projecting through and into slots made in the said jaws of the dog R, spring *r*, and stop r^3, box Q, carried on each jaw, the said dog and box operating the said plug and partially rotating the same by means of the said pins, when the jaws are being coupled or uncoupled, substantially as set forth. 4th. In a coupling for air-pipes in an air-brake or air-signalling system, the combination with the hollow cylindrical valve, plug K closed at one end, of the hub O, the aperture *o* in the said closed end and spring P, substantially as set forth. 5th. In a coupling for air-pipes in an air-brake or air-signalling system, the combination with the slots h^2, and h^3, in the jaw B, the said slot h^3, being beveled at one end, of the cylindrical hollow plug K, the square headed pin M secured in the said plug and projecting through the slot h^2, the pin N secured in the said plug and projecting into the said slot h^3, substantially as set forth.

No. 45,482. Finger-guide for Type-writer.
(*Guide-doigt pour clavigraphes.*)



Schuyler Grant, assignee of Eugene Terry, both of Ithaca, New York, U.S.A., 6th March, 1894; 6 years.

Claim. 1st. A finger-guide as a new article of manufacture, comprising a bar, means for securing it to the frame of the machine and finger pieces secured thereto, as set forth. 2nd. A finger-guide as a new article of manufacture, comprising a bar, means for securing it

adjustably to the frame of a machine, and finger pieces secured thereto. 3rd. A finger-guide as a new article of manufacture, comprising a bar having its central portion extended forwardly, means for securing it to the frame of a machine, and finger pieces secured thereto. 4th. A finger-guide as a new article of manufacture, comprising a bar, means for securing it to the frame of a machine, and finger pieces secured thereto and adapted to be adjusted so as to vary the angle transversely across the the key-board, as set forth.

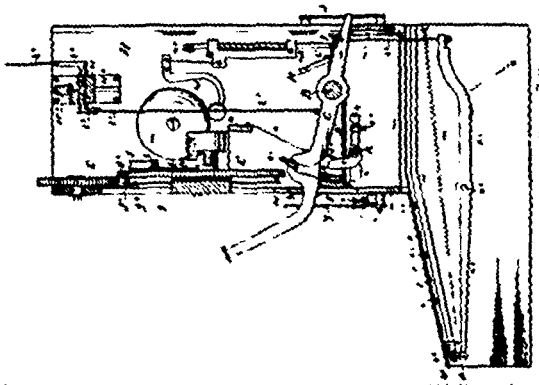
No. 45,483. Knife. (*Couteau.*)

The Christy Knife Company, assignee of Russ J. Christy, both of Fremont, Ohio, U.S.A., 6th March, 1894; 6 years.

Claim.—1st. The knife described, consisting essentially of a serrated blade, and an elastic straining bar attached near its ends to the ends of said blade, the handle being a return bend or loop in said bar, and a part of the bar extending in a plane about parallel with the plane of the blade, substantially as described. 2nd. The knife having a thin flexible blade, and an elastic straining bar extending alongside such blade in a plane about parallel therewith, said blade adjustably secured to said bar, substantially as described. 3rd. The straining bar at the side of the blade, having a portion near one end notched and extending about at a right angle to the blade and through a hole therein, said blade and bar being connected at the handle end, substantially as described. 4th. The knife described, consisting essentially of a thin, flexible, serrated blade, having holes near the ends and the straining bar and handle, in one piece of elastic metal, the handle consisting of a return bend or loop in holes in the bar, the ends of said bar extending through holes in the blade, all substantially as described.

No. 45,484. Cash Register and Indicator.

(*Registre et indicateur de monnaie.*)



John B. Anfuldish, John P. Breen, George Russell Wells and Aaron O. Schenck, assignees of John B. Anfuldish, all of Dayton, Ohio, U.S.A., 6th March, 1894; 6 years.

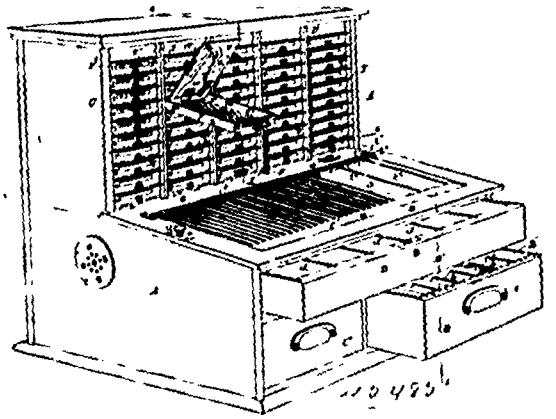
Claim.—1st. In a cash register and indicator, the combination with the key-lever shaft, of a series of key-levers provided with graduated curves and set screws, the curves corresponding to the value of said key levers from the lowest to the highest denomination, substantially as specified. 2nd. In a cash register and indicator, a series of key-levers with graduated curves, said curves varying in extent of curvature to correspond with the value of the key-lever, adjustable set screws to effect a more exact adjustment of said key levers, a horizontal reciprocating bar mounted on the shaft of the key-levers adapted to be operated by the curved part of said key levers, substantially as described. 3rd. The combination of the key-levers herein described, a horizontal plate with vertical spaces enclosing said key-levers, the platen and the opening adjacent to said vertical spaces, the studs with cylindrical cavities seated in said openings, a rubber cushion seated in said cylindrical cavities, against which the key-lever bears when depressed, the nut x^1, bearing a number corresponding to the value of the key-lever attached to the stud, the inking ribbon adapted to be shifted, substantially as described. 4th. In a cash register and indicator, the combination with the casing and a series of graduated key-levers mounted therein, of a key-board extending transverse of and over said key-levers said key-board at one end terminating in a pin, a locking plate with vertical slots therein in which the pin on the key-board is adapted to work and thereby operate to move said locking plate in a position to prevent the return of a key-lever until the full stroke thereof has been made, substantially as described. 5th. In a cash register and indicator, the combination with the casing, of a series of key-levers graduated as herein described, a locking plate with vertical slots, mounted in the rear adjacent to said key-levers, a bar with an inclined surface, mounted on the end of said locking plate over one of the slots therein, the horizontal key-board with a pin on one end adapted to move against the incline on said bar, and thereby slide the locking plate to prevent a key-lever from returning to its normal position until a full strike has been made, substantially as described. 6th. In a cash register and indicator, the combination of a series of graduated key-levers, a money receptacle opened thereby, a slotted plunger with lugs on its sides adapted to engage with similar lugs on the casing, the rod m^2 connected with said plunger, and the vertical rod m^4, whereby the cover of the money receptacle may be placed in a position that will not be effected by the operation of the key-levers, substantially as described. 7th. In a cash register and indicator, the combination with the casing and a series of graduated key-levers having their fulcrum therein, and a money receptacle with a sliding cover, of a slotted plunger adapted to move vertically, with lugs on the sides of the casing, the horizontal rod connected with said plunger, and the vertical rod connected to said horizontal rod, by means of which the cover of the money receptacle may be placed in a position not to be effected by the operation of a key lever, substantially as described. 8th. In a cash register and indicator, the combination with the graduated key-levers, of a reciprocating bar carried on arms mounted on the main shaft, and adapted to be operated by said key-levers, a toothed registering-wheel, a registering-wheel, a registering-arm extending radially from the axis of said registering-wheel, a sliding bar having a tooth and a pin, adapted to move in a slot in said arm, a sliding plate having a segmental groove, adapted to receive the pin on said bar, and a pitman connecting the registering-arm and the vibrating bar, substantially as described. 9th. In a cash register and indicator, the combination with the graduated key-levers, of a reciprocating bar supported on arms mounted on the key-lever shaft, and adapted to be operated by a depression of said key-levers, a vertical pitman connected to said bar, a toothed-wheel, a registering-arm loosely mounted on the shaft of the registering-wheel, said arm being provided with a sliding bar having a tooth and pin on its outer end, said arm also having a connection with the vertical pitman, a segmental grooved sliding plate and a sliding plate having teeth diametrically opposite the segmental grooved plate joined thereto and adapted to slide in the same direction, substantially as described. 10th. In a cash register and indicator, the combination with the adjustable and graduated key levers, of the reciprocating bar F, supported on arms mounted on the key-lever shaft, and adapted to be operated by said levers, a vertical pitman connected to said bar, a vertical sliding plate connected to the pitman, a pendent pawl mounted on said plate, a segmental grooved sliding plate with a pin thereon adapted to trip the pendent pawl when the vertical sliding plate is carried downward by the action of the key-lever, substantially as described. 11th. In a cash register and indicator, the combination with the adjustable and graduated key-levers, of the reciprocating bar F, supported beneath said key-levers, a vertical sliding plate connected to the bar F by a pitman, a pendent pawl provided with an inclined surface pivoted to said plate, a segmental grooved sliding plate mounted adjacent to the registering-wheel, and the vertical sliding plate, a transverse rod secured to the segmental sliding plate and to a toothed plate, a pin on the segmental sliding plate adapted to trip the pawl on the vertical sliding plate on the downward movement of said vertical plate, thereby alternately engaging and releasing the teeth of the registering-wheel with and from those of the toothed plate and the registering-arm, substantially as described. 12th. In a cash register and indicator, the combination with the graduated key-levers, of the reciprocating bar F, a vertical sliding plate connected thereto by a pitman, a pendent pawl mounted on the plate, a segmental grooved plate adapted to slide horizontally bearing a pin adapted to trip said pawl whereby the segmental grooved plate is withdrawn from its normal position and therewith the sliding bar of the registering-arm to release the tooth thereon from engagement with the registering-wheel and permit said registering-arm to be borne downward to become re-engaged with said registering-wheel at the end of the downward movement of the actuated key-lever and the registering arm, substantially as described. 13th. In a cash register and indicator, the combination of the key-levers described having fixed values, a registering-wheel having peripheral teeth, horizontally reciprocating bars mounted on the shaft of the key-levers and extending transversely beneath the key-levers, pitman connections between said bars and a vertical sliding plate and a registering-arm, a pendent pawl pivoted to the vertical sliding plate, a horizontal sliding plate having a segmental groove adapted to receive a pin on the sliding bar of the registering-arm, and a transverse rod attached at one end to a toothed plate, and at the other end to the segmental grooved plate, the latter plate being also provided with a pin adapted to trip the pawl on the vertical plate, substantially as described. 14th. In a cash register and indicator, the combination of the graduated key-levers, reciprocating bars mounted below and transverse of said key-levers, a primary registering-wheel, a horizontal sliding plate provided with a segmental groove and a pin, a toothed horizontal sliding plate connected with the segmental plate one of said plates being on each side of the registering-wheel, a vibrating registering arm having a sliding bar provided with a tooth and a pin, the former to engage with the teeth of the registering-

wheel, and the latter to engage with the segmental slot in the sliding plate, a pendent pawl mounted on a vertical sliding plate which actuates the segmental grooved plate, and pitmen connections between the said registering-arm, vertical sliding plate and the reciprocating bars, substantially as described. 15th. In a cash register and indicator, the combination with the graduated key-levers, reciprocating bars and the registering mechanism operated thereby, of a ring having a cam surface on its periphery and secured against the outer face of the registering-wheel, an adjustable bar secured to said ring, having a pin extending at right angle over the periphery of said ring, having a stud at one end projecting over said ring at a right angle, a secondary or transfer-wheel mounted above said arm, a vertical sliding ratchet pawl mounted adjacent to said wheel, substantially as described. 16th. In a cash register and indicator, the combination with the key levers described, of vertical slotted pitman connected to said key levers, a series of bell cranks provided with bearings in a horizontal bar mounted in the casing, one of the arms of said bell cranks, having a connection with said slotted pitman, the other arm of said bell crank supporting an indicator tablet, a horizontal grate bar mounted transversely above said bell cranks, adapted to be moved vertically by a pin on the shaft of said bell crank until said pin reaches one of the spaces therein, substantially as described. 17th. In a cash register and indicator, the combination with the graduated key-levers, the reciprocating bars mounted on the shaft of the key-levers, of a series of slotted pitman connected to said key-levers, a horizontal grate bar mounted above said rigid bar, and adapted to slide vertically, a series of bell cranks having bearings on the rigid horizontal bar, an indicating tablet, and a pin carried on said bell crank, the latter adapted to bear against the under surface of the grate bar until a space therein is reached when the pin becomes secured, and the tablet maintained in a raised position, a resetting spring attached to said bell crank, and to the bearing bar by means of which the pin so secured is withdrawn from the space when said grate bar is elevated by the pin on the next actuated bell crank, substantially as described. 18th. In a cash register and indicator, the combination with the key-levers herein described, of a series of bell cranks mounted and in the casing, pitmen connections between said bell cranks and key-levers, a pin and indicator tablet supported on said bell cranks, a transverse bar mounted in the casing affording bearings for the bell cranks, a grate bar slidingly mounted above said bar, adapted to be operated by the pin on the bell crank to support a tablet in an indicating position, a resetting spring by means of which the tablet so supported is withdrawn when the grate bar is raised by the next actuating bell crank, substantially as described. 19th. The combination with the main registering-wheel, of a vibrating arm loosely mounted on the shaft thereof, having a slot at its outer end, a bar having a tooth and pin, slidingly mounted in said slot, a sliding plate to maintain said tooth from engagement with the registering-wheel while the registering arm is being carried downward, and to permit such engagement when the limit of the downward trip is reached, a sliding plate to maintain the wheel in a fixed position while the downward trip of the arm is being made, and to release said wheel when the limit of said downward trip is reached, in order that the arm may rotate the wheel backward to effect a registration, substantially as described. 20th. The combination with the key-levers, the reciprocating bars operated thereby, and the main registering-wheel, of a vibrating registering-arm having a sliding bar with a tooth and pin thereon, a segmental sliding plate having a segmental groove adapted to receive the pin on the bar, said plate also having a pin, a vertical sliding plate mounted adjacent to said segmental plate to slide the latter, pitmen connections between said arm, vertical sliding plate and the reciprocating bars, substantially as described. 21st. The combination with the key-levers, the reciprocating bars and the main registering-wheel, of the registering-arm with the slot therein, the sliding bar with teeth c^2, and pin c^3, to fit said slot, a sliding plate with a segmental groove, and a sliding plate with teeth mounted adjacent to the registering-wheel, on opposite sides thereof, said plates adapted to simultaneously slide in the same direction, so that the tooth c^2, on the sliding bar, and the teeth on the sliding plate will alternately engage and release the registering-wheel, substantially as described. 22nd. The combination with the key-levers and the registering-wheel, of the registering-arm E^1, the sliding plate f^1, the sliding plate G, with groove therein and pin thereon, a pendent pawl to trip said pin and thereby subject said plates to a sliding horizontal movement, substantially as described. 23rd. In a cash register and indicator, the combination of the main registering-wheel, having a cam ring on one side thereof, a bar with a pin attached to said ring, so as to place said pin across the periphery of said ring, a transfer arm having a slot and lug, mounted above the main-wheel, the slotted pawl h, pivoted to a recessed bearing plate, and having also a pivotal connection with the slotted end of the transfer arm, substantially as described. 24th. The combination with the graduated key-levers and the reciprocating bars herein described, of a series of stops mounted below said key-levers and bars, whereby the vibrations thereof are checked, substantially as described.

No. 45,485. Cash Drawer. (*Caisse de comptoir.*)

The Eureka Cash and Credit Register Company, assignee of Warren F. Beck, all of Elmira, New York, U. S. A., 6th March, 1894; 6 years.

Claim.—1st. The combination with the case or cabinet, of a series of coupon drawers or trays, a register sheet and its frame below the coupon trays, a money drawer below the register sheet, and a drawer having compartments for arranging pass books, substantially



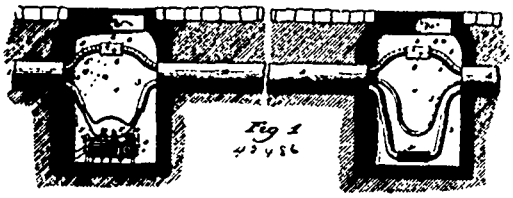
as described. 2nd. The combination of the case, the money drawer, the dog pivoted to the case, and engaging with the money drawer, and the key engaging with the dog, for the purpose specified. 3rd. The combination of the case, the money drawer, the dog pivoted to the case and engaging with the drawer, the key engaging with the dog to operate it, and the catch lever engaging with the key. 4th. The combination of the case, the drawer, the dog pivoted to the case and engaging with the drawer, the key engaging with the dog, and the spring-catch engaging a groove in the key. 5th. The combination of the sliding drawer, an inkstand in the drawer and adapted to move back and forth therewith, a stationary cover above the drawer and having an opening in it in line with the opening of the inkstand when the drawer is closed, whereby a pen may be passed through the cover and into the inkstand to lock the drawer, substantially as described. 6th. The combination of the case, the drawer, an inkstand in the drawer, an opening in the case above the drawer for the insertion of a pen, and means for opening and closing said opening as the drawer is opened and closed. 7th. The combination of the case, the drawer, an inkstand in the drawer, openings in the case above the drawer, a slide for opening and closing said openings in the case, and connections between the slide and the drawer. 8th. The combination of the case, the money drawer, a register sheet, a frame above the money drawer in which the register sheet is held, and a series of coupon drawers arranged in a case above the register sheet and in rear thereof. 9th. The combination of the case, the register sheet, the frame in which the register sheet is held, and a removal frame or grid for holding the register sheet in position 10th. The combination of the case, the register sheet, the frame in which the register sheet is held, and a removable frame or grid comprising top and bottom pieces and a series of connecting bars. 11th. The combination of the register sheet, its frame, the grid having the top and bottom pieces and connecting bars, the lugs projecting laterally from the grid into recesses in the frame, and the caps for covering the recesses. 12th. The coupon drawer or tray herein described having a lid pivotally connected to the side below the top thereof, said lid being provided with a tongue movable relatively to the body of the lid and with a finger movable relatively to the tongue. 13th. The combination with the case of a drawer having a lid pivoted thereto and provided with a finger projecting upwardly and engaging with a rod or guide secured to the frame at the front of the drawer. 14th. The combination with the frame of a horizontally arranged rod, a drawer adapted to slide back and forth in the frame and a lid pivoted to the drawer and having a finger which passes over the rod and causes the lid to rise as the drawer is opened. 15th. The coupon drawer herein described having a lid formed with a tongue, and a finger having an opening at its rear end to accommodate the knob or an adjacent drawer, substantially as described.

No. 45,486. Method of and Apparatus for Electrically Producing Continuous Metallic Line Structures. (*Méthode et appareil électrique de soudage dans la construction de lignes métalliques continues.*)

Ries and Henderson, Philadelphia, Pennsylvania, assignees of Elias Elkin Ries, Baltimore, Maryland, all in the U.S.A., 6th March, 1894; 6 years.

Claim.—1st. The method of producing continuous metallic line structures, such as lines of wires, rails, pipes and the like, which consists in establishing an initial electric circuit along the line of the proposed structure or structures, and charging said circuit with suitable current, laying successive sections of the wire or other metal designed to constitute or form part of the structure along the line of way, and electrically welding or uniting the ends of the sections so as to form a continuous or unbroken structure by subjecting the ends to be united directly or indirectly to the heating action of the current flowing in the initial circuit, substantially as described. 2nd. The method of producing continuous metallic line structures,

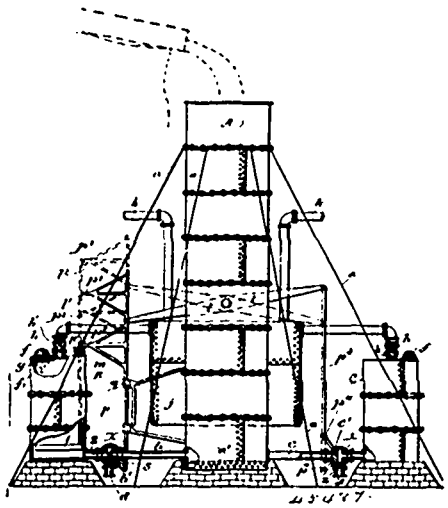
which consists in establishing an initial electric circuit, charged from a fixed station with alternating currents along the line of the



proposed structure laying successive sections of the said structure along the line of way, and in electrically welding the ends of the sections to each other by tapping the said circuit at one or more points by inductional transformers, and subjecting the ends to be united to the heating action of the converted secondary current or currents, substantially as described. 3rd. The method of producing and maintaining a line of telegraph wires or other electrical conductors, which consists in primarily erecting a single wire or circuit, charging the same with current capable of developing the requisite heating effect, and utilizing the said current at various points along the line of way either directly or indirectly, to produce the necessary union or joint between the other sections of conductors constituting the line of wires, substantially as described. 4th. The method of constructing a line or lines of electric conductors, which consists in utilizing the current flowing in one line of conductors to produce the welds or joints in another line or lines extending in a direction parallel therewith, substantially as described. 5th. The method of electrically heating sections or portions of metallic line structures preparatory to welding, soldering, brazing or otherwise treating the same, which consists in establishing a permanently charged electric circuit extending along the line of said structure, and including the sections or portions of the structures to be heated, either directly or indirectly in the said charged circuit, substantially as described. 6th. The method of electrically heating sections or portions of metallic line structures preparatory to welding, soldering, brazing, shaping, or otherwise treating the same, which consists in establishing a permanently charged electric circuit extending along the line of said structure, including the sections or portions to be heated, either directly or indirectly, in the said charged circuit, and in varying or graduating the flow of heating current through the sections or portions of the structure to be heated, to suit the requirements of the welding, soldering, brazing, shaping or other operation, substantially as described. 7th. An underground or other conduit or way, provided with supports for electric conductors and cables, said conduit or way having a permanent line of conductors extending along the same, and charged with electric current or currents, in combination with an electric welding, soldering or brazing apparatus arranged and designed to be supplied with current therefrom, and adapted to produce electrically welded, soldered or brazed joints in or between the other wires carried by the said conduit or way, substantially as described. 8th. In a system of electrically heating sections or portions of metallic line structures preparatory to welding, soldering, brazing, shaping or otherwise treating the same, the combination of a permanent line of conductors extending along the line of the structure and charged with suitable currents, a portable metal working or holding apparatus for clamping the sections or portions of the structure to be united or treated, and connections between the said apparatus and the said permanent line conductors, substantially as described. 9th. In a system of electrically welding or uniting successive sections of metallic structure, the combination of a permanent line of conductors extending along the line of the structure, and charged with suitable currents, with a portable electric welding or metal working apparatus, and means for tapping the permanent line by the said apparatus, substantially as described. 10th. In a system of electrically welding successive sections of metallic structures, the combination of a permanent line of conductors charged with alternating currents of high tension, and extending along the line of the structure, with a portable welding or metal working apparatus comprising a transformer, welding or heating clamps, and a current regulator, and means for tapping the permanent line by the primary of the convertor, substantially as described. 11th. In a system of laying conductors in underground conduits, the combination of a permanent line of conductors established in said conduit, and charged with suitable currents, with a portable welding apparatus, and means for tapping the permanent line by the welding apparatus at the manholes of the conduit, substantially as described. 12th. In a system of electrically welding lines of conductors at the manholes of underground conduits carrying such conductors, the combination of a permanent line established in the conduit and charged with suitable currents, with a switch-board or connecting terminals for the said line in each manhole, a portable welding or metal working apparatus, and a plug or equivalent connection, for tapping the permanent line at the switch-board by the welding apparatus, substantially as described. 13th. A portable welding or metal working apparatus, comprising an inductional converter and a reaction coil housed within the casing, welding or heating clamps constituting the terminals of the secondary of the converter, mounted upon the casing, and a tapping plug flexibly connected with or constituting the terminals of the primary of the converter, substantially as described.

No. 45,487. Hydraulic Air Compressing Apparatus.

(*Machine à pression hydraulique.*)

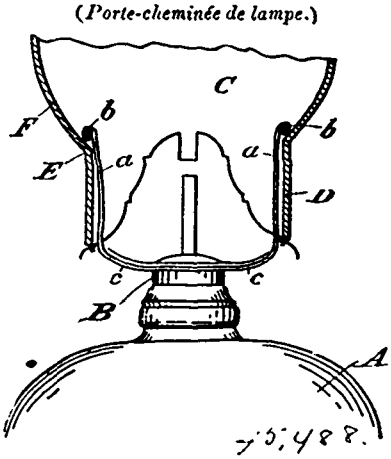


William A. Rohr, Montreal, Quebec, Arthur W. Coe, Alpheus F. Wood and Robert R. Casement, Madoc, Ontario, all of Canada, 7th March, 1894; 6 years.

Claim.- 1st. In hydraulic air compressing apparatus, the combination of a main conductor arranged to receive at one end a stream of water, and its position, relatively to a horizontal base, being such as to establish a pressure through the fall of such water, one or more air compressor cylinders, connected with the opposite or delivery end of said main conductor, means for controlling the passage of water from said conductor to said compressor cylinders and for controlling the escape of the water from the latter after performing its work, and suitable storage tanks connected with said cylinders. 2nd. In hydraulic air compressing apparatus, the combination of a vertical stand pipe to receive a stream of water, one or more cylinders provided with valve controlled air inlets, and valve-controlled delivery tubes between same and the storage tank, a passage or passages for water between said stand pipe and cylinder or cylinders, and a valve or valves for controlling the inflow and outflow of water to and from such cylinder or cylinders, with means for operating such valves. 3rd. In hydraulic air compressing apparatus, the combination of stand pipe A, cylinders B, C, having air inlets *f* and valves f^1, pipes *b*, *c*, between said stand pipe and cylinders and containing three-way valves b^1, c^1, storage tank *j*, and delivery pipes *h*, containing back pressure valve *h*, between said cylinders and the storage tank, and means for automatically operating such valves, as and for the purposes set forth.

No. 45,488. Lamp Chimney Holder.

(*Porte-cheminée de lampe.*)



Richard S. Woodliff, assignee of William H. Soper, both of Jackson, Michigan, U.S.A., 7th March, 1894; 6 years.

Claim.—1st. In a lamp burner, the combination with the base of a chimney holder, consisting of upwardly extending arms, formed with retaining heads on their outer ends and having their lower ends extending through the base and united below the burner, substantially as described.

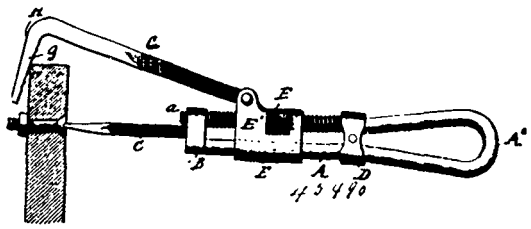
No. 45,489. Electric Accumulator.

(Accumulateur électrique.)

Dagobert Scheinberger, assignee of Friedrich Wilhelm Ellermann, both of Vienna, Austria, 7th March, 1894; 6 years.

Claim.- 1st. In the manufacture of an accumulator, adding to the ingredients of the "active" mass, which preferably consists of oxides of lead, such a litharge or peroxide of lead, bodies soluble in the electrolyte, more especially soluble sulphates of light metals, such as sodium and magnesium sulphates, in the proportion given or thereabouts, and subsequently removing these bodies by means of a solvent for the purpose of producing pores or interstices in that mass. 2nd. In high-resistance accumulators, adding to the active mass a mercury compound, more especially sulphate of mercury, and preferably in the proportion stated, for the purpose of enhancing the conductibility of that mass owing to the presence of mercury eliminated by the action of the current. 3rd. In accumulators of great capacity, the addition to the "active" mass of an electrolytically inert substance, especially peroxide of manganese, preferably in the proportion stated, for the purpose of counteracting the injurious effects of short-circuiting. 4th. An electric accumulator substantially as herein described, the same comprising an "active" mass made porous in the manner set forth and containing a mercury compound and an electrolytically inert substance.

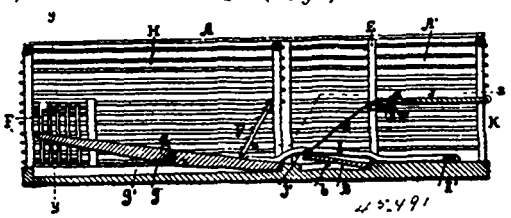
No. 45,490. Combination Tool. *(Outil à combinaison.)*



Christopher Columbus Reynolds and Elizabeth Brown, both of Eldorado, Utha, U.S.A., 7th March, 1894; 6 years.

Claim. 1st. In a combination tool, the combination of the bent rod, one section of which is screw-threaded, the movable block on said parallel sections, an adjusting nut, the removably-connected screw-driver and the hooked bar pivoted to the movable block, substantially as described. 2nd. In a combination tool, the combination of the looped rod, providing two parallel sections, one of which is a screw, a screw-driver whose head is connected to the end of said screw, a movable block mounted on the parallel sections, an adjusting nut engaging the block and the screw and operative upon the block, and a hooked bar pivoted upon the block, substantially as described. 3rd. The combination, in a combination tool, of the parallel sections A and A^2, the latter being a screw, the block E, adjusting-nut F on the screw A^2, and located within a slot in the block E, the hooked bar pivoted to the block E, and the chisel pointed part C connected to the device, substantially as described.

No. 45,491. Animal Trap. *(Piège.)*



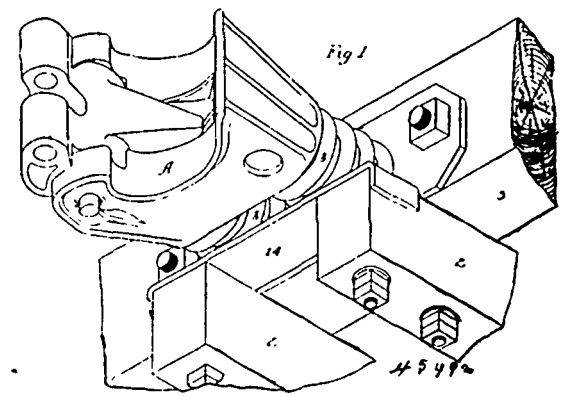
John Lilleston and Lanta Lilleston, assignees of Charles C. Martin, all of West Franklin, Indiana, U.S.A., 7th March, 1894; 6 years.

Claim.—The combination with the cage, of a tripping platform pivoted therein, a releasing lever pivoted on a higher plane and connected with said platform, the pivoted doors, the resetting pivoted platform, and an extension thereon passed over the tilting platform, and the pivoted door J, above said extension, and supported on the releasing lever, said extension being curved and cut away to allow the tilting platform to tilt, substantially as shown and described.

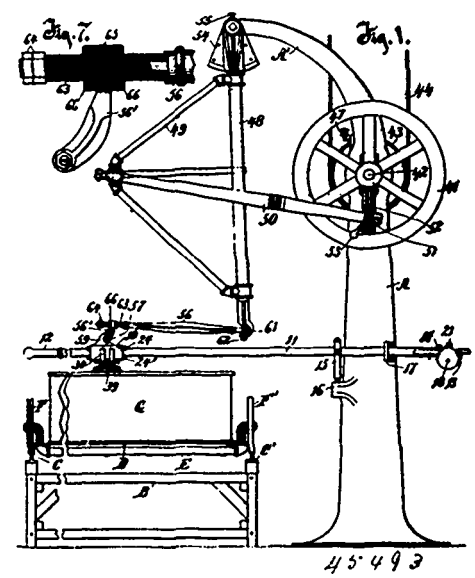
No. 45,492. Car Coupler. *(Attelage de chars.)*

William Van Schoonhoven Thorne, St. Paul, Minnesota, U.S.A., 7th March, 1894; 6 years.

Claim.- 1st. The combination with the railway car, of the continuous draft gearing therefor, comprising in combination the draw-heads, the draft rods connecting said draw-heads, and having an intermediate telescoping connection or coupling, and the elastic cushions arranged between said draw-heads and the ends of the car, substantially as described. 2nd. The combination with the railway car, of draw-heads connected with each other, springs interposed between said draw-heads and the ends of the car and buffer plates upon the car to receive the pressure and impact of said springs and draw-heads, substantially as described. 3rd. In a railway car, the combination of the draw-heads arranged thereon, springs holding said draw-heads normally out of contact therewith, the draft rods connected to each of said draw-heads and running underneath said car and passing loosely through a common plate, and heads upon the ends of the rods bearing against the face of the plate farthest from the draw-head, to which the rods are connected. 4th. The combination with the railway car, of draw-heads arranged opposite the end sills of the car, two draft rods extending from each drawhead under the car, the ends of the rods from the opposite heads alternately overlapping beneath the car, a plate through which said ends pass freely, and heads on the ends of the rods bearing against said plate. 5th. The combination with the car body, of the pairs of rods having their meeting ends alternately overlapped, and their common connection firmly holding them against a pulling strain, but yielding freely to a thrust. 6th. The combination with a railway car, of the continuous draft rods arranged underneath the car, having a telescoping connection, and extending through the end sills of the car, the draw-heads keyed thereon, the buffer plates upon said sills, and the springs interposed between said draw-heads and plates. 7th. In a railway car, the combination of the buffer plates arranged upon its end sills, the continuous draft rods projecting through said plates, the draw-heads supported upon said rods, and the springs interposed between the draw-heads and buffer plates, substantially as described.



No. 45,493. Polishing Machine. *(Machine à polir.)*



The Moore Carving Machine Company, Minneapolis, assignee of Stephen F. Moore, Minnesota, all in the U.S.A., 7th March, 1894; 6 years.

Claim.—1st. In a machine of the character described, the combination, of a standard or frame, a guide-bar pivoted on the standard and capable of being swung vertically, a driving shaft mounted in the standard, a vibrating arm pivoted on the standard, a pitman connecting the vibrating arm to a crank on the driving shaft, a reciprocating polisher carriage on the guide-bar and a rod connecting the carriage to the free extremity of the vibrating arm, substantially

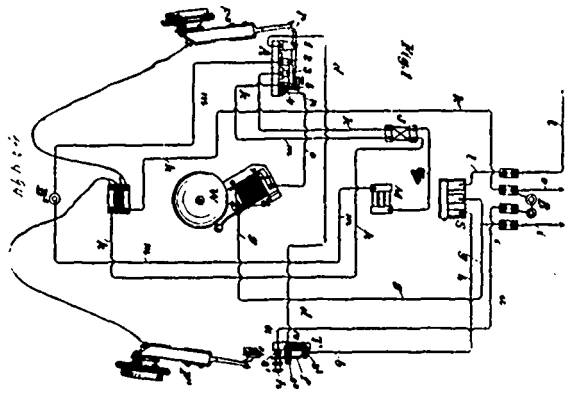
as described. 2nd. In a machine of the character described, the combination of a standard or frame, a driving shaft mounted in the standard, a fly wheel fixed on the shaft, a vibrating arm pivoted on and suspended from the standard, and a pitman connecting the vibrating arm medially to a wrist pin on the fly-wheel and a reciprocating polisher carriage connected directly to the extremity of the vibrating arm, substantially as described. 3rd. In a machine of the character described, the combination of a standard having an overhanging and laterally deflected arm, a shaft mounted in and transversely of the standard, a fly-wheel on the shaft at one side of the standard, a vibrating arm pivoted on the deflected extremity of the standard and pendent therefrom in the vertical plane of the fly-wheel, and a pitman connecting the vibrating arm medially to the wrist pin of the fly-wheel, substantially as described. 4th. In a machine of the character described, the combination of a standard having an overhanging and laterally deflected arm, a shaft mounted in and transversely of the standard, a fly wheel on the shaft at one side of the standard, a vibrating arm pivoted on the deflected extremity of the standard and pendent therefrom, a vertically disposed bearing plate 54 rigid to the standard and adapted to bear against and guide the vibrating arm, and a pitman connecting the vibrating arm to the wrist pin of the fly-wheel, substantially as described. 5th. In a machine of the character described, the combination of a standard, a fly-wheel journalled on the standard, a vibrating arm pivoted on and pendent from the standard, a medial truss on the vibrating arm projecting laterally therefrom on the side opposite to the fly-wheel, and a pitman connecting a wrist pin on the fly-wheel to distant part of the truss, substantially as described. 6th. In a polishing machine, the combination of a vibrating arm, a polisher carriage and a rod (connecting the carriage to the arm) consisting of two members swivelled together, as described. 7th. In a polishing machine, the combination of a vibrating arm, a polisher carriage and a rod (connecting the carriage to the arm) consisting of two members swivelled together, one of which members is arranged at an angle to the other member, substantially as described. 8th. In a polishing machine, the combination of a vibrating arm, a polisher carriage, a connecting rod consisting of two members swivelled together, and balls or gimbals interposed between the ends of the rod and the vibrating arm and the polisher carriage respectively, forming universal joints between them, substantially as described. 9th. In a polishing machine, the combination of a cylindrical guide-bar having a longitudinal groove therein, and a polisher carriage reciprocable thereon, the carriage consisting chiefly of a sleeve and bearing brasses adjustable therein, one of the brasses being provided with a feather which enters the groove in the guide-bar and prevents rotation of the carriage thereon, substantially as described. 10th. In a polishing machine, the combination of a substantially cylindrical polisher carriage reciprocable on a guide bar, an adjustable block to which a polisher block is attached, *and means substantially as described for adjusting the adjustable* block circumferentially on the carriage. 11th. In a polishing machine, the combination of a reciprocable polisher carriage, a polisher block secured detachably to a head-block, said head-block secured tiltably to an adjustable block, which last block is secured adjustably to the carriage, substantially as described. 12th. In a polishing machine, the combination of a reciprocable polisher carriage, a polisher head-block mounted and tiltable laterally on the carriage, and a polisher-block secured detachably to the head-block, substantially as described. 13th. In a polishing machine, the combination of a reciprocable polisher carriage, an adjustable block on the carriage, a polisher head-block provided with curved bearings and a bolt holding the polisher head-block to the adjustable block tiltably, substantially as described. 14th. In a polishing machine, the combination of a standard, a yoke swivelled on the standard, a guide-bar pivoted medially in the yoke, a polisher carriage reciprocable on an arm of the guide-bar and an adjustable counterpoise on the other arm of the bar, substantially as described. 15th. In a polishing machine, the combination of a standard, a yoke swivelled on the standard, a guide-bar pivoted medially on the standard, a polisher carriage reciprocable on an arm of the guide-bar, a yoke adjustable on the other arm of the guide-bar, and weights pivoted and pendent on the yoke in pairs opposite each other laterally, substantially as described. 16th. In a polishing machine, the combination of a standard, a guide bar pivoted medially on the standard, and a polisher carriage reciprocable on one arm of the guide-bar, a counterpoise on the other arm of the bar, and a stop fixed on the standard adapted to engage and limit the oscillation of the bar, substantially as described. 17th. In a polishing machine, the combination with a polisher carriage reciprocable horizontally, of a car adapted to support an article being polished, which car includes wheels travelling on a track at a right angle to the motion of the reciprocable polisher carriage, and cranked axles whereby the floor of the car is let down between the wheels so as to bring the transverse rubbing strain of the polisher on the article being polished down more nearly to the plane of the car track, substantially as described.

No. 45,494. Telephone Circuit.

(*Circuit de téléphone.*)

Jorgen J. Moller, Flentburg, Prussia, 9th March, 1894; 6 years.

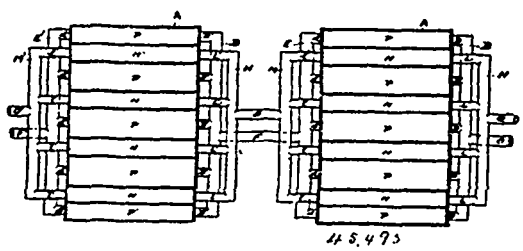
Claim. -1st. In a telephone installation, the combination with the contact pieces s''', and s'', of the bell-push and the resistance conductor w adapted to branch during calling a portion of the bell line current and the receiver line k, constructed and arranged, substantially as hereinbefore described. 2nd. A telephone installation



in which the calling-up current passes with its full power through the receiver line, the earth connections through k', and g, being broken, while simultaneously a new earth connection is being made through the line a, the calling-up battery, and the line o, to the earth for which purpose the main line l is connected by the line h, with the cut-out switch A, and the contact pieces s''', and s'', of the bell-push are connected with the receiver k, and with the ground through the link k, in such a manner that the calling-up current cannot enter the line l without passing through the receiver line, the receiver thus remaining connected with the main line, connected and arranged, substantially as hereinbefore described.

No. 45,495. Electrolytic Apparatus.

(*Appareil électrolytique.*)



Emile Andreoli, Somerleyton Road, London, England, 9th March, 1894; 6 years.

Claim.—1st. The construction of electrolytic tanks provided with main and branch pipes for the inlet and the outlet of the liquids circulating respectively in and out of the positive and negative compartments, so as to maintain regular flows of the chlorinated and alkaline solutions through a series of electrolytic tanks. 2nd. The construction and arrangement of the anodes, presenting large surfaces, made up of single pieces of retort carbon passed through the covers of the compartments and externally connected together with the dynamo as described. 3rd. The arrangement, consisting of a slate or other frame supporting the diaphragm fixed in a groove in the side and bottom of the tank, and against which are placed or fixed on one side the anode and the cathode on the other side. 4th. The arrangement of the electrodes placed close to each other and separated by a thin diaphragm, and a thin layer of electrolyte only, thus providing two similar electrodes in each positive and negative compartment. 5th. Porous diaphragms such as asbestus, porous porcelain or Kieselguhr or pumice stone porcelain, disposed between the cathode and the anode or near each other, substantially as described. 6th. The manner in which the chlorine gas and hydrogen are aspirated from their respective compartments, in an opposite direction as described. 7th. In an electrolytic tank, the combination of main and branch pipes through which the chlorinated and the alkaline solutions circulate, with their corresponding positive and negative compartments formed by means of asbestus porous porcelain or equivalent porous porcelain, and disposed each between a perforated or metallic gauze cathode, and a retort carbon anode in such manner that there are two modes in each positive compartment, and two cathodes in each negative compartment, substantially as described.

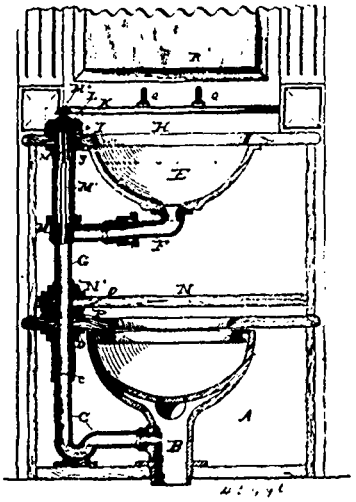
No. 45,496. Combined Water-closet and Wash Basin

(*Latrines à l'eau et cuvettes combinées.*)

Andrew A. Leyare, Alexandria Bay, New York, U.S.A., 9th March, 1894; 6 years.

Claim.—1st. In a combine washstand and water-closet, the combination with a water-closet, of a washstand arranged above the closet and supported by a rotatable waste-pipe, substantially as de-

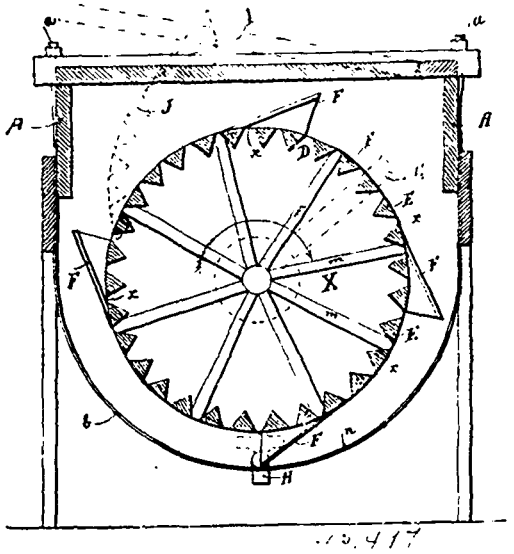
scribed, for the purpose specified. 2nd. In a combined washstand and water-closet, the combination with water-closet, of a washstand supported above the closet by a rotatable waste-pipe that is con-



nected with the discharge pipe of the closet, substantially as and for the purpose described. 3rd. In a combined water-closet and washstand, the combination with a water-closet, of a stationary bracket arranged above the closet, a rotatable pipe supported by said bracket and connected with the discharge-pipe of the closet, and a washstand supported by said pipe, and having its bowl or basin communicating therewith, substantially as and for the purpose described. 4th. In a combined water-closet and washstand, the combination with a water-closet, of an elbow C, connected with the closet, a pipe G, having its upper end supported by a stationary bracket above the closet and its lower end extending into the elbow C, a washstand carried by said pipe and a pipe F, connecting the bowl of said stand with the pipe G, substantially as and for the purpose described. 5th. In a combined water-closet and washstand, the combination with a water-closet, of an elbow C, connected with the discharge pipe of the closet, a rotatable pipe G, supported by a bracket K, above the closet, and having its lower end extending into the elbow C, a washstand carried by said pipe, a branch pipe F, connecting the bowl of the washstand with the pipe G, and a tubular valve arranged within said pipe G, substantially as and for the purpose described.

No. 45,497. Washing Machine.

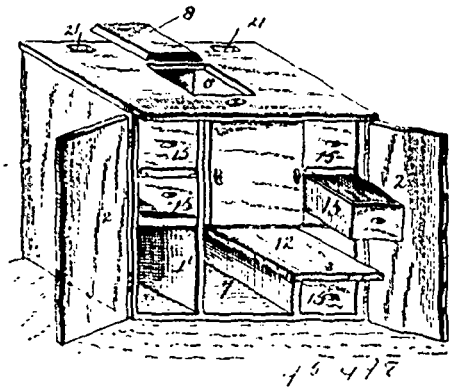
(*Machine à blanchir.*)



Joseph Giguère, St. Rémi, Quebec, Canada, 9ein Mars, 1894; 6 ans.

Claim.—Dans une machine à laver la combinaison d'un cylindre X, formés des côtés D, munies de côtes *m*, et des barreaux E, de la porte J, et angets F, et pièces *c*, *f*, B, et de la manivelle G, avec une boîte étanche A, munie des pièces *d*, *l*, H, des plaques, et des boulons *a*.

No. 45,498. Refrigerator. (*Réfrigérateur.*)

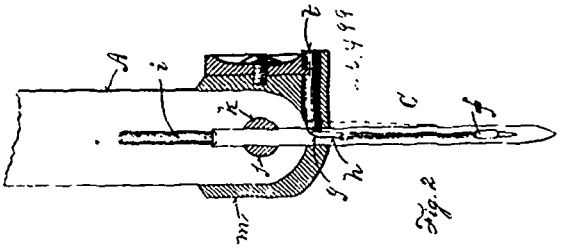


Mary M. Harris, Chicago, Illinois, U.S.A., 9th March, 1894; 6 years.

Claim.—In a refrigerator or ice-box, the combination with the outer casing having hinged doors at its front and top, and provided with ventilating openings of the ventilating chamber, the food compartments having openings near their upper ends communicating with said chamber, the horizontal flanges, the removable perforated plates, the food drawers or receptacles, and the vertical and horizontal partitions forming central upper and lower chambers, substantially as described.

No. 45,499. Holder for Sewing Machine Needles.

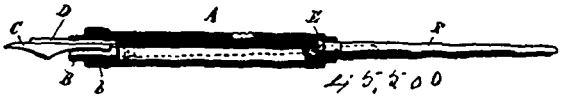
(*Porte-aiguilles pour machines à coudre.*)



Joseph E. Chenette, Napa, California, U.S.A., 9th March, 1894; 6 years.

Claim.—1st. The combination with a needle-bar of a holder, comprising a socket for receiving the end of the bar, a nut and bolt for clamping the needle thereto, a sliding-pin in the socket body, and a cam for projecting said pin into the needle opening. 2nd. The holder B, provided with the sliding-pin *t*, and cam-wheel *r*, working in a slot in said pin. 3rd. The needle-bar, in combination with the holder B, provided with the bolt *k*, and slot *r*, the sliding-pin *t*, and cam-wheel *r*, for actuating said pin, all being arranged to operate, substantially as described.

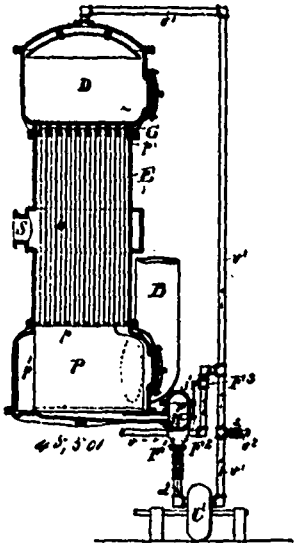
No. 45,500. Fountain Pen. (*Plume à réservoir.*)



Woodruff Post, Olean, New York, U.S.A., 10th March, 1894; 6 years.

Claim.—1st. In a fountain pen, the combination of the main barrel, the pen-stock inserted in the end thereof, and having an annular enlargement thereon, which provides a shoulder abutting against the end of the barrel when the pen-stock has been fixed in place, said pen-stock being provided internally with oppositely-located grooves, the pen which is securely fitted in place within the internal grooves and pen-stock, and the spring-feeder acting upon the back of the pen, substantially as described. 2nd. In a fountain pen, the combination of the main barrel, a plunger working therein, a handle attached to the plunger and passing through an air-tight joint in one end of the barrel, a pen-stock inserted into the opposite end of the barrel, and provided with a shoulder which abuts against the end of the barrel when the pen-stock is in place, said pen-stock being provided internally with oppositely-located grooves, the pen inserted within said grooves, and the spring-feeding devices likewise located within the pen-stock, and acting upon the back of the pen, substantially as described.

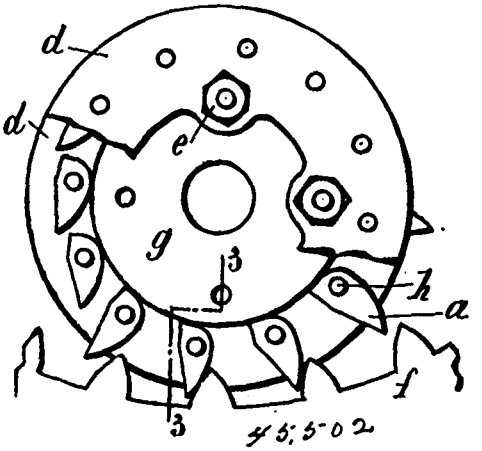
No. 45,501. Process of Evaporating Liquids.
(*Procédé pour évaporer les liquides.*)



Samuel Morris Lillie, Philadelphia, Pennsylvania, U.S.A., 10th March, 1894; 6 years.

Claim.—The process of concentrating a liquid by evaporation, consisting in circulating and re-circulating a portion of the liquid to be concentrated continuously in thin films over a heated evaporating surface, and in continuously adding thin liquid to be concentrated in regulated quantities to the said circulating liquid, and simultaneously drawing away concentrated liquid from the circulating liquid, substantially as described.

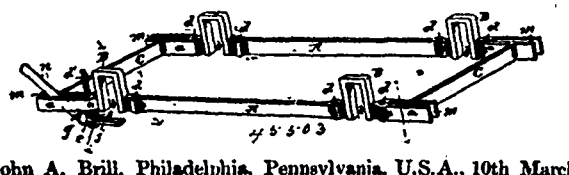
No. 45,502. Gear-wheel. (*Roue d'engrenage.*)



Jean Marie Moret, Besançon, France, 10th March, 1894; 6 years.

Claim.—An improved gearing comprising the movable part having movable or yielding teeth and the companion part having fixed teeth, substantially as described.

No. 45,503. Axle-box Frame. (*Chassis de boîte à graisse.*)



John A. Brill, Philadelphia, Pennsylvania, U.S.A., 10th March, 1894; 6 years.

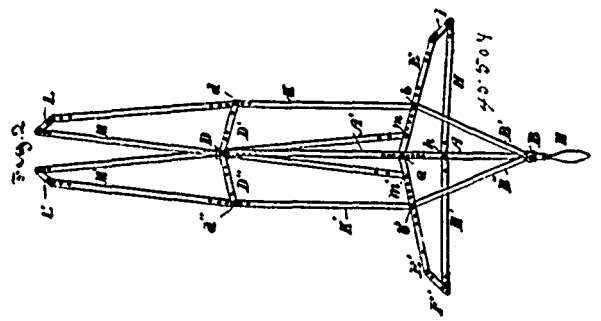
Claim.—1st. An axle-box frame made into a single homogeneous piece of metal, and comprising longitudinal members, axle-box housings or saddles having their bearing surfaces within the plane of the web of the longitudinal members, and a transverse member or members, the union of the longitudinal members being made at or near their ends, substantially as described. 2nd. An axle-box frame formed into a single homogeneous piece of metal having housings for the axle-boxes formed integral with the longitudinal members, which are intermitted about the housings, the tops of the housings lying above the plane of the longitudinal members, the housings being open between said intermitted portions, and a lateral member or members formed integral with the said longitudinal members, substantially as described. 3rd. An axle-box frame formed into a single homogeneous piece of metal having longitudinal members, the lateral members uniting the longitudinals at or near the ends thereof without the use of a central bolster or transom, the ends of the longitudinal member being bifurcated, substantially as described. 4th. An axle-box frame formed of one piece of metal, having housings for the axle-boxes formed integral with and extending above the longitudinal members, which are intermitted about the housings and a lateral member or members formed integral with the said longitudinal members, the ends of the longitudinal members being bifurcated, substantially as described. 5th. An axle-box frame having side beams, said side beams having extended ends formed in one solid piece and bifurcated, the bifurcated ends being transversely united, substantially as described. 6th. An axle-box frame having side beams, said side beams being formed of one solid piece, having integral housings, the side beams being intermitted about the housings, and having bifurcated extended ends, substantially as described. 7th. An axle-box frame formed of one homogeneous piece of metal, having integral axle-box housings between its ends, the frame being intermitted about the housings which extend above the frame, and integral lateral members extending between said ends, substantially as described. 8th. An axle-box frame, having side beams, housings on said side beams, and lateral members uniting the side beams between the ends and the housings, said side beams, housings and lateral members being formed into one single homogeneous piece of metal, substantially as described. 9th. An axle-box frame, having side beams, housings on the side beams, the side beams extending past the housings, and lateral members uniting the side beams between the ends and the housings, the extensions of the side beams being bifurcated, substantially as described. 10th. An axle-box frame, having side beams and cross uniting members all made into one single homogeneous piece of metal, the side beams having housings between its ends integral therewith, said beams being bifurcated, said housings being between the bifurcated ends of the side beams, substantially as described. 11th. An axle-box frame, having side beams, and cross uniting members all made into one single homogeneous piece of metal, the side beams having bifurcated ends between which the cross uniting members extend, substantially as described. 12th. An axle-box frame, having side beams and a cross uniting member or members all made into one single homogeneous piece of metal, the side beams having integral housings between its ends, and spring post apertures adjacent to said housings, substantially as described. 13th. An axle-box frame, in which the side beams, cross uniting members, and axle-box housings are formed of one piece of metal, the side beams being intermitted about the housings which form openings or axle-box bearing surfaces between the intermitted ends of the side beams, substantially as described. 14th. An axle-box frame having side beams, housings on the side beams, the said side beams extending past the housings, and lateral members uniting the side beams between the ends and the housings, the side beams, housings and lateral members being formed of one piece of metal, substantially as described. 15th. An axle-box frame having side beams, housings on the side beams, the side beams extending past the housings, spring post apertures in the side beams adjacent to the housings, lateral members uniting the side beams between the ends and the housings, the side beams, housings and lateral members being formed of one piece of metal, substantially as described. 16th. An axle-box frame having side beams intermitted at certain points between its ends, within the intermitted portions of which lie axle-box housings or yokes, the side beams extending past the housings, and lateral members uniting the side beams between the ends and the housings, the side beams, housings and lateral members being formed of one piece of metal, substantially as described. 17th. The axle-box frame having the side beams A, and housings B, spring post apertures *d*, adjacent to said housings, the side beams being enlarged about said apertures to form supports for superposed springs, substantially as described. 18th. The axle-box frame, having the side beams A, and a cross uniting member or members lying in the same general plane, axle-box housings or yokes on the side beams, the bearing surfaces of which extend beyond said plane, either above or below, the side beams being intermitted about said housings, all of which are formed into a single homogeneous piece of metal, substantially as described. 19th. The axle-box frame having the side beams A, the housings B, extending above the side beams, which are there intermitted, the open yoke of the housings being between the intermitted ends of the side beams, spring post apertures *d*, adjacent the housings, and cross uniting members, all in one homogeneous piece of metal, substantially as described.

No. 45,504. Garment Stretcher.
(*Tendeur pour vêtements.*)

Albert Clarke, Wellesley, Massachusetts, U. S. A., 10th March, 1894; 6 years.

Claim.—In a garment stretching frame, the combination of the central operating strip A A^1, clasp B sliding freely on said strip,

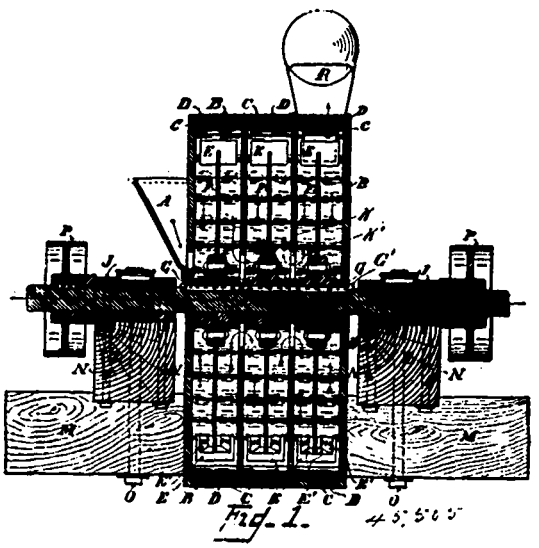
and having attached to it strips B^1, B^2, strips E E^1 pivoted to the operating strip A A^1, links F F^1 and strips H H^1, all acting together



as a frame actuating device: with the strips K K^1, M M^1, and links L L^1, slide D, and links D^1 D^2, substantially as and for the purpose set forth.

No. 45,505. Ore Pulverizer.

(*Machine à pulveriser le minerai.*)



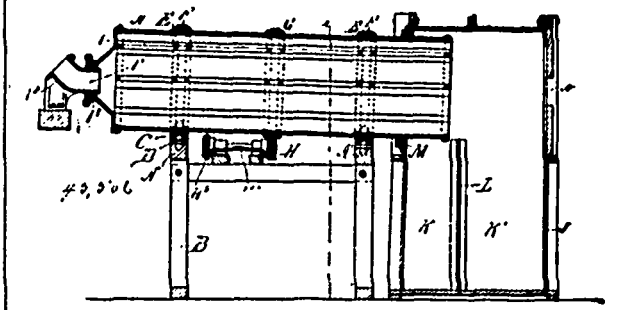
Henry Hugh Eames, Detroit, Michigan, U.S.A., 10th March, 1894; 6 years

Claim.—1st. In an ore pulverizer, the combination with the cylindrical casing and the revolving wheel provided with hammers, of a corrugated lining within the casing and an elastic backing or cushion between the corrugated lining and casing, substantially as described. 2nd. The combination in an ore pulverizer having a cylindrical casing divided into compartments by apertured partitions, and provided with revolving wheels in said compartments, of a feed hopper communicating into the centre of the first compartment, an exhaust aperture in the top of the last compartment, and a slide controlling said aperture, substantially as described. 3rd. The combination, in an ore pulverizer having a cylindrical casing divided into compartments by centrally apertured partitions and provided with a revolving wheel in each compartment, of a feed hopper communicating into the centre of the first compartment, an exhaust aperture in the top of the last compartment and hammers carried by the wheels, said hammers having their faces at an inward incline from a radial plane, substantially as described. 4th. In an ore pulverizer of the character described, the combination with the revolving wheel, of the detachable hammer block E, provided with a dove-tail tenon W^1, the cheeks E^1 E^1 secured to the wheel and provided with the dove-tail mortise W and the key c engaging in contiguous key ways in said block and cheeks, substantially as and for the purpose described.

No. 45,506. ...re Separator. (*Séparateur de minerai.*)

Henry Hugh Eames, Detroit, Michigan, U.S.A., 10th March, 1894; 6 years.

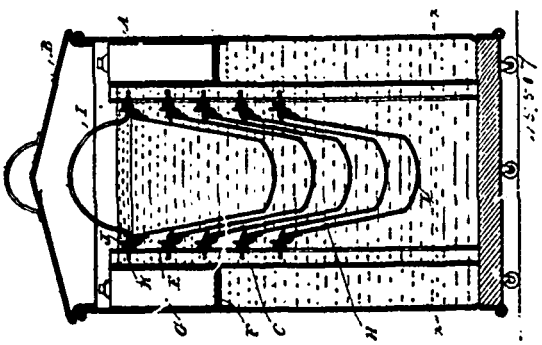
Claim.—1st. In a separator, the combination of a rotating cylindrical shell having a continuous close inner surface, and provided with means for connecting it at one end with the discharge spout of an ore mill and passing the product therefrom through the cylinder, elevating devices along the inner surface of the shell and a division board below its open discharge end, substantially as described. 2nd. In a separator, the combination of a rotating cylindrical shell having a continuous close inner surface, and provided with means for peripherically supporting and rotating the shell whereby the inside is



unobstructed, a swivelled feed spout adapted to connect one end of the shell with the discharge spout of an ore mill, a division board below the other end of the shell and elevating devices along the inner surface of the shell, substantially as described. 3rd. In a separator, the combination of the cylindrical shell having a continuous close inner surface, and provided with peripheral supports free to rotate on its horizontal axis, a peripheral gear for rotating the shell, means for conducting the product from an ore mill through the shell, a receiving chamber into which the discharge end of the shell extends and a division board dividing the chamber into bins, substantially as described. 4th. In a separator, the combination of the shell A, provided with grooved rims E, the supporting frame B, provided with the friction rollers C, the peripheral gear G and its drive connection, the head I having the swivelled feed spout I^1, the receiving chamber J and the adjustable division board L, all arranged and constructed to operate substantially as described.

No. 45,507. Fire Extinguisher.

(*Extincteur d'incendie.*)



Charles James Lockinvar MacLeod, Detroit, Michigan, U.S.A., 10th March, 1894; 6 years.

Claim.—1st. In a fire extinguishing apparatus, the combination of a tank, a series of buckets supported therein below the level of the fluid, arranged to be successively removed in a filled condition, substantially as described. 2nd. In a fire extinguishing apparatus, the combination of a tank, a series of nested buckets supported therein a short distance apart, and submerged beneath the fluid, substantially as described. 3rd. In a fire extinguishing apparatus, the combination of a tank, slotted standards at the sides thereof, having inclined notches at the sides of the slots, and a nested series of pails having lateral pins thereon adapted to engage in the notches, substantially as described. 4th. In a fire extinguishing apparatus, the combination of a tank, slotted standard at the sides thereof, having a series of inclined notches leading therefrom, a nested series of pails, bails thereon and lateral extensions of the bails adapted to engage in the notches, substantially as described. 5th. In a fire extinguishing apparatus, the combination of a tank, standards at the sides, having a series of inclined notches therein, a submerged nested series of round bottom pails, having bails, lateral extensions of the bails adapted to engage the notches, brackets at the top of the tank within, and cans or bottles containing fire extinguishing compound supported in the brackets, substantially as described.

No. 45,508. Method of Making Bread.

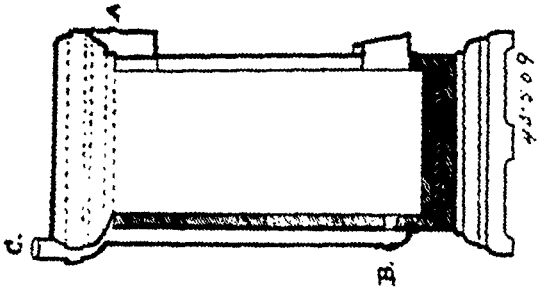
(*Méthode de faire le pain.*)

Lauritz Alexander Schiottz-Christensen, Copenhagen, Denmark, 10th March, 1894; 6 years.

Claim.—1st. The production of pure-cultured yeast for bakery purposes by stirelizing a mixture of malt, flour and water at a temperature of 72° C, in 2½ hours, the mixture being placed within a thermostat and afterwards cooled, after which is added a pure-culture of Saccharomyces cerevisiæ, the temperature being constantly regulated during the fermentation. 2nd. The method for the produc-

tion of bread by means of pure-cultured yeast as described in claim 1, which is added to one part of the flour, after which this mixture for about 8 hours is exposed to a temperature of about 15° C., this mixture afterwards being, in the ordinary manner, kneaded together with the remainder of the flour and the requisite salt.

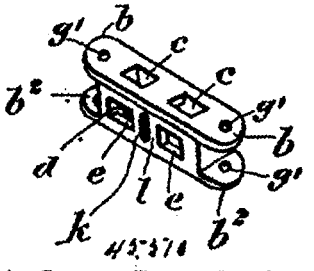
No. 45,509. Ventilator for Stoves.
(*Ventilateur pour poêles.*)



George Brousseau, Quebec, province de Québec, Canada, 10 mars 1894; 6 ans.

Résumé.—Dans un poêle ou fournaise à charbon la combinaison avec le poêle d'une porte A, ayant 4 ouvertures et d'un tuyau, tube B, C, le tout tel que décrit et pour les fins mentionnées.

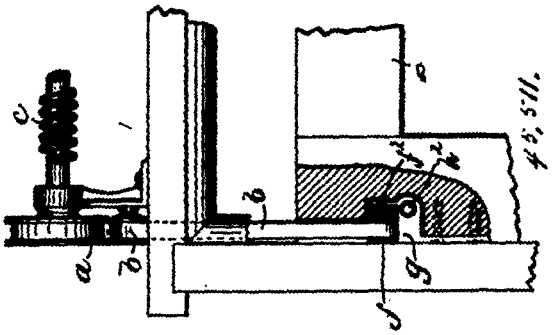
No. 45,510. Hot Water Heater. (*Calorifère à eau.*)



The Gurney Foundry Company, Toronto, Ontario, assignee of John Herbert Wynne, of Montreal, Quebec, Canada, 12th March, 1894; 6 years.

Claim.—1st. In a water heater, a sectional water header, for the purpose set forth. 2nd. In a water heater, a water header constructed of a number of independently removable sections, for the purpose set forth. 3rd. In a water heater, a water header constructed of a number of independently removable sections, and having an unobstructed vertical water passage, for the purpose set forth. 4th. In a water heater, a water header constructed of a number of removable sections communicating with the main sections of the heater and with each other, and adapted to allow the removal of one of such sections to allow of the closing of the passage to said main sections and replaced in position without disturbing the remainder of the header sections for the purpose set forth. 5th. In a water heater, the combination with the main sections having openings forming water inlets in their rear sides, of an individual and independently removable water header section for each main section communicating with each other and with the inlet in the rear side of said main sections, for the purposes set forth. 6th. In a water heater, the combination with the main sections having openings forming water inlets in their rear sides, of the independently removable water header sections having openings in their top, bottom and inner sides with means for supporting and independently securing them all together and to the main sections, for the purposes set forth. 7th. In a water heater, the combination with the main fire pot section A, having integral water header section *a* communicating therewith and presenting an opening in its upper side, and the main sections A^1, A^2, A^3, A^4, A^5, arranged above said fire pot section, and having openings forming water inlets in their rear sides, of the independently removable water back sections a^2, a^2, a^3, a^4, a^5, arranged above and supported by said water back sections *a*, and having openings in their bottom, top and inner sides to effect an unobstructed water way between all the water header sections and communication thereof with each main section, and means for independently securing said header sections to each other and to said main sections, for the purposes set forth. 8th. In a water heater, the combination of the main fire pot section A having integral water header section *a* communicating therewith and presenting an opening in its upper side, the main sections A^1, A^2, A^3, A^4, A^5, arranged above said section A, and having openings in their rear sides, the water header sections a^1, a^2, a^3, a^4, a^5, having openings *c*, *d* and *e* respectively in their upper, bottom and inner sides, the latter opening *e* communicating with the openings in the rear sides of the main sections, and those *c*, *d*, with each other, and each water header section having corresponding perforated flanges as *b*, vertical bolts passing through such flanges to hold said water header sections together, and bolts passing horizontally through said header sections to secure them to the main sections, as set forth.

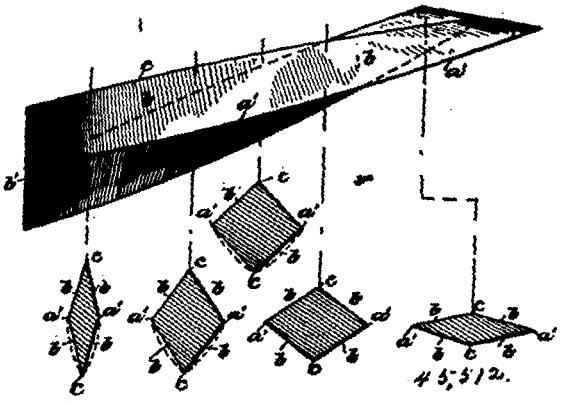
No. 45,511. Sash Balance. (*Contre-poids de croisée.*)



The Rhoades Sash Balance Company, San Francisco, California, assignee of Anson Merrick Howard, New Haven, Connecticut, U.S.A., 12th March, 1894; 6 years.

Claim.—The combination with a spring actuated sash suspender of a take-up spool adapted to be secured to the sash and have the lower end of said suspender connected therewith, and wound thereon, the worm gear connected with the said spool and a worm meshing therewith provided with a key shaft accessible through an opening in the sash, substantially as and for the purpose described.

No. 45,512. Body for Vessels, &c.
(*Coque de vaisseaux, etc.*)

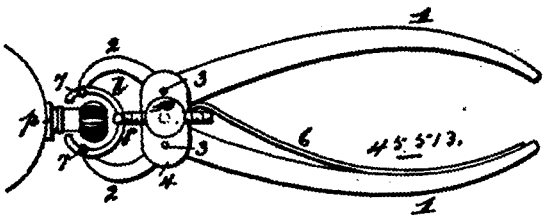


Francis Eugene Mills and Horace Atwater Deming, both of San Francisco, California, U.S.A., 12th March, 1894; 6 years.

Claim.—1st. A body of least resistance substantially as described, consisting mainly and substantially of two laterally adjoined and longitudinally reversed wedges, connected and merged together laterally by four sides whose transverse planes are at all points diagonal to the lines of taper of both wedges, and twist transversely 90 degrees in their entire length, the twist of adjacent sides being in opposite directions, and all terminating in and merging into two chisel-form ends which stand at right angles with each other, substantially as and for the purpose herein described. 2nd. A body of least resistance substantially as described, which consists substantially of two laterally adjoined and longitudinally reversed wedges connected and merged together by four transversely twisting sides diagonal to the lines of taper of both, the twist of adjoining sides being 90 degrees, in opposite directions, all terminating and merging in two chisel-form ends which stand at right angles with each other, the longitudinal taper of the wedges, respectively, being in regular curves commencing parallel with the line of motion at the wide end, and continuing on a single radius to the opposite end, substantially as and for the purpose described. 3rd. In a boat, or other floating craft partially immersed in the water, a hull, which at and below the load water line, is relatively wide at one end, and tapers continuously and horizontally to a narrow end while the longitudinal centre of the extreme bottom slopes upward continuously in the opposite direction from the lowest point of the narrow end to the load water line at the wide end, the sides below the load water line flaring upward and outward transversely from the longitudinal centre of the inclined bottom to the load water line, the flare of the sides commencing at the narrow and deep end, where they are substantially vertical, and increasing in degree all the way to the wide end, at or a little above the load water line, the flaring sides having a transverse twist in opposite directions, substantially as and for the purpose herein described. 4th. A non-resistant device

substantially as described, having its adjacent surfaces subject to the action of the resisting fluid merged at one end in a chisel-form edge, sloped upward on their longitudinal meeting edges from said chisel-form edge to a plane at right angles thereto, and flared or twisted continuously in opposite directions from the chisel-form end till they merge in the plane of the upper edge of the bottom slope or their longitudinal meeting edges, substantially as set forth. 5th. In a boat, or other floating craft partially immersed in water, a hull, which, at and below the load water line has the exterior form substantially, of two laterally adjoined and longitudinally reversed wedges, connected and merged together by flaring sides which in their entire length are transversely diagonal to the lines of taper of both, and have a transverse twist of 90 degrees in opposite directions, the lines of longitudinal taper being regular curves, the horizontal curves commencing tangential to the line of the boats motion at the wide end, and continuing with a single radius to the narrow end, while the vertical taper starts parallel with the line of motion at the lowest point of the narrow end and continues on a single radius to the load water line at the wide end, substantially as and for the purpose herein described. 6th. A non-resistant device, substantially as described, having its adjacent faces subject to the action of the resisting fluid merged at one end in a vertical edge, and terminating at their opposite ends in a common horizontal plane, and tapered continuously on a single radius between said ends, substantially as set forth.

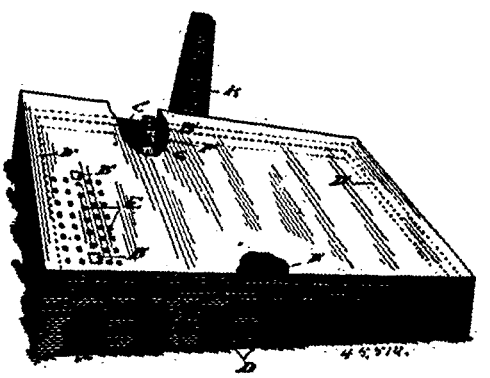
No. 45,513. Watchmaker's Tool.
(*Outil d'horloger.*)



Henry W. Wildt, Alexandria, Virginia, U.S.A., 12th March, 1894; 6 years.

Claim.—1st. The watch-bow pliers, constructed substantially as herein described with hooked jaws adapted to engage with the watch-bow for springing the same open, substantially as described. 2nd. The watch-bow pliers constructed with a pair of handles and jaws 1, 2, formed with hooked ends to engage with the watch-bow, fulcrumed together and pressed outwardly by means of suitable spring 6, as described. 3rd. The pivoted jaws 1, 2, having hooked ends to engage with the watch-bow near its ends for springing it open in combination with the hooked bar to receive the bow and secure it against endwise motion. 4th. The combination of the hooked jaws 2, and the hooked holding-bar 8 adjustable longitudinally to suit watch-bows of different sizes, as explained.

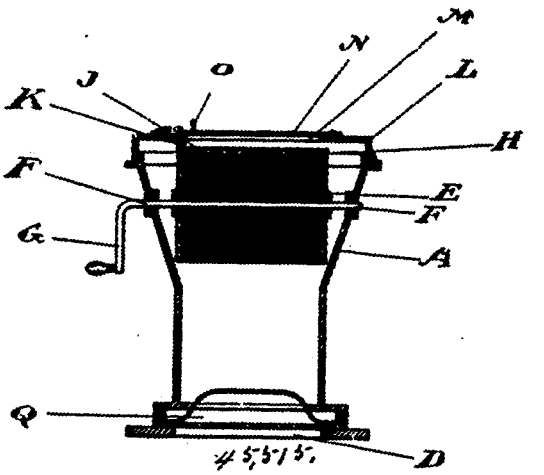
No. 45,514. Brick Kiln. (*Four à briques.*)



William A. Wilford, Todmorden, Ontario, Canada, 12th March, 1894; 6 years.

Claim.—1st. In a brick kiln, a series of independent adjacent chambers with intervening walls between them, having horizontal passages opening from one chamber into the next adjoining chamber, two main flues, one of said chambers discharging into one of the main flues, and the next adjoining chamber discharging into the other main flue, and means for conveying the gases from the main flues and discharging them into the atmosphere, each of said chambers provided with a series of draft openings to supply a current of atmospheric air to the fire within the chamber, and means for supplying fuel to the fire within the chamber, substantially as specified. 2nd. In a brick kiln, a series of independent adjacent chambers with intervening walls, horizontal passages connecting the chambers, means for closing the said passages two main flues, a supplemental flue for each of said chambers, discharging into either one of the main flues, and means for conveying the gasses from the main flues, substantially as specified. 3rd. In a continuous brick kiln, the combination of a series of independent adjacent chambers, two central longitudinal main flues, between the rows of chambers, a supplemental flue for each chamber, the supplemental flues of the alternate chambers discharging into one of the main flues, and the supplemental flues from the intervening chambers discharging into the other main flue, an outlet from the main flues, a series of passages formed through the walls of each of the chambers to admit of a current of atmospheric air to the chamber, a series of vertical passages formed through the top of each of the chambers to admit of the entry of the fuel to the chamber, a series of horizontal passages formed through the dividing wall or partition between the adjacent chambers to permit of the fire being drawn from one chamber into the other, substantially as specified. 4th. In a continuous brick kiln, a series of independent adjacent chambers with intervening walls between, having horizontal passages opening from one chamber into the next adjoining chamber, each of said chambers provided with a series of draft openings to supply a current of atmospheric air to the fire within the chamber, means for supplying fuel to the fire within the chamber, a flue located along the top of the said chambers and adapted to convey the heated air from one chamber to any other desired chamber, openings from each of said chambers into said flue, and a damper to close each of said flues, substantially as specified.

No. 45,515. Cinder Sifter. (*Crible.*)



George R. Gray, Toronto, Ontario, Canada, 12th March, 1894; 6 years.

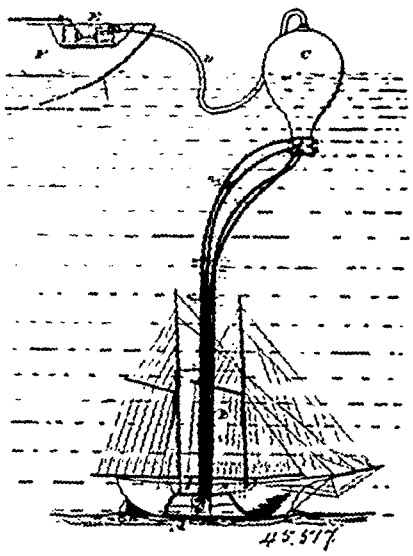
Claim.—1st. A sifter comprised of a hopper A, having a lid L, to close its upper end, an opening M through the said lid, and a cover N to close the said opening, a reticulated cylinder mounted within the upper end of the hopper and adapted to be revolved, an opening into the reticulated cylinder, and a reticulated slide to close the said opening, substantially as described. 2nd. In an ash-sifter, the combination of a hopper A, having a lid L to close its upper end, an opening M through the said lid, a cover N to close the said opening, a reticulated cylinder journalled within the upper end of the hopper and adapted to be revolved, an opening into the said cylinder, a reticulated slide to close the said opening, a supplemental base to which is hinged the lower end of the said hopper, an opening through the said supplemental base, and a supplemental hopper by means of which the ashes, &c., are introduced into the said cylinder, substantially as described. 3rd. In a sifter, the combination of a hopper A, a lid L to close the upper end of the hopper, an opening M through the said lid, a cover N pivotally connected to the said lid to close the said opening, a reticulated cylinder journalled in the upper end of the said hopper, an opening into the said cylinder, a recticulated slide J to close the said opening, a crank to revolve the said cylinder, a base B for the said hopper, and a pan Q enclosed by the said base, a supplemental hopper adapted to enter the said opening in the cylinder, substantially as described.

No. 45,516. Smokeless Powder.
(*Poudre sans fumée.*)

The United States Smokeless Powder Company, assignee of Eric A. Starke, all of San Francisco, California, U.S.A., 12th March, 1894; 6 years.

Claim.—A compound of an ammonium chromate, potassium picrate, and ammonium picrate, substantially in the proportions, as herein described.

No. 45,517. Method of and Means for Raising and Floating Sunken Vessels. (*Méthode et moyen de soulever et mettre à flot les vaisseux coulés.*)

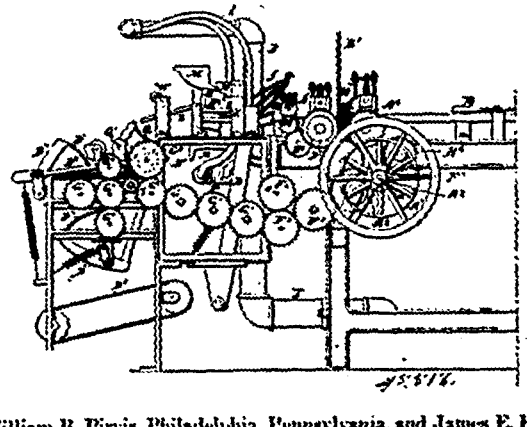


Henry Huston, assignee of James W. Grant and Joseph Grant, all of Tacoma, Washington, U.S.A., 12th March, 1894; 6 years.

Claim.—1st. The herein described method for raising and floating sunken vessels, consisting in placing a perforated collapsible bag in the vessel to be raised, charging the bag with a fluid under pressure to expand the same, so as to displace the water in the vessel, the perforations permitting excess of fluid to escape through the same, and keeping the bag charged by constantly supplying the same with fluid under pressure, substantially as shown and described. 2nd. An apparatus for raising and floating sunken vessels, provided with collapsible and perforated bags connected with a fluid supply under pressure, substantially as shown and described. 3rd. An apparatus for raising and floating sunken vessels, comprising a floating receiver connected with an air compressor, pipes leading from the said receiver, and collapsible and perforated bags connected with the said pipes, and adapted to be placed in the hold of the vessel, substantially as shown and described.

No. 45,518. Paper Bag Machine.

(*Machine pour faire des sacs en papier.*)

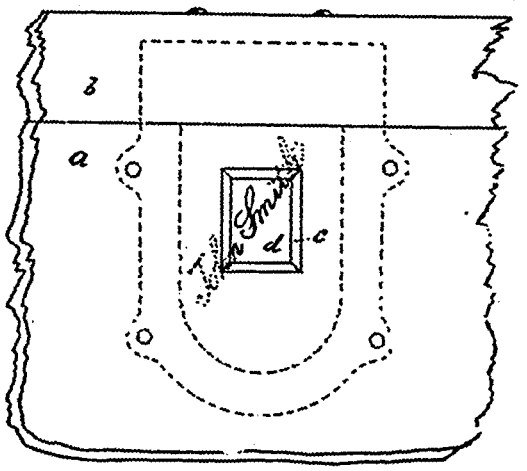


William B. Pirvis, Philadelphia, Pennsylvania, and James E. Hays, Camden, New Jersey, U.S.A., 12th March, 1894; 18 years.

Claim.—1st. In a paper bag machine, the combination of reciprocating suction formers by which the tube is carried, and mechanism to move the formers apart during their reciprocation. 2nd. In a paper bag machine, the combination of reciprocating suction formers, by which the tube is carried consisting of hinged sections. 3rd. In a paper bag machine, the combination of reciprocating frames, suction formers carried by the frames and movable with respect thereto, and mechanism to move said formers apart during their reciprocation with the frames. 4th. In a paper bag machine, the combination of reciprocating suction formers between which the tube to be formed is carried, and cams to cause the said formers to move apart from one another during their reciprocation. 5th. In a paper bag machine, the combination of two reciprocating carriers, clamping devices to clamp the carriers together, suction formers carried by the carriers and reciprocating therewith, and cam devices to guide said formers apart during their reciprocation. 6th. In a paper bag machine, the combination of reciprocating carriers, and the suction formers hinged thereto, each consisting of the two sections H^1 H^2 hinged together. 7th. In a paper bag machine, the combination of reciprocating carriers, the suction formers hinged thereto each consisting of the two sections H^1 H^2 hinged together, and an independent cam device for each former section to guide it independently of the others during the reciprocation of the carrier. 8th. In a paper bag machine, the combination of suction formers, a suction flue connected therewith, and an intermittently operated damper in the flue to produce an interrupted suction in the formers. 9th. In a paper bag machine, the combination of a pair of reciprocating suction formers, cam devices to guide the suction formers apart during their reciprocation, whereby the paper tube is opened and partially formed, and movable side folding wings to fold in the sides of the paper tube. 10th. In a paper bag machine the combination with the reciprocating and expanding suction formers of the side folding wings R R, and the cams S S, to operate said wings. 11th. In a paper bag machine, the combination of reciprocating suction formers, a suction flue, a suction creating device connected with the flue and flexible tubes connecting the flue and suction formers. 12th. In a paper bag machine, the combination of the reciprocating carriers C, C, the suction formers H, H hinged thereto, the folding wings R, R hinged to one of the carriers adjacent to the formers H, H and on a transverse axis, the cams S, S located in the path of the wings when the carriers are reciprocated and means to move the formers apart during the reciprocation thereof. 13th. In a paper bag machine, the combination of reciprocating suction formers, means to move said formers apart during their reciprocation to open up the end of the tube, side folders to fold in the sides of the open end of the tube, and strippers to strip the folded tube from the formers. 14th. In a paper bag machine, the combination of reciprocating suction formers, cams to guide said formers apart during their reciprocation, projecting parts carried by the formers and running in contact with the cams, and springs to hold the projecting parts in contact with the cams. 15th. In a paper bag machine, the combination of a pair of reciprocating carriers, suction formers carried thereby, means to move said suction formers apart during their reciprocation, and means to clamp said carriers together during their reciprocation. 16th. In a paper bag machine, the combination of perforated suction formers, between which the end of the paper tube to be formed is received, consisting of hinged sections, and mechanism to move said formers apart from a horizontal to a substantially vertical position. 17th. In a paper bag machine, the combination of perforated suction formers between which the end of the paper tube to be formed is received, consisting of hinged sections, and mechanism to move said formers apart and vary the angular relations to their sections. 18th. The combination with the suction formers, of the movable folding fingers actuated to move over the faces of the suction formers when they are opened to assist the suctions in shaping the side creases in the bellows side fold of the paper tube. 19th. The combination with the suction formers, of the movable folding fingers adapted to move over the faces of the suction formers when they are opened to assist the suction in shaping the side creases in the bellows side fold of the paper tube, and means to actuate the folding fingers while the formers are moving. 20th. The combination with the suction formers, of the movable folding fingers adapted to move over the faces of the suction formers when they are opened to assist the suction in shaping the side creases in the bellows side fold of the paper tube, means to actuate the folding fingers while the former are moving, and mechanism to return the fingers after they have operated. 21st. The combination with the suction formers, of the movable folding fingers adapted to move over the faces of the suction formers when they are opened to assist the suction in shaping the sides creases in the bellows side fold of the paper tube, means to actuate the folding fingers while the formers are moving, a lock to lock said fingers after they have been actuated, and means to release the lock and return the fingers after they have operated. 22nd. The combination in a paper bag machine with the moving suction formers, of the spring pressed folding fingers, the finger actuating device X, the locking pins W, and the means W^1 to release the locking pins. 23rd. The combination in a paper bag machine with the moving suction formers, of the folding wings R, R, having the cam pieces R^2, R^2, and the cam arms S, S. 24th. In a paper bag machine, a bottom forming device consisting of frames hinged together at the rear and adapted to clamp the paper tube section between their front edges, and movable suction formers carried by the frames and extending beyond their front edges. 25th. In a paper bag machine, a bottom forming device consisting of frames hinged together at the rear and adapted to clamp the paper tube section between their front edges, a lock adapted to lock the upper frame in a raised position so as to admit the paper tube, and movable suction formers carried by the frames and extending beyond their front edges. 26th. In a paper bag machine, a bottom forming device consisting of frames hinged together at the rear and adapted to clamp the paper tube section between their front edges, a lock adapted to lock the upper frame in a raised position so as to admit the paper tube, movable suction formers carried by the frames and

extening beyond the front edges, and a trip to operate the lock and release the frame. 27th. In a paper bag machine, a bottom forming device consisting of frames hinged together at the rear and adapted to clamp the paper tube section between their front edges, a lock adapted to lock the upper frame in a raised position so as to admit the paper tube, movable suction formers carried by the frames and extending beyond their front edges, a trip to operate the lock and release the frame, and a second trip to operate the lock and relock the frame. 28th. The combination in a paper bag machine of suction formers between which the paper tube is fed, feeding rollers to feed the tubes to the formers, and means to intermittently separate the feeding rollers and release the same. 29th. In a paper bag machine, the combination of intermittently actuated clamping frames between which the paper tube to be formed is fed, movable suction formers located in front of the clamping frames for forming the ends of the tube when clamped by the frames, and intermittently separated feeding rollers to feed the paper tube sections between the clamping frames and release them when the frames are actuated to clamp the tube. 30th. In a paper bag machine, the combination of bottom forming devices, the feed rollers B^4, B^4 arranged to feed paper tube sections to the forming devices, and the intermittently movable arms P carrying one of the feed rollers B^4. 31st. In a paper bag machine, the combination with bottom forming devices, of stripping devices to strip the bag sections from the bottom forming devices, and a reciprocating smoothing plate arranged adjacent to the stripping devices to act upon the bag bottom as it is stripped from the bottom forming devices. 32nd. In a paper bag machine, the combination with the bottom forming devices, and the stripping roller C^4, of the reciprocating smoothing plate Q. 33rd. In a paper bag machine, the combination with bottom forming devices, of stripping devices adjustable with reference to the bottom forming devices to suit the bag sections of different sizes. 34th. In a paper bag machine, the combination with bottom forming devices, of an adjustable frame located adjacent thereto and stripping devices carried by the adjustable frame. 35th. The bottom formers consisting of the hinged frames C, C, suction formers H, H, arm C^1, and dog C^2, adapted to engage and carried one by each frame C, C, the trip O^1 arranged to actuate the dog C^2 and disengage it from the arm C^1, and the trip O^2 to actuate the arm C^1, and re-engage it with the dog C^2.

No. 45,519. Self Locking Lock. (*Serrure automatique.*)

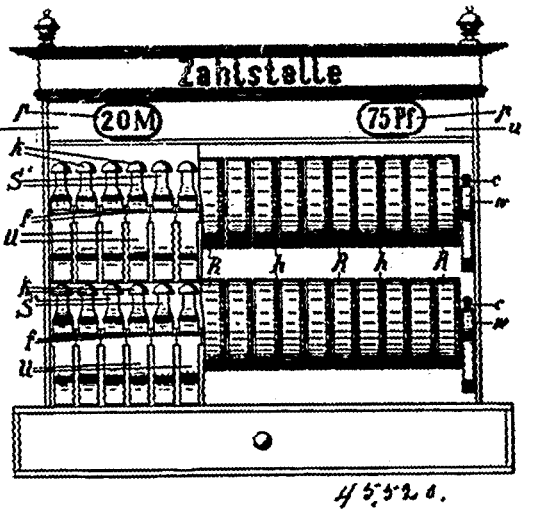


45,519.

S. E. St. Onge Chapleau, of Ottawa, Ontario, Canada, 12th March, 1894; 6 years.

Claim.—1st. In a self locking lock, a base plate provided with a rim, a card seal recess, a flange, jaw pin and a rest integrally cast and having spring jaws and a spring common to both jaws. 2nd. In a self locking lock, a base plate with integral card seal recess, and a rim having under notches, a back plate with corresponding shoulders, spring jaw pin holes and key holes. 3rd. In a self locking lock, the combination of a base plate and integral rim and recess, jaw pins, spring jaws, rest, spring and back plate, with a striking plate bolt, a card seal and a box or other vessel with a cover, as described and shown. 4th. In a self locking lock, spring jaws actuated by a key, in combination with a card seal and a striking plate bolt. 5th. In a self locking lock provided with a key and key hole, the combination of a recess, a card seal and a striking plate bolt attached to the cover of a box or other vessel. 6th. In a box or chest, etc., with a self locking lock, an aperture to exhibit a card seal over the key hole. 7th. In a self locking lock, a base plate with integral rim and spur, and having a card aperture in its centre and a beam to receive a middle plate provided with jaw pin holes and a key hole, in combination with a key, a card seal, spring jaws, a spring, a back plate, etc., a striking plate bolt and a box or other vessel with cover, substantially as described and shown and for the purposes set forth.

No. 45,520. Till. (*Tiroir.*)



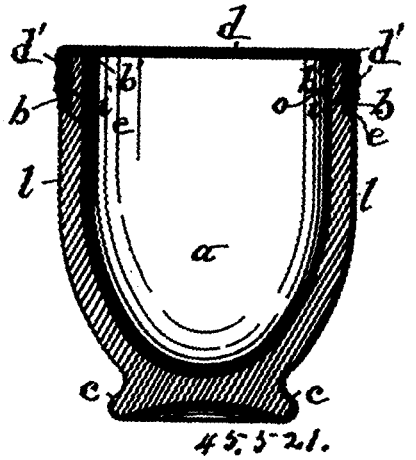
45,520.

Emanuel H. Müller, Rebnitz, Germany, 13th March, 1894; 6 years.

Claim.—1st. In a controlling till, the combination of stamps S^1 and S^2, reciprocating under the influence of springs, and provided on their under surfaces with raised numerals, substantially as and for the purposes herein described with reference to the accompanying drawings. 2nd. In a controlling till, the combination of stamps S^1 and S^2, with sliding tenons z, and extensions a^1, drums R, with cogs h, holding the springs o, levers H pivoted on shafts I, stops g, levers n pivoted at r, releasing catches W, spindles t and plates p, and means for operating the same, all substantially as and for the purpose herein described with reference to the accompanying drawings. 3rd. In a controlling till, the modification consisting of the stamps S^1 and S^2, drums R with cogs h, springs 1, provided with claws 2, and means for operating the same, substantially as and for the purpose herein described with reference to the accompanying drawings.

No. 45,521. Egg-Cup and Cooker.

(*Coquetier et appareil pour faire cuire les œufs.*)

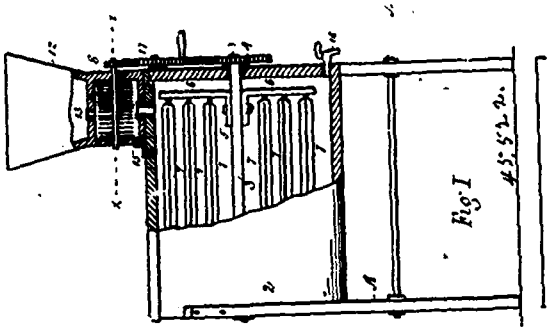


45,521.

William R. Hill, Syracuse, New York, U.S.A., 13th March, 1894; 6 years.

Claim.—1st. The improved egg-cup and cooker, consisting of the cup a, composed of vitrified material and formed with the supporting base or foot c for sustaining the cup in an upright position, the metallic band b, permanently attached to the top portion of the cup, and the cover d, detachably secured to said band, substantially as set forth. 2nd. The within described egg-cup and cooker, consisting of the cup a, composed of vitrified material approximately egg-shaped internally for receiving the egg divested of its shell, and formed with the supporting base c, and with the circumferential rabbet e, around the exterior of its top portion, the metallic band b, cemented in said rabbet, and having its top edge bent inward on to the top edge of the cup, and the metallic cover d, formed with the circumferential flange d^1, embracing the band, substantially as described and shown.

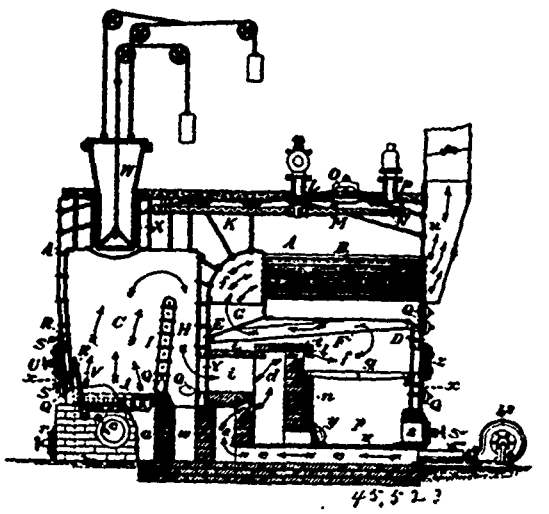
No. 45,522. Churn. (*Baratte.*)



George G. Davis, Combination, Montana, U.S.A., 13th March, 1894; 6 years.

Claim.—The combination with a churn, of the herein described cream receptacle or chamber, removably attached to the top of the churn, the rotatable articulating fingers or breakers within the chamber, the adjustable apertures adapted to regulate the admission of the cream to the chamber and its subsequent discharge into the body of the churn, the separable main shaft, and the gathering-bars actuated by the shaft all constructed and arranged, substantially as and for the purpose herein set forth.

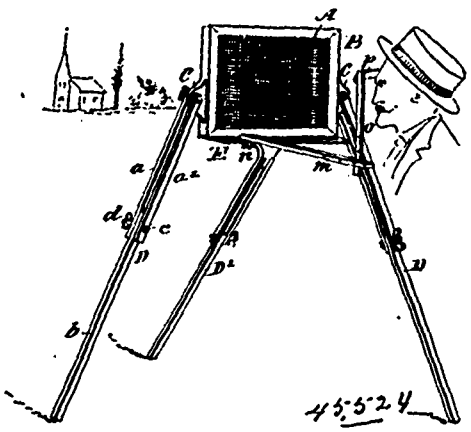
No. 45,523. Steam Generator. (*Générateur à vapeur.*)



George E. Belmor, San Francisco, California, U.S.A., 13th March 1894; 6 years.

Claim.—1st. In a combined steam boiler, gas-producing and gas-consuming furnace, a generating chamber formed integrally with the boiler, surrounded by heating surfaces and water spaces, so the heat of the gas producing chamber or furnace will be directly communicated to the water in the boiler and utilized, in the manner substantially and for the purposes as specified and herein set forth. 2nd. In a combined steam boiler, gas-producing and gas-consuming furnace, a gas-generating furnace or chamber situated within the boiler and forming an integral part thereof, surrounded by heating surfaces and water spaces as herein shown, and made in tapering form from the top downward, so the fuel as it is consumed and descends, is at the same time condensed or compressed, substantially as described. 3rd. In a combined steam boiler, gas-producing and gas-consuming furnace as herein described, a gas-producing chamber formed integrally with the boiler, surrounded by heating surfaces and water, a vertical feeding tube also integrally formed with the boiler, extending upward through the steam space, and provided with valves or sealing devices to admit fuel and exclude the air, in the manner substantially as described. 4th. In a combined steam boiler, and gas-consuming furnace, combining and combustion chambers, as herein described, and in combination therewith a common grate and its accessories, so the boiler if required can be fired in the usual manner, and independent of the gas-producing and gas-consuming elements, in the manner substantially and for the purposes described. 5th. In a gas-producing and gas-consuming furnace, as herein described, a gas-generating chamber, a down-take passage therefrom connecting with a combining chamber in which the gas is mingled with air; air impelling apparatus connected with both the gas-producing and combining chambers, so the pressure or quantity of air supplied to the two chambers can be relatively regulated and thus control the volume of gas generated and burned in a given time, in the manner substantially and for the purposes specified. 6th. In a gas-producing and gas-consuming furnace, as herein described, a gas-generating furnace or chamber, connecting with a combining and a final combustion chamber in which the gas is consumed, the intermediate or combining chamber lined with refractory material, and so arranged as to be maintained at high temperature, causing the mingled air and gas to be thoroughly ignited and expanded before entering the final combustion chamber, in the manner substantially as herein shown and described.

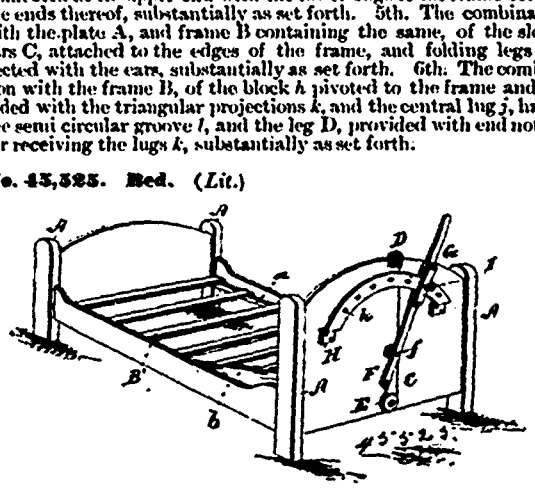
No. 45,524. Lucidagraph. (*Lucidagraphe.*)



Thomas Alexander McFarland, Chicago, Illinois, U.S.A., 13th March, 1894; 6 years.

Claim.—1st. In a sketching device, a glass plate having a ground or abraded drawing surface provided at intervals with unground transparent sight spaces, substantially as set forth. 2nd. A sketching device, a ground glass plate having on its ground or abraded face unground transparent sight spaces in longitudinal and transverse lines, substantially as set forth. 3rd. A sketching device, comprising a frame, a ground glass plate therein and having on its ground or abraded face unground transparent sight spaces, swinging legs D, adjustably pivoted to the ends of the frame, and a swinging leg D^1, pivoted to the lower edge of the frame, substantially as set forth. 4th. The sketching apparatus, comprising an open frame having a graduated glass plate therein through which the artist views the landscape or object to be sketched, legs adjustably secured at their upper ends to the ends of the frame, a slotted plate on the lower edge of the frame, an arm having a set screw at its inner end extending through the slot, a head-rest adjustably secured to said arm to swing toward, and from the frame and the swinging leg pivotally connected at its upper end with the lower edge of the frame between the ends thereof, substantially as set forth. 5th. The combination, with the plate A, and frame B containing the same, of the slotted ears C, attached to the edges of the frame, and folding legs connected with the ears, substantially as set forth. 6th. The combination with the frame B, of the block *h* pivoted to the frame and provided with the triangular projections *k*, and the central lug *j*, having the semi circular groove *l*, and the leg D, provided with end notches for receiving the lugs *k*, substantially as set forth.

No. 45,525. Bed. (*Lit.*)

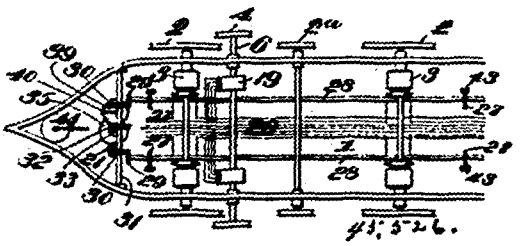


Benjamin Ottinger, Georgetown, Texas, U.S.A., 14th March; 1894; 6 years.

Claim.—1st. The combination with a bedstead of ordinary or suitable construction, with the hinged head section and mechanism for raising and lowering the same to its normal position, substantially as described and for the purpose set forth. 2nd. In an invalid bed, the combination of the interior frame consisting of two sections, the movable portion being adjusted by means of flexible connection passing over a pulley D, and around pulley E, connected

to the end of lever G, and suitable means for retaining said lever in any desired position, substantially as described. 3rd. In an invalid bed, the combination with the hinged head section, having attached thereto a cord passing over a series of pulleys and attached to a lever F, which embraces a semi-circular rack H, and a suitable locking device, substantially as described. 4th. In an invalid bed, the combination of the movable head section, having attached thereto a flexible connection passing over a series of pulleys, said connection being secured to a lever F, having a slot G, for the reception of the semi-circular rack A, said rack being provided with apertures at equi-distance and a locking pin I, passing through the elongated lever F, and the apertures *h, h*, of the rack H, all parts being arranged and operating, substantially as described.

No. 45,526. Car. (*Char.*)



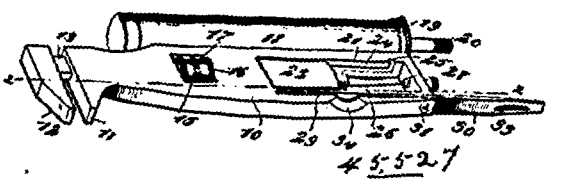
Henry William Richner and George Nathan Chase, St. Louis, Missouri, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. In combination with a car or other means of transportation, of æroplanes in the form of blades arranged one above the other, and means for controlling the inclination of said æroplanes, substantially as described. 2nd. In combination with a car or other means of transportation, of æroplanes in the form of blades arranged one above the other, mounted above the car, and means for controlling the inclination of said æroplanes, substantially as described. 3rd. In combination with a car or other means of transportation, of an elevated way in which said car runs, æroplanes on the top of the car in the form of blades arranged one above the other, and friction brakes on the under side thereof, substantially as described. 4th. In combination with a car or other means of transportation, of æroplanes in the form of blades arranged one above the other on the top of the car, an elevated way provided with tracks, on which said car runs, and wheels on the under side of the car adapted to be forced up by the air pressure and engage the lower rails, whereby they act in the capacity of friction-brakes, substantially as described. 5th. In combination with a car or other means of transportation, of standards mounted on the top of the car, æroplanes hinged to the standards and provided with stiffening ribs on their upper faces, an operating-rod for said æroplanes, and means for actuating the operating-rod, substantially as described. 6th. In combination with a car or other means of transportation, of standards mounted on the top of the car, æroplanes hinged to the standards, a rod connected to, and adapted to operate, the æroplanes through the medium of links, and means for actuating the rod, substantially as described. 7th. In combination with a car or other means of transportation, of standards mounted on the top of the car, æroplanes hinged to said standards, rods connected at their upper ends by a cross-piece, adapted to operate the æroplanes, and means for actuating the vertical sections of the operating-rods simultaneously, substantially as described. 8th. In combination with a car or other means of transportation, of æroplanes, rods for operating the æroplanes, racks on the lower ends of the operating-rods, actuating wheels meshing with the rocks, and guides for the rods, substantially as described. 9th. In combination with a car or other means of transportation, of æroplanes, arranged in banks along the top of the car, and means for operating said banks simultaneously, substantially as described. 10th. In combination with a car or other means of transportation, of an air cylinder provided with a piston-head and rod, the latter extending through the bottom of the car, a lever connected to said piston-rod, a link connected to the opposite ends of the lever and to the brake-rod, links arranged on the brake-rod along its length, and having their opposite ends connected to the axles of friction-wheels, and a fulcrum over which said latter links are drawn, whereby the friction-wheels are elevated, substantially as described. 11th. In combination with a car or other means of transportation, of a brake-rod and means for moving the same longitudinally, friction-wheels and their axles, links secured to the axles of the friction-wheels and to the brake-rod, and a fulcrum over which said links are drawn, whereby the friction-wheels are moved toward or from the body of the car, substantially as described.

No. 45,527. Combination Tool. (*Outil à combinaison.*)

Robert Harris, Buffalo, New York, U.S.A., 14th March, 1894; 6 years.

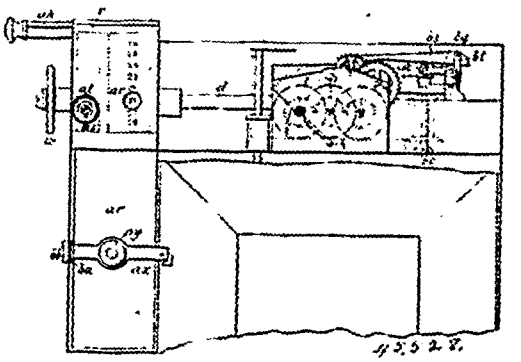
Claim.—1st. In a tool of the kind described, the combination with the wrench, of the air pump rigidly fastened to the wrench handle, substantially as described. 2nd. The combination, with the wrench having a longitudinal groove in its handle, of the screw-



driver blade pivoted in the handle and adapted to swing into the groove, substantially as described. 3rd. The combination, with the wrench handle having a longitudinal groove therein, of the screw-driver blade pivoted in the handle and adapted to swing into the groove, the blade being longitudinally slotted where it receives the pivot pin, substantially as described. 4th. The combination, with the wrench having a longitudinally slotted handle, of the oiler held in the slot and detachable therewith, substantially as described. 5th. The combination, with the wrench having a longitudinally slotted handle and a threaded hole in its ends, of the oiler held in the slot and provided with a nozzle adapted to extend through the threaded hole, and a thumb screw adapted to fit the threaded hole and close the end of the nozzle, substantially as described. 6th. The combination, with the wrench, having a longitudinally slotted handle and a threaded hole in the end thereof with grooves in the side walls of the slot, of the oiler having a nozzle to enter the threaded hole, and side trunnions to run in the grooves, substantially as described. 7th. The combination, with the wrench having a slotted handle with grooves in the side walls of the slot, the grooves merging in branch grooves leading through one side of the handle, of the oiler having trunnions to run in the grooves, the trunnions being on oppisite sides and near opposite ends of the oiler, substantially as described. 8th. A combination tool, comprising a wrench, an air pump, a screw-driver, and an oiler combined and arranged, substantially as described.

No. 45,528. Coin Freed Gas Meter.

(*Gazomètre actionné par une pièce de monnaie.*)



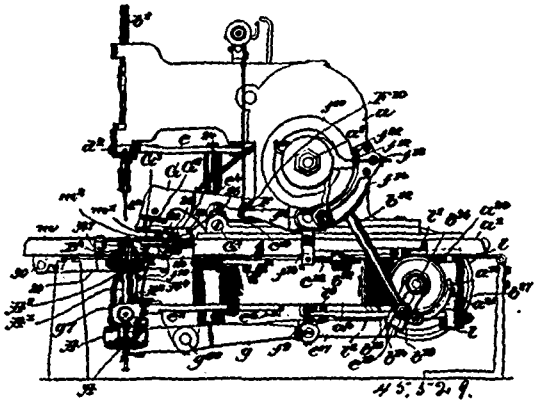
George Carter, London, England, 14th March, 1894; 6 years.

Claim. 1st. In coin freed gas meters, the combination with the index spindle, the longitudinally sliding screwed rod *d*, the worm *a*, and toothed pinions *c*, operatively connecting the said index spindle and screw rod, of the means for revolving the said rod whereby it is moved longitudinally to permit the said index spindle to revolve and return the said parts to their normal positions, substantially as set forth. 2nd. In coin freed gas meters, the combination with the revoluble screwed rod *d*, turning with and sliding in the sleeve *m*, and the gathering wheel *n*, prevented from turning backwards by the detents *o, o*, of the pawl lever *y* pivoted in the coin receiver *x*, substantially as set forth. 3rd. In coin freed gas meters, the combination with the gathering wheel *n*, of a rotary coin receiver *x*, a pawl lever *y*, pivoted to the coin receiver and capable of engaging with the wheel *n*, and a lever *a, c*, which when depressed by a coin causes the point *a, a*, to engage with the teeth *q* of the gathering wheel, the whole substantially as set forth. 4th. In coin freed gas meters, the combination of the flanged shield *a, d*, with the coin receiver *x*, substantially as described and for the purpose set forth. 5th. In coin freed gas meters, a bolt or plungers *a, b*, sliding in a casing *a, g*, which after the insertion of a coin *in* the receiver *x* presses it downwards depressing the lever *a, c*, and causing the bolt lever or detent *y* to engage with the wheel *n*, substantially as set forth. 6th. In coin freed gas meters, a price varying device comprising a circular plate *n, m, o, n*, sliding in the casing *c*, and having a stop *o, l*, which limits the angular travel of the coin receiver *x*, the whole substantially as set forth. 7th. In coin freed gas meters, the combination of a valve *b, c*, socket *b, d*, valve seat *b, f*, extension *b, g*, with holes *b, i*, and spindle *b, l*, stuffing box *b, m*, and gland *b, n*, the whole substantially as set forth. 8th. In coin freed gas

meters, the gas inlet valve controlling mechanism compressing a lever *b*, *s*, connected to the valve *b*, c by a knuckle joint, the spindle *b*, *r*, and crank *b*, *q*, and also connected by the crank *b*, *x*, and rod *c*, *a*, to the traversing rack sliding *f*, the whole arranged, constructed and operating substantially as set forth. 9th. The combination with the tangent arm *b*, *w*, of a gas meter, of a valve operating mechanism, the whole arranged, constructed and operating, substantially as set forth.

No. 45,529. Button-hole Sewing Machine.

(*Machine à coudre des boutonnières.*)

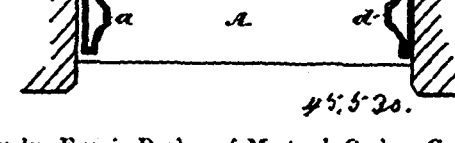


John Reece, Boston Massachusetts, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. A sewing machine containing the following instrumentalities, viz.: a clamp-frame and a stitch-frame, one relatively movable with relation to the other, a manually controlled starting device, a work-clamp, and devices to automatically close the work-clamp after the machine has been started by the manually controlled starting device preparatory to the making of a button-hole substantially as described. 2nd. A sewing machine containing the following instrumentalities, viz., a clamp-frame, and a stitch-frame, one relatively movable with relation to the other, a manually controlled starting device, a work-clamp, devices to automatically close the work-clamp after the machine has been started preparatory to the making of a button-hole, and button-hole cutting mechanism to automatically cut the material in the work-clamp preparatory to the stitching of a button-hole, substantially as described. 3rd. A sewing machine containing the following instrumentalities, viz., a clamp-frame and a stitch-frame, one relatively movable with relation to the other, a manually controlled starting device, a work-clamp, devices to automatically close the work-clamp after the machine has been started preparatory to the making of a button-hole, button-hole cutting mechanism to automatically cut the material in the work-clamp preparatory to the stitching of a button-hole, and mechanism to automatically spread the cut button-hole, substantially as described. 4th. In a sewing machine, the following instrumentalities, viz., a clamp-frame and a stitch-frame, one relatively movable with relation to the other, stitch-forming mechanism, a manually controlled starting device, a work-clamp, devices to automatically close the work-clamp after the machine has been started preparatory to the stitching of a button-hole, and devices to automatically open said work-clamp at the completion of a button-hole, substantially as described. 5th. In a sewing machine, the following instrumentalities, viz., a clamp-frame and a stitch-frame, one relatively movable with relation to the other, stitch-forming mechanism, a manually controlled starting device, a work-clamp, devices to automatically close the work-clamp after the machine has been started preparatory to the stitching of a button-hole, devices to automatically open said work-lamp at the completion of a button-hole, and devices to automatically stop the machine at the completion of each button-hole, substantially as described. 6th. In a button-hole sewing machine, a stitch-frame, a clamp-frame, stitch-forming mechanism, a work-clamp, a cam device to change the relative positions of the said frames during the stitching of a button-hole, and button-hole cutting mechanism, combined with actuating mechanism for said cam device, and with devices to rotate the said actuating mechanism and cam device at times continuously and at other times intermittingly substantially as described. 7th. A stitch-frame, a clamp-frame, and a cam device to effect the relative changes of position of said frames during the stitching of a button-hole, combined with an actuating device for said cam device, and two clutch pulleys and cams, and devices controlled thereby to automatically determine which of said pulleys shall move the said actuating mechanism and cam device, substantially as described. 8th. A stitch-frame, a clamp-frame, and a cam device to effect the relative changes of position of said frames during the stitching of a button-hole, combined with an actuating device, for said cam device and two clutch pulleys each having a continuously rotating part, and cams, and devices controlled by said cams, whereby the said actuating device may be automatically put under the control of either of the said clutch pulleys and rotate the said actuating device at a high speed or at a slower speed, substantially as described. 9th. The work-clamp, combined with a starting device located between the upper and lower members thereof and adapted to be actuated as the material is put into the said clamp, substantially as described. 10th. The work-clamp, combined with a starting lever occupying a position to cross a line coincident with the length of the button-hole, substantially as described. 11th. A button-hole sewing machine containing stitch-forming mechanism, a work-clamp, and a throat plate, adapted to over-stitch the side edges and eye end of a button-hole with radiating stitches, and a cutting mechanism, combined with a manually controlled starting device, to start the machine, and devices to thereafter automatically start the different parts, to effect first the automatic closing of the work-clamp and then the cutting of the button-hole and the stitching thereof, substantially as described. 12th. In a machine for sewing button-holes, a stitch-frame, a clamp-frame, a work-clamp, stitch-forming mechanism comprising an eye-pointed needle located above the material, a complemental stitch-forming device located below the material and both rotatable substantially in unison about a common centre when stitching the eye of the button-hole by radiating stitches, a cam device to change the relative positions of the said frames during the operation of stitching a button-hole, a manually controlled starting device to start the machine, and devices to thereafter automatically close the work-clamp to clamp the material, substantially as described. 13th. In a machine for sewing button-holes, a stitch-frame, a clamp-frame, a work-clamp, stitch-forming mechanism comprising an eye-pointed needle located above the material, a complemental stitch-forming device located below the material and both rotatable substantially in unison about a common centre when stitching the eye of the button-hole by radiating stitches, button-hole cutting mechanism, a cam device to change the relative positions of the said frames during the operation of stitching a button-hole, devices for automatically closing the work-clamp, and devices to close the cutting mechanism, combined with a manually controlled starting device whereby the movement of the said starting device manually starts in motion the device for automatically closing the work-clamp, and causes the button-hole cutting mechanism to be actuated, substantially as described. 14th. The combination with a work-clamp, a starting device to start the machine; devices to automatically close the work-clamp, a clutch-mechanism, and intermediate devices to effect the engagement of the clutch, of a restoring device to automatically restore the starting device to its normal position, substantially as described. 15th. The worm-shaft, the cam-device having worm-teeth, a ratchet-wheel at one end of the worm-shaft, the main shaft a^2, a clutch-pulley normally loose thereon, and devices between said main-shaft and said ratchet-wheel to rotate the worm-shaft, combined with a clutch pulley loose at the opposite end of said worm-shaft, a co-operating clutch member fast on said shaft, devices to couple one of said clutch pulleys operatively to the shaft on which it is mounted, and to simultaneously unclutch the other pulley, substantially as described. 16th. The lever b^{32}, the shaft b^{34}, a pulley normally loose thereon, clutch parts carried by said pulley and said shaft, connections between said loose pulley and said lever, a bar as c^{30}, and a spring c^{32}, combined with a starting lever co-operating with said bar, to operate, substantially as described. 17th. A work-clamp, a lever as e^{17}, connections between it and the said work-clamp, and a cam, combined with a slide rod actuated by said cam and moving the said lever to close the work clamp automatically, substantially as described. 18th. A work-clamp, a lever as e^{17}, connections between it and the said work-clamp, and a cam, combined with a slide-rod actuated by said cam and moving the said lever to close the work-clamp automatically, and an adjusting device to close the work-clamp more or less, substantially as described.

No. 45,530. Window Heating Apparatus.

(*Calorifère pour fenêtres.*)



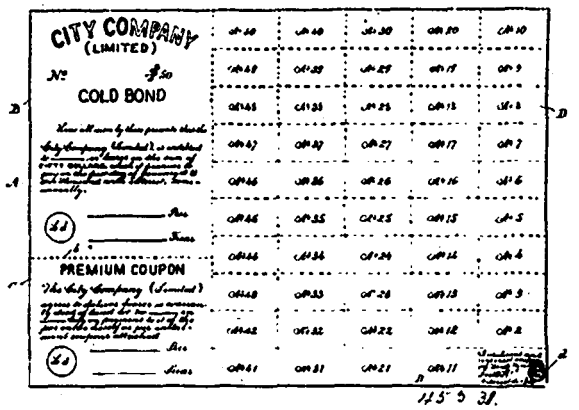
Alexander Francis Dunlop, of Montreal, Quebec, Canada, 14th March, 1894; 6 years.

Claim.—1st. A window heater in the form of a loop, comprising vertical sides, and a horizontal connection between them, adapted to fit within the window space above the ledge or seat thereof, in close proximity to the window panes, and connected with any suitable supply for the purpose set forth. 2nd. A window heater, consisting of a heater conductor in loop form extending vertically of the window space or spaces of a building above the window ledge, and

in close proximity to the window panes, and connected with any suitable supply for the purpose set forth. 3rd. A window heater in the form of a continuous loop, adapted to fit within the window space, and in close proximity to the window panes, and connected with any suitable supply for the purpose set forth. 4th. A window heater in the form of a rectangular loop, adapted to fit within the window space above, or in part below, the window ledge, and in close proximity to the window panes, and connected with any suitable supply for the purpose set forth. 5th. The window heater extending in loop form from a suitable inlet up one side or mullion of the window, across the soffit portion, down the opposite side or mullion and across the ledge portion to a suitable outlet, such inlet and outlet being connected with any suitable mains, and means for controlling the flow, as set forth. 6th. The window heater consisting of sections *a*, extending from a suitable inlet vertically up one side or mullion of the window in close proximity of the window pane, corner sections as *b*, sections *c* extending horizontally across the soffit portion of the window, sections *d* extending vertically of the opposite side or mullion and horizontal connections as *e* with outlet *f*, said inlet and outlet being connected with any suitable mains, and suitable means for controlling and regulating the flow as set forth.

No. 45,531. Certificate Representing Value.

(*Certificat représentant de la valeur.*)

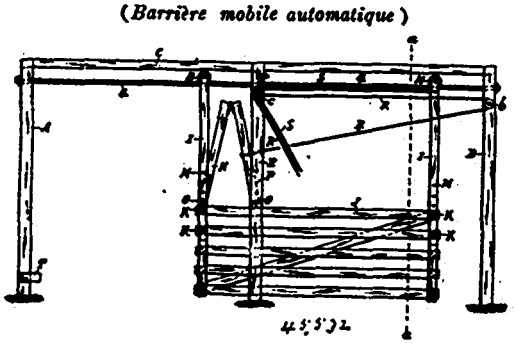


Warren W. C. Spencer, Boston, Massachusetts, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. A bond-certificate or other paper representing value or an obligation on the part of the maker, provided with a coupon representing a premium value or obligation additional to that borne by the body of said certificate or the interest thereon, substantially as described. 2nd. A certificate or other paper representing value provided with a series of interest coupons, and a premium coupon representing an additional value or an obligation on the part of the maker, substantially as described. 3rd. A certificate representing value, comprising a body bearing on its face the amount of such value, a series of instalment coupons each representing an amount, the aggregate of which equals the amount of said certificate body, and a premium coupon representing value additional to the amount of said body, substantially as described. 4th. In a certificate representing value, comprising the body B, a series of combined interest and instalment coupons D, and a premium coupon C, arranged substantially as described.

No. 45,532. Self-Locking Roller Gate.

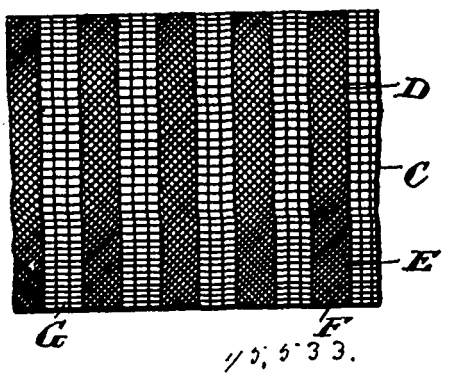
(*Barrière mobile automatique*)



Mitchell T. Buchanan, Ingersoll, Ontario, Canada, 14th March, 1894; 6 years.

Claim.—1st. The hinged locking-bar N, in combination with, and ...ured at one end to the hanger I, and at the other end to the upright bars E, F, the antifriction-wheels H, the track-rod G, the standards A, B, and the horizontal-bar C, substantially as and for the purpose set forth. 2nd. The hinged locking-bar N, in combination with and secured at one end to the hanger I, and at the other end to the bars E, F, the antifriction-wheels H, the track-rod G, the standards A, B, the horizontal-bar C, the ropes R, S, and the standard Q, substantially as and for the purpose set forth. 3rd. The hangers I, and the upright bars E, F, in which are formed two or more holes M and P, respectively, the gate J, provided with the holes L, the pins K, O, and the hinged locking-bar N, in combination with the antifriction-wheels H, the track-rod G, the standards A, B, and the horizontal-bar C, substantially as and for the purpose set forth. 4th. The hangers I, and the upright bars E, F, in which are formed two or more holes M and P, respectively, the gate J, provided with the holes L, the pins K, O, and the hinged locking bar N, in combination with the antifriction-wheels H, the track rod G, the standards A, B, the horizontal-bar C, the ropes R, S, and the standard Q, substantially as and for the purpose set forth.

No. 45,533. Cycle Tire. (*Bandage de cycles.*)



W. H. Heeson, Toronto, Ontario, Canada, 14th March, 1894; 6 years.

Claim.—1st. A tire for cycles having a series of channels cut in its outer surface and extending across the tire, a series of channels cutting the first mentioned channels at substantially a right angle, and parallelopipeds formed by the intersection of the said channels, substantially as specified. 2nd. A tire for cycles having the outer face of alternate sections, a series of channels extending diagonally across the tire, a series of channels intersecting the first mentioned channels at substantially right angles to form diamond shaped parallelopipeds, and the intervening sections having channels extending across the tire at right angles to the edge of the tire, and intersected by channels crossing them at right angles to form cubial paralleopipeds, substantially as specified.

No. 45,534. Paint for Iron, &c.

(*Peinture pour le fer, etc.*)

Hjolmar Johanson and Bertrand Harris Short, both of Vancouver, British Columbia, Canada, 14th March, 1894; 6 years.

Claim.—A compound composed of the above ingredients, tar, salt, carbon bi-sulphur, benzine refined, and parafine cake, substantially in the proportions and for the purposes set forth.

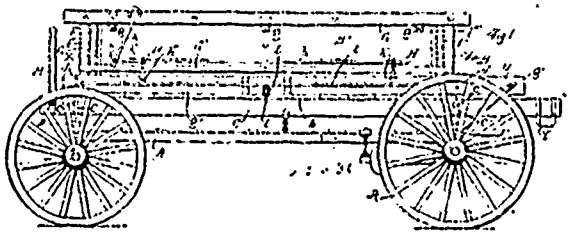
No. 45,535. Plough. (*Charrue.*)

Conrad Hartzell, St. Joseph, Missouri, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. In a plough, the combined reversible landside, undercutting share and colter, consisting of an integral piece in the form of two truncated triangles joined to each other at their bases and at right angles to each other, the edges of said piece being sharpened to form cutters with the exception of the truncated portions, said piece being perfectly symmetrical in form, whereby it may be reversed, substantially as specified. 2nd. In a plough, the combination with the broad flat share, and the mould-board having a broad transverse forward portion, and a narrow concaved rear portion, gradually decreasing in width from its upper edge, of the combined landside, colter, and undercutting share, said landside

being abbreviated in length, of symmetrical angular truncated form, and reversible, substantially as specified.

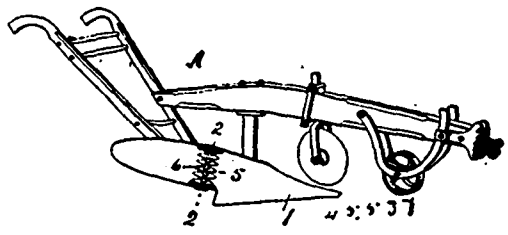
No. 45,536. Side Dump Wagon. (*Wagon à bascule.*)



Daniel F. Donegan, Los Angeles, California, U.S.A., 14th March, 1894; 6 years.

Claim.—A dump wagon comprising the combination of the running gears, a frame rigidly fixed to the bolsters of such running gears, and comprising an upper and a lower longitudinally arranged girder beam, a swinging side wall hinged to the upper girder, and provided with latches adapted to engage catches arranged upon the lower girder when such side wall is closed, such catches, a tilting bed comprising a floor and a side wall secured together and mounted upon such running gears and pivoted to tilt toward such swinging side wall, and means for securing the tilting bed to the lower girder.

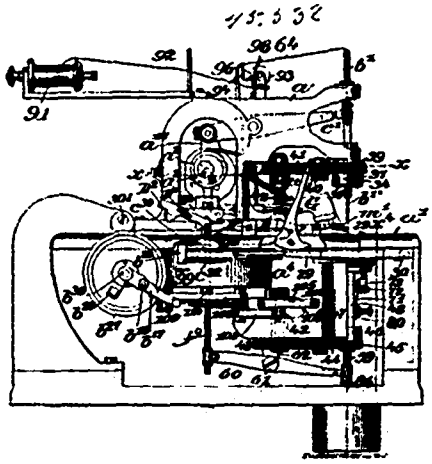
No. 45,537. Plough Attachment.
(*Attache pour charrues*)



William J. Dwyer, Napoleon, North Dakota, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. The combination with a mould-board of a plough, of a series of cutters arranged at its side to cut the furrow-slice in substantially horizontal direction. 2nd. The combination with the mould-board of a plough, of a series of cutters arranged in horizontal position at its side, and adapted to rotate and cut a furrow-slice as the plough is advanced in the ground, substantially as set forth. 3rd. The combination with the mould-board of a plough, of a series of rotary cutters arranged on a spindle, and means for providing end bearings for the spindle at the upper and lower edges of the mould-board.

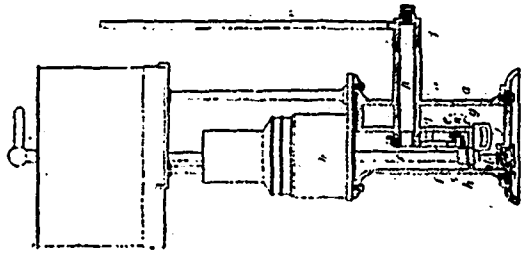
No. 45,538. Sewing Machine. (*Machine à coudre.*)



John Reece, Boston, Massachusetts, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. A sewing machine containing the following instrumentalities, viz., a clamp-frame, a work-clamp mounted thereon, a stitch-frame, stitch forming mechanism including a needle-bar located wholly above the clamp-frame and provided with an eye-pointed needle, and complemental stitch-forming mechanism located below said clamp-frame, and devices to actuate the said stitch-forming mechanism for the production of over-edge stitches and devices to rotate the said stitch-forming mechanism in one direction rotation after rotation, substantially as described. 2nd. A sewing machine containing the following instrumentalities, viz., a clamp-frame, a work-clamp, a stitch-frame, stitch-forming mechanism including a needle-bar located wholly above the clamp-frame and provided with an eye-pointed needle, and complemental stitch-forming mechanism located below said clamp-frame, devices to actuate the said stitch-forming mechanism for the production of stitches, and to rotate the said stitch-forming mechanism in one direction rotation after rotation, and devices to change relatively the positions of the stitch-frame and clamp-frame to insure the production of over-edge stitches along the sides and about the end of a button-hole, substantially as described. 3rd. A sewing machine containing the following instrumentalities, viz., a clamp-frame, a work-clamp, a stitch-frame, stitch-forming mechanism including a needle-bar located wholly above the clamp frame and provided with an eye-pointed needle, and complemental stitch-forming mechanism located below said clamp-frame, devices to actuate the said stitch-forming mechanism for the production of stitches and to rotate the said stitch-forming mechanism in one direction rotation after rotation, devices to change relatively the positions of the stitch-frame and clamp-frame to insure the production of over-edge stitches along the sides and about the end of a button-hole, and a button-hole cutter, and means to operate the same intermittingly, substantially as described. 4th. The casing 34, the block 33, therein and its contained spherical bearing, combined with the needle-bar adapted to be reciprocated in said bearing, and devices to adjust said block in said casing to determine the length of the depth stitch, substantially as described. 5th. The casing, the hollow needle-bar therein provided with an eye-pointed needle, and the hollow rod or bar 59, the block 58, the under thread thread-carrier, its actuating devices and gears 39 and 45, combined with the intermittingly rotating vertical shaft 42 and gearing actuated thereby to positively rotate said gears 39 and 45 in unison and with them the stitch-forming mechanism, substantially as described. 6th. The frame provided with a raceway, a needle segment, and connected eye-pointed thread-carrier, a hollow rod 59, contained and vertically movable in said frame and provided with slotted slide plate, and the throat plate also movable with the said frame, combined with the arm 86, a flier through which the stay cord is led, and a hollow stud forming the centre of rotation, of the flier and about which the cord rotates, the under thread being led through said hollow stud and the wound mass of stay cord on its way into and through the hollow rod 59, the combination being and operating, substantially as described. 7th. In a sewing machine, the following instrumentalities, viz., a clamp-frame, a work-clamp, a stitch-frame, a stitch-forming mechanism therein, devices to rotate the stitch-forming devices in the same direction, a semi-rotation at each end of the button-hole, and devices to change the relative positions of the stitch-frame and clamp-frame to insure not only the production of over-edge stitches along the sides and outer end of the button hole, but also to impart a slight movement to and fro in the direction of the length of the button-hole, while the stitch forming mechanism is being given a semi-rotation at the end of the button-hole, for the purpose set forth.

No. 45,539. Speed Rotary Motion for Centrifugal or other Machines. (*Production de mouvement rotatif à haute vitesse pour machines centrifuges ou autres.*)



Albert Kraak, Taipale, Finland, 14th March, 1894; 6 years.

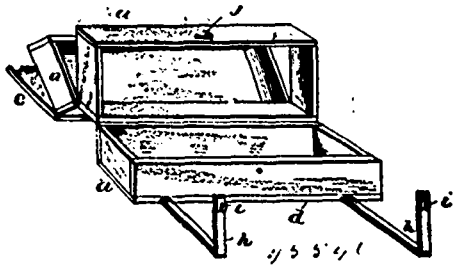
Claim.—The method of utilizing a limited quantity of water or other liquid for converting a slow speed motion into a high speed one by means of a pump, in combination with a divided receiver and turbine or other liquid motor, substantially as described and illustrated in the accompanying drawing. 2nd. The combination of the fluid motor apparatus described in the preceding claiming clause with any high speed apparatus to be driven by a comparatively slow speed force, substantially as described.

No. 45,540. Crate. (*Caisse.*)

Ann E. Moss, Lawson, Missouri, and Beryman Hillyard, Allerton, Iowa, both in the U.S.A., 14th March, 1894; 6 years.

Claim.—In a carrying plate of the class described, the combination with a series of separable sections of substantially uniform size and shape, and adapted to fit one upon the other, of continuous

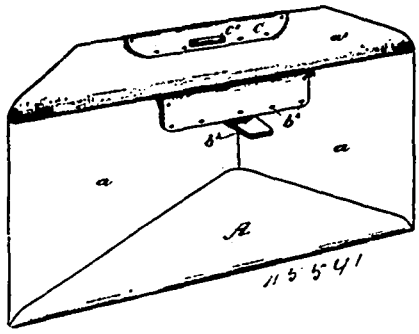
hinges having the joints opposite the contiguous edges of the sections and fastened to the backs thereof, a top having a plain under



surface and adapted to cover the entire area of the top sections, said top being secured to elongated extensions of one of said hinges, eccentric fastening levers on the end of said extensions, and a front strap hinged to the lower section and provided with a loop-hole adapted to be engaged by the eccentric lever, whereby the sections are held together while in transit, all arranged and adapted to operate in the manner and for the purpose specified.

No. 45,541. Envelope Fastening.

(*Fermeture pour enveloppes.*)



George A. Harris, Bridgeton, New Jersey, U.S.A., 14th March, 1894; 6 years.

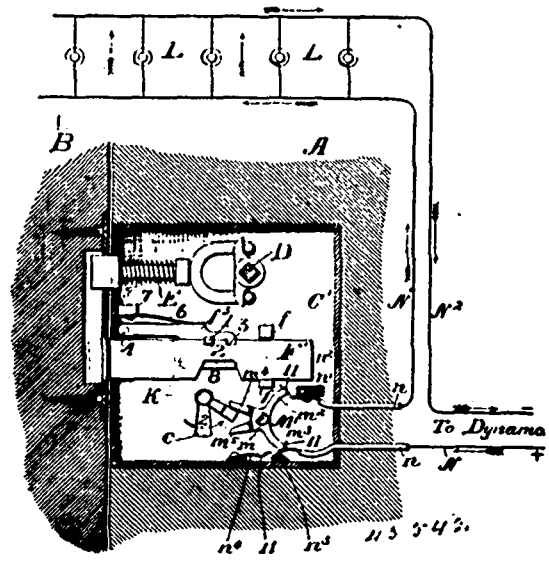
Claim.—As a new article of manufacture, an envelope provided with a fastener consisting of a perforated metallic plate, bent on itself and clamped to the body of the envelope at the opening therein, the perforations being at both sides of the clamped edge of the envelope, and the plate having at one edge at the exterior of the envelope, an integral flexible tongue, and an attachment on the envelope flap consisting of a perforated plate bent on itself and clasping the flap, the flap attachment having a slot adapted to receive the flexible tongue of the envelope body attachment, substantially as described.

No. 45,542. Cut Outs for Electric Lights.

(*Interrupteur pour lumière électrique.*)

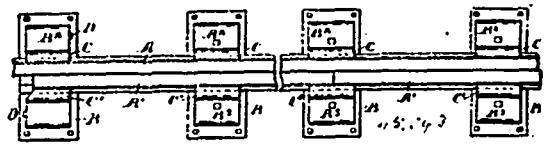
John Hite Lee Holcombe, Washington, District of Columbia, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. The combination with an electric circuit and electric contact making and breaking devices, of a door lock which by being unlocked from one side switches on an electric current, and by being locked from the same side switches the current off, substantially as and for the purposes described. 2nd. The combination with an electric circuit, and electric contact making and breaking device, of a door lock so arranged that when locked or unlocked from one side an electric circuit is broken or closed, and when locked or unlocked from the opposite side said electric circuit is not disturbed, substantially as and for the purpose described. 3rd. In a device of the character described, the combination with an electric light circuit and electric lights therein, of a door lock having an electric switch therein, with key holes on either side of said lock, and a key adapted to move said switch when inserted in the key hole at one side of said lock, substantially as and for the purposes specified. 4th. In a device of the character described, the combination with an electric light circuit and electric lights therein, of a door lock having an electric switch therein, with key holes on either side of said lock, and a key adapted to move said switch when inserted in the keyhole at one side of said lock, and not to move said switch when



inserted in the key holes at the other side of said lock, substantially as and for the purposes described.

No. 45,543. Continuous Rail. (*Rail continue.*)

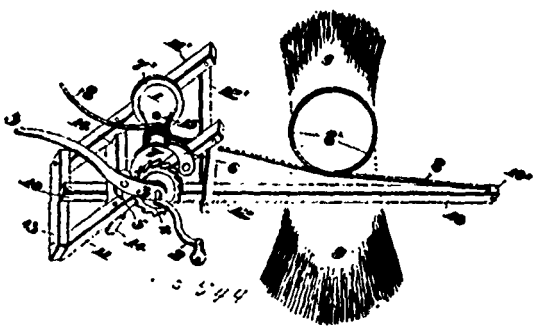


Allen Bagley, Ypsilanto, Michigan, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. A continuous T-rail formed of two rails located side by side, each constructed with outwardly extended flanges having their faces opposite said flanges located adjacent one to the other at the top and spread at their base, said rails breaking joint and having in combination therewith clamping devices to hold said rails firmly together, substantially as described. 2nd. A continuous rail formed of two rails located side by side, constructed with laterally extended flanges having their faces opposite said flanges bevelled in opposite directions at the top and bottom from the upper and lower edges of the rail inward toward the middle thereof, and clamping devices to hold said nails firmly together, substantially as described. 3rd. A continuous rail formed of two like reversible rails located side by side, each constructed with outwardly extended flanges at the top and bottom thereof and breaking joints at their extremities, said rails spread apart at their base and held in close juxtaposition at the top, and clamping devices to firmly engage said rails, substantially as described. 4th. A continuous rail having in combination two like rails located side by side and formed with lateral flanges at the top and base thereof, chairs each constructed with clamping arms turned inward the rail, and clamping wedges having a wedged engagement with the clamping arms of the chair and with the lower flange and adjacent body of the rail, substantially as described. 5th. A continuous rail formed of two like rails located side by side, having in combination therewith supporting chairs each constructed with seats for said rails, with a flange separating the rails at their base, and with clamping arms, and clamping wedges having a wedging engagement with the clamping arms and adjacent portions of the rails, substantially as described. 6th. A continuous rail having in combination two like rails located side by side constructed with lateral flanges at top and bottom, chairs supporting said rails each formed with clamping arms, and wedges engaging the clamping arms and rails, each of said wedges constructed with a lateral flange at the base and an upwardly projected flange at the upper side, the lateral flange thereof having a wedging engagement under the adjacent clamping arm, and the upper flange extending along the body of the rail under the upper flange thereof, the intermediate portion of the wedge having a wedging engagement between the lower flange of the adjacent rail and the adjacent edge of the corresponding clamping arm of the chair, substantially as described. 7th. A rail A constructed with flanges *a a l* extending laterally from one side thereof at the top and bottom, the opposite side of said rail bevelled from the upper and lower edges of the rail toward the middle thereof, substantially as described. 8th. A continuous T-rail formed of two like rails located side by side, each constructed with outwardly

extended flanges at the top and bottom and breaking joints at their extremities, said rails having in combination therewith supporting chairs and clamping wedges engaging said rails and chairs, substantially as described. 9th. The combination with a railway rail provided with bottom flanges, of a chair to underlie the rail formed with lateral clamping arms turned inward to overlap said flanges, and a clamping wedge constructed with a lateral flange to engage each of said clamping arms, each wedge and its related arm having adjacent wedge shaped faces along the inner edge of the arm, and the outer edge of the lateral flange of the wedge, substantially as described.

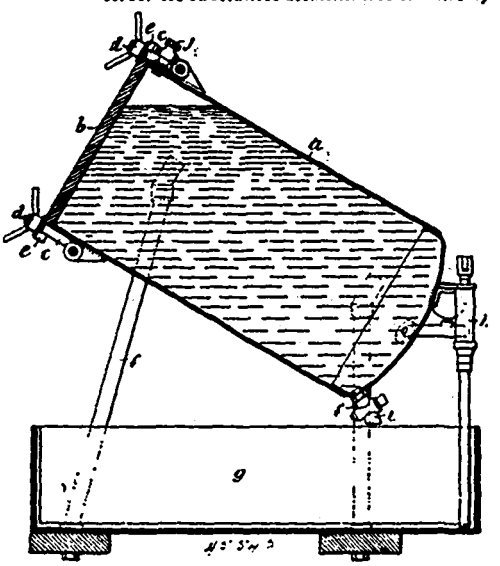
No. 45,544. Compressor. (*Compresseur.*)



David Neale, Fort Calhoun, Nebraska, U.S.A., 14th March, 1894; 6 years.

Claim.—In a fascine compressor, the combination of a frame-work supporting a winding drum, and having a long spar projecting from near its base, the spar adapted to be thrust under the fascine between it and the ground, a rope one end attached to the extreme end of the spar, then carried around the fascine forming a single encompassing loop, the opposite end wound on the drum, substantially as shown and described.

No. 45,545. Apparatus for Preserving Alimentary and Other Substances. (*Appareil pour préserver les substances alimentaires et autres.*)

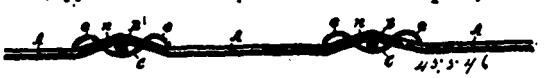


Carl Adolph Sahlström, London, England, 14th March, 1894; 6 years.

Claim.—1st. The method of preserving alimentary and other substances, consisting in placing the substances to be preserved in an air tight receiver exhausting the gases contained in the receiver through the cock by a suitable apparatus, so that the contents of the vessel are in vacuo, and then pumping into the receiver from a suitable tank connected thereto a preservative liquid, which is afterwards drawn off after having thoroughly permeated the substance, as and for the purpose specified. 2nd. As a means for preserving alimentary and other substances, an apparatus consisting of a receiver to contain the substances of suitable strength, provided with a removable lid or cover, and cocks I and J, a tank G to contain the preservative liquid, and a pump H connecting such tank to the receiver, all arranged as and for the purpose specified. 3rd. As a means for preserving alimentary and other substances, an apparatus consisting of a receiver to contain the substances, of suitable strength, provided with a removable lid or cover and cock I and J, open work baskets or receptacles to receive the substances to be placed in the receiver, a tank G to contain the preservative liquid and a pump H connecting such tank to the receiver, all arranged as and for the purpose specified. 4th. As a means for preserving alimentary and other substances, an apparatus consisting of a receiver to contain the substances of suitable strength, provided with a removable head or cover, which has slots *e*, *e*, formed in the edge and is connected to the body of the receiver by the pivoted bolts *c*, *c*, and nuts *d*, *d*, as shown, cocks I and J, situated at the bottom and top of the tanks respectively, a tank G to contain the preservative liquid, and a pump H connecting such tank to the receiver, all arranged as and for the purpose specified.

No. 45,546. Tension for Metallic Fencing.

(*Appareil de tension pour clôtures métalliques.*)



Mitchell T. Buchanan, Ingersoll, Ontario, Canada, 14th March, 1894; 6 years.

Claim.—1st. In a metallic fence, tension devices C extending the full width or height of a fence, slotted, and bent or curved, as shown in cross section, thereby forming a spring to hold the fence tightly stretched, as described and shown. 2nd. A metallic fence, comprising a curved or corrugated tension device C, having openings D, strands A, and strands or keys B all formed, arranged and combined as and for the purpose set forth.

No. 45,547. Process of Producing Metallic Alloys.

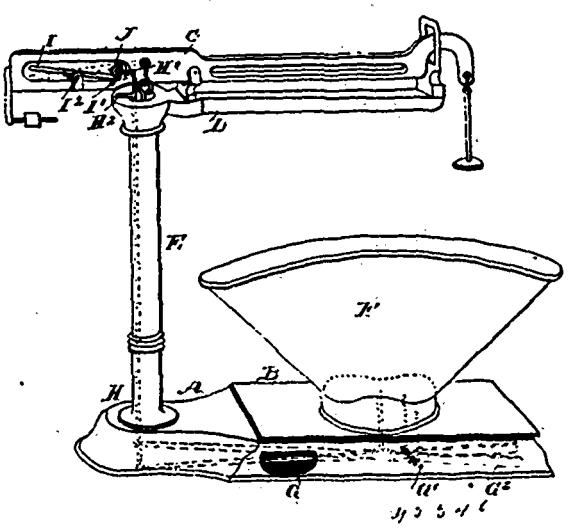
(*Procédé de production d'alliages métalliques.*)

William Houston Greene and William Henry Wahl, both of Philadelphia, Pennsylvania, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. In the art of manufacturing metallic alloys, the herein described process which consists in heating to a suitable temperature and in the presence of suitable fluxes, a metallic oxide, in contact with a silicide of metal capable of alloying with the reduced metal whereby the primary reduction of the metallic oxide to the metallic state is effected by the silicon of the silicide employed and the reduced metal alloys with the base of the silicide. 2nd. In the art of manufacturing metallic alloys, the herein described process which consists in heating to a suitable temperature in a furnace chamber or crucible free from carbon and in presence of suitable fluxes, a metallic oxide in contact with a silicide of a metal capable of alloying with the reduced metal whereby the primary reduction of the metallic oxide to the metallic state is effected by the silicon of the silicide employed, and the reduced metal alloys with the base of the silicide.

No. 45,548. Weighing Scales.

(*Balance à bascule.*)



John P. Firth, Titusville, Pennsylvania, U.S.A., 14th March, 1894; 6 years.

Claim.—1st. The combination, with a pivoted scale beam, of a second beam pivoted upon and carried by the sale be m, and having a running or travelling weight, and a lever adapted to be actuated by the placing of a scoop on the weighing platform and connected with said second beam, substantially as set forth. 2nd. An attachment for weighing scales, comprising a weighted lever adapted to be actuated by the scoop, a rod pivotally connected with the said lever

and provided with lugs, and a beam journalled on the scale beam and provided with a running weight, the said beam being actuated by the lugs on the said rod, substantially as shown and described. 3rd. In an attachment for weighing scales, the combination with a scoop provided with a pin, of a lever adapted to be engaged by the said pin, and a beam journalled on the scale beam and provided with a running weight, the said beam being actuated from the said lever, substantially as shown and described. 4th. In an attachment for weighing scales, the combination with a scoop provided with a pin, lever adapted to be engaged by the said pin, a beam journalled on the scale beam and provided with a running weight, the said beam being actuated from the said lever, and intermediate connection between the said lever and the said beam, substantially as shown and described. 5th. The combination with a platform scale of an automatically shifted or actuated scoop-counterbalance compensator mounted on the scale beam, and a lever mechanism connected with it, and extending adjacent to the platform and actuated by the placing of a scoop upon or its removal from the said platform whereby the said scoop counterbalance or compensator will be automatically shifted or actuated to balance the scale beam during the presence or absence of the scoop, substantially as set forth.

No. 45,549. Process of Making Caramel Malt.

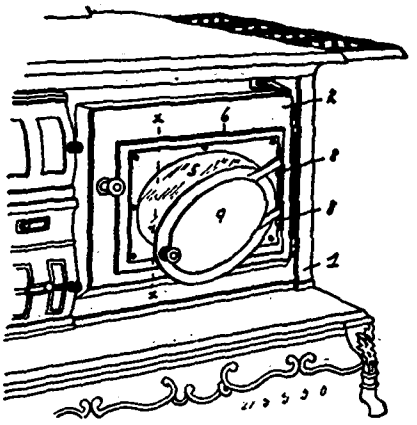
(*Procédé pour la fabrication de drèche de caramel.*)

Reinhardt Rahr, Manitowoc, Wisconsin, U.S.A., 14th March, 1894; 6 years.

Claim.—The process of making caramel malt, which consists in soaking or steeping the malt kernels in water, separating them from the water, then subjecting the malt to a low degree of dry heat, gradually raising the temperature of the malt to about 60° Reaumur, and maintaining said temperature until the starch products are converted into maltose, and finally raising the temperature to a point short of carbonization and continuing the application of the elevated temperature until the maltose has been converted into caramel, substantially as described.

No. 45,550. Oven Door for Stoves, &c.

(*Porte de fourneau de poêle.*)



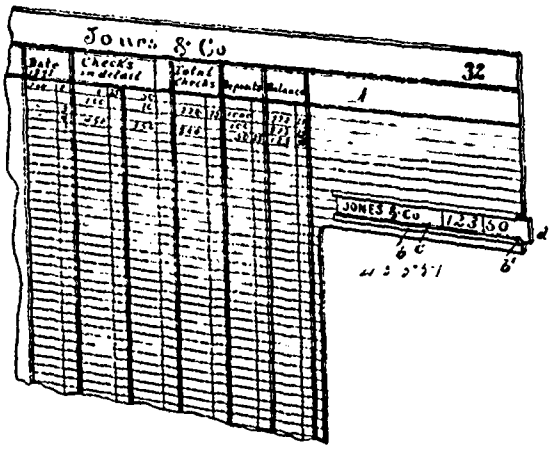
Jacob Elwood Yeager, Philadelphia, Pennsylvania, U.S.A., 14th March, 1894; 6 years.

Claim.—An oven door for ranges or the like provided with an opening in its body portion, a seat surrounding said opening and extending rearward from said body portion, a sheet of glass fitted in said seat and lying flush with the outer surface of the door, a retaining plate secured to the face of the door, and overlapping the edge of the glass, and a movable cover for the glass hinged to said retaining plate.

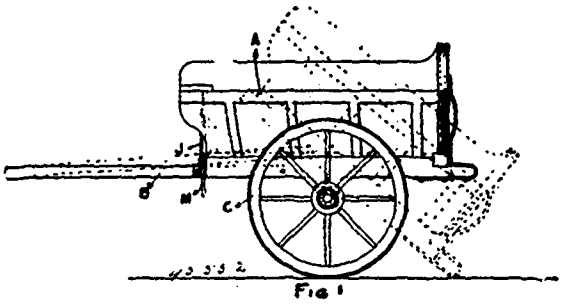
No. 45,551. Account Book. (*Livre de comptes.*)

James Henry Rand, North Tonawanda, New York, U.S.A., 15th March, 1894; 6 years.

Claim.—1st. The combination with a book having its pages provided along their outer edges with a series of open horizontal pockets or holders arranged substantially one below the other, whereby the several pockets form a vertical row in which every pocket is exposed upon opening the cover of the book, of a name card adapted to be placed in each of said holders, and a separate balance indicating card, also arranged in each holder and adapted to be changed as the balance of the corresponding account changes, substantially as set forth. 2nd. A ledger or similar account book having its pages provided with marginal holders or pockets for receiving index and balance indicating cards, the several holders being arranged one below the other, and the marginal portions of the leaves of the book being properly cut out to expose the cards in the various holders, substantially as set forth. 3rd. A card holder adapted to be attached to a leaf of a book consisting of a plate provided with slide-ways for receiving a card, and a retaining spring which bears against the rear side of the card, substantially as set forth. 4th. A card holder adapted to be attached to a leaf of a book consisting of a plate having slide-ways which receive a card, a fastening spur arranged on the rear side of said plate, and a retaining spring arranged on the front side thereof, said spur and springs being formed integrally with the said plate, substantially as set forth.



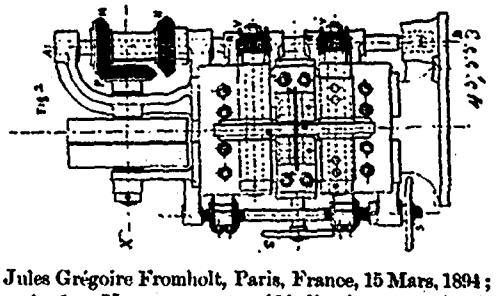
No. 45,552. Cart. (*Tombereau.*)



André Pagnin, Montreal, Quebec, Canada, 15th March, 1894; 6 years.

Claim.—1st. In a "tombereau" cart the dumping arrangement consisting in the spring J, pieces K and L, and staples l, l^1 and l^2, substantially as described and for the purposes set forth. 2nd. In a "tombereau" cart the tail door attachment, consisting in the pieces G and H, spring I, hinges d and d^1, and bolt E, substantially as described and for the purposes set forth.

No. 45,553. Mechanical Setting Insertion for Diamond, &c. (*Enchassement mécanique du diamant, etc.*)

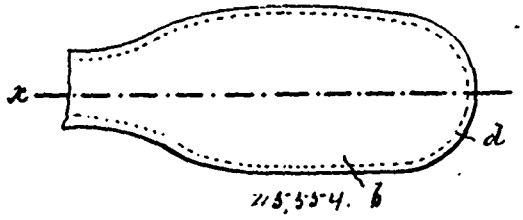


Felix Jules Grégoire Fromholt, Paris, France, 15 Mars, 1894; 6 ans.

Résumé.—1er. Un nouveau procédé d'enchassure mécanique du diamant consistant: (1) à pratiquer une alvéole dans une pièce d'acier convenable; (2) à placer dans cette alvéole, le diamant que l'on veut enchâsser; (3) à porter la dite pièce d'acier à la chaleur rouge, à la faire passer ensuite dans un laminoir spécial, et (4) à exposer la pointe du diamant au moyen de la lime, le tout tel que décrit. 2ème. Dans un laminoir pour l'enchassure mécanique du diamant, la combinaison de deux roues G, G^1, un moyen pour les faire tourner en sens inverse, deux pignons d'angle M, N, un pignon P, muni d'un excentrique D, tel que décrit. 3ème. Dans un laminoir pour l'enchassure mécanique du diamant, la combinaison de deux roues F et F^1, un moyen pour les séparer à volonté, un chariot C, deux roues G, G^1, le moyen de les faire tourner en sens inverse,

deux pignons d'angle M, N, un pignon P, muni d'un excentrique D, le tout tel que représenté par les dessins ci-annexés et pour les fins spécifiées.

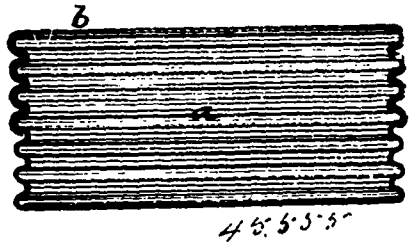
No. 45,554. Leather Strap. (*Courroie en cuire.*)



Michael C. Mullarky, Francis H. McKenna and Richard McShane, all of Montreal, Quebec, Canada, 15th March, 1894; 6 years.

Claim.—1st. Leather strips or analogous goods comprising two layers of leather and an intermediate layer or sheet of metal and the whole united by stitching, for the purpose set forth. 2nd. The combination in leather straps or analogous goods, of the inner part or layer *a*, with outer part or layer *b*, having between them the metalic sheet c, the whole united by stitching *d*, as and for the purpose set forth.

No. 45,555. Box. (*Boîte.*)



Oswald Heinrich, Mittelwalde, Silesia, Michael Goldschmidt, Philipp Goldschmidt and Siegfried Goldschmidt, Breslau, all of Germany, 15th March, 1894; 6 years.

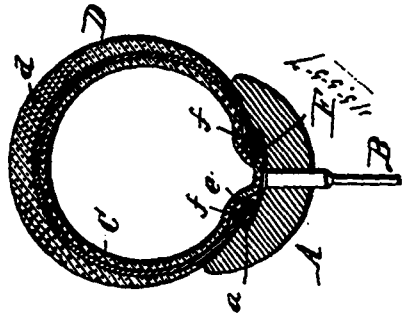
Claim.—A box, the sides of which having furrows adapted to engage with the corresponding furrows of the lid, the engaged furrows holding together the box and the lid, substantially as described.

No. 45,556. Method of Distilling Wood Waste.
(*Méthode de distillation des rebuts de bois.*)

Franez Josef Bergmann, Neheim, Prussia, Germany, 15th March, 1894; 6 years.

Claim.—1st. The method herein described of manufacturing wood vinegar, which consists in converting wood waste, such as sawdust or chips, into blocks under pressure up to about 300 atmospheres, and expressing water contained in the wood, and then carbonizing the pressed blocks in retorts, substantially as described. 2nd. The method herein described of manufacturing wood vinegar, which consists in converting wood waste, such as saw-dust or chips, into blocks by comparatively high pressure, up to about 300 atmospheres, and expressing water contained in the wood, then carbonizing the pressed blocks in retorts, and precipitating the gases generated, substantially as described.

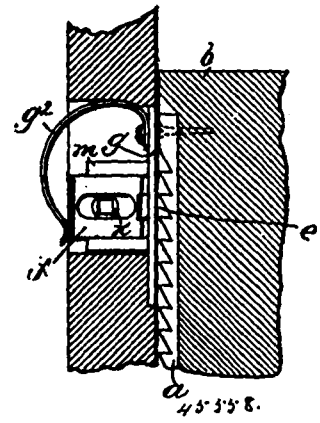
No. 45,557. Pneumatic Tire. (*Bandage pneumatique.*)



Charles Frederick Lavender and Thomas Fane, both of Toronto, Ontario, Canada, 15th March, 1894; 6 years.

Claim.—1st. The combination, with a wheel rim, of a separate fastener, consisting of a narrow plate or strip secured transversely to the face of the rim, and provided at its ends with hooks or lips adapted to engage with a removable tire arranged on the rim, substantially as set forth. 2nd. The combination, with the wheel rim provided on its face with fasteners, of a tire provided at its marginal edges with split attaching bands having their ends overlapping, substantially as set forth. 3rd. The combination with the wheel rim provided on its face with fasteners, of a tire having a cover or sheath provided with pockets in its marginal edges, and split bands arranged in said pockets, engaging with said fasteners and having their ends overlapped within the pockets, substantially as set forth. 4th. The combination, with the wheel rim, of a separate fastener secured to the face of the rim, and consisting of a narrow plate or strip secured transversely to the face of the rim, and provided with hooks or lips, and a tire having a split, cover or sheath, provided at its marginal edges with reinforcing bands which engage with the hooks or lips of said fasteners, substantially as set forth. 5th. The combination with wheel rim, of a separate fastening secured to the face of the rim and consisting of a plate or strip provided at its ends with hooks or lips, and a tire having a split cover or sheath provided at its marginal edges with reinforcing bands which engage with said hooks or lips, and on the inner sides of said bands with openings which receive such hooks or lips, substantially as set forth. 6th. The combination, with a wheel rim and a spoke, of a separate tire fastener consisting of a narrow strip or plate seated transversely on the rim face and provided at its ends with hooks or lips adapted to engage with the wheel tire, and between said hooks with an opening which receives the spoke, whereby the fastener serves also as a washer for the spoke head, substantially as set forth.

No. 45,558. Sash Fastener. (*Arrête-croisée.*)



The Rhoads Sash Balance Company, San Francisco, California, assignee of Henry William Rhoads, Passaic Bridge, New Jersey, all in the U.S.A., 15th March, 1894; 6 years.

Claim.—A sash fastener comprising a ratchet toothed locking-bar *a*, having upwardly inclined teeth on the lower sash, and a ratchet toothed locking-bar a^2, having downwardly inclined teeth on the upper sash, combined with a fastening member adapted to be secured in the casing of the sash-frame having pawls to co-operate with said locking-bars, a spring to throw said pawls outward into engagement with said locking-bars, and a retractor to withdraw the said pawls from engagement with the locking-bars, substantially as described.

No. 45,559. Joint Coupler. (*Embrayage de joint.*)

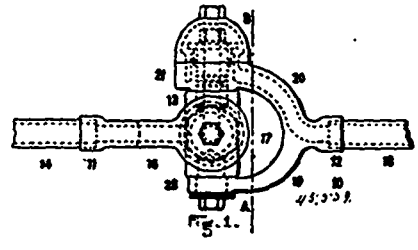


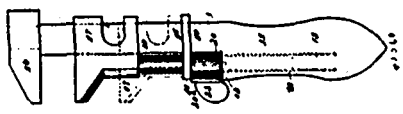
Fig. 1.

William H. Hampson, Cambridge, Massachusetts, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. In a universal joint coupling, the combination of the yokes, each yoke having a hollow arm and a ported yoke end, with the central cross provided with the two packed hollow gudgeons which are fastened to the central cross, each gudgeon being enclosed or covered by the cap on the yoke end, substantially as and for the purposes set forth. 2nd. A universal joint coupling, the yokes of which are each provided with a hollow arm and a ported yoke end having a tight cap, in combination with the central cross which is

provided with a central cross port and the hollow gudgeons fastened to the cross, substantially as described. 3rd. In a universal joint coupling, the central cross provided with hollow gudgeons which are securely fastened to the cross, in combination with the yokes having hollow arms and ported and capped yoke ends, said yokes being adapted to turn upon said packed gudgeons, substantially in the manner and for the purposes set forth. 4th. In a universal joint coupling, so constructed as to allow flexure in any direction, the central cross provided with the hollow gudgeons which are securely fastened to the cross, in combination with the yokes having the hollow arms and the ported and capped yoke ends, said yokes being adapted to turn upon said packed gudgeons, substantially as and for the purposes set forth.

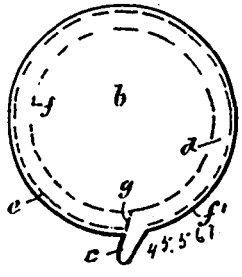
No. 45,560. Wrench. (*Clé à écrou*)



Lewis Petty Davidson, Owen, Wyoming, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. A wrench, the same consisting of a shank, having an offset upon the lower portion of its front face, and provided with a jaw fixed to its outer end, a lower jaw having sliding movement on the shank, a rod threaded upon opposite faces, and a lock-nut through which the threaded rod passes, said lock-nut being provided with a bore having diametrically opposed recesses produced in its wall, and a threaded surface between the recesses, substantially as and for the purpose specified. 2nd. A wrench, the same consisting of a shank having an offset at its inner end, a jaw fixed upon its outer end, a sliding jaw located upon the shank, a guide carried by the shank, an adjusting rod secured to the lower jaw, provided with broken threads upon opposing faces, and a lock-nut held to turn between the offset and guide of the shank, the said lock-nut being provided with a bore having diametrically opposing recesses produced in its wall, and provided with threaded surfaces between the recesses, the lock-nut being furth provided with stops limiting its movement, as and for the pur specified. 3rd. In a wrench, the combination with a shank, andle forming a portion of the shank and provided with an offset at the front face of the shank, the offset portion of the handle having a chamber produced therein, and a jaw fixed upon the outer end of the shank, of a jaw held to slide upon the shank, a guide secured upon the shank above the offset of the handle, an adjusting-rod removably attached to the sliding jaw, said rod being provided with a broken thread upon opposing faces, the rod being passed through the guide and into the handle-chamber, and a lock-nut located between the guide and the offset of the handle and through which the adjusting-rod passes, the said lock-nut being capable of turning and being provided with shoulders upon opposite faces, forming stops, the bore through which the adjusting-rod passes being provided with recesses in opposing surfaces, the surfaces between the recesses being threaded, as and for the purpose set forth.

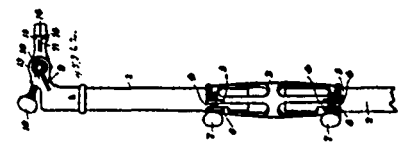
No. 45,561. Key Opening Sheet Metal Can.
(*Clé à ouvir les boîtes métalliques.*)



John Thornley, Montreal, Quebec, Canada, 16th March, 1894; 6 years.

Claim.—1st. A blank for a can end or cover piece having an integral detachable strip formed by parallel annular weakening lines, one of which is endless and the other terminating at the sides of a projecting tongue portion of the detachable strip formed by a lateral extension from said blank. 2nd. A blank for a can end or cover piece having an integral detachable strip formed by weakening lines in close proximity to and parallel with the edge of the blank, the outer one of such lines, when the cover is in place, being located above and running parallel with the top of the can body and a lateral projection from such blank, for the purpose set forth. 3rd. A blank for a can end or cover piece having the lateral extension *c*, the outer weakening line *c*, terminating at the sides of said extension, the inner endless weakening line *f*, and transverse weakening line *g*, for the purpose set forth.

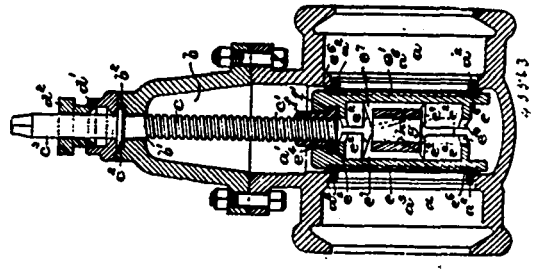
No. 45,562. Adjustable Handle. (*Manche ajustable.*)



William A. Faber, Brooklyn, New York, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. In an adjustable handle, the combination of the notched disc rigidly secured to a brush or other utensil, the ferrule to which said disc is pivoted, and means carried by the ferrule for interlocking with said disc to secure the brush or utensil in its angular adjustment, substantially as set forth. 2nd. In an adjustable handle, the combination of the disc adapted to be secured to a suitable utensil and provided with notches, the ferrule having laterally extending ears between which said disc is pivoted, and a locking pin or bolt carried by the ferrule and adapted to engage with said notches, substantially as set forth. 3rd. In an adjustable handle, the combination of the socket split at the ends and having twin ears at such split portions, the thumb-screws extending through said ears, and the handle sections inserted within said socket end to end, substantially as shown and described. 4th. In an adjustable handle, the combination of the ferrule, the fixture having at the rear end a notched disc pivoted to said ferrule, means carried by the latter and interlocking with said disc for securing the fixture in various angular adjustments, the front end of said fixture having a polygonal shaped part adapted to fit within a correspondingly shaped socket carried by the brush or other utensil, and means carried by said socket for securing the fixture thereto, substantially as set forth. 5th. The combination of the handle, the ferrule secured to the end thereof and having the laterally projecting bracket, the fixture pivoted to said bracket and having at its rear end a notched disc and at its front end a squared portion, the shoulder around said fixture immediately behind said squared portion, a locking pin or bolt carried by said bracket and capable of engagement with said disc, the socket secured to the brush or other utensil and having an opening conformed to said squared portion, and the pin passed through the socket and adapted to be driven against the fixture behind said shoulder, substantially as shown and described.

No. 45,563. Valve. (*Soupape.*)



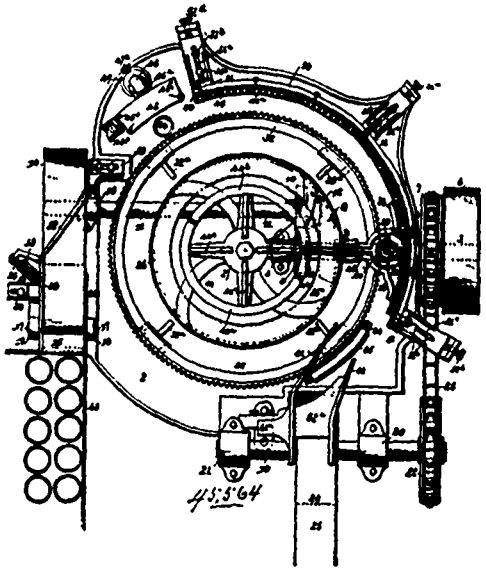
Harvey Hallock Burritt, Newark, New Jersey, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. In a valve, the combination with the chamber thereof, of the two-part valve consisting of valve discs *c* and c^1, each provided with a pair of downwardly inclining lugs having oblong recesses therein, balls or rollers in said recesses, and a bar or yoke between said discs, said bar or yoke having a central opening formed by a collar g^4, longitudinally arranged ribs extending on opposite sides of said collar, and a pair of inclined webs g^5 on each side of said ribs against which said balls or rollers ride, substantially as and for the purpose set forth. 2nd. In a valve, the combination with the chamber thereof, of the two-part valve discs *e* and e^1, each provided with a pair of downwardly inclining lugs having oblong recesses therein, balls or rollers in said recesses, and a yoke or bar between said valve discs, having inclined ribs against which said balls or rollers ride, substantially as and for the purposes set forth. 3rd. In a valve, in combination with the valve case, provided with oppositely placed lugs or ears a^3 and a^4, a screw-threaded valve stem, a pair of valve discs, a yoke or bar between said discs adapted to be supported by said lugs or ears a^3 and a^4 when the valve is closed, and said bar or yoke being adapted to be raised by said discs when the valve is being opened, and means on said bar or yoke and said valve discs for forcing said valve discs forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve discs, having oblong recesses, balls or rollers in said recesses, and inclined webs on said bar or yoke, against which said balls or rollers ride, substantially as and for the purposes set forth. 4th. The herein described valve, comprising therein a valve-casing *a*, a chambered-cap *b*, a screw-threaded stem *c*, a sleeve *f* having a flange f^1, valve discs *e* and e^1 engaging with said flanged sleeve and adapted to be raised thereby when said

valve stem is turned, and means connected with said valve discs for forcing said discs forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve discs, having oblong recesses, balls or rollers in said recesses, and a bar or yoke *g* having inclined webs against which said balls or rollers ride, substantially as and for the purposes set forth. 5th. The herein described valve, comprising therein a valve-casing *a*, a chambered-cap *b*, a screw-threaded stem *c*, a sleeve *f* having a flange f^1, lugs a^3 and a^4 in said valve casing, valve discs *e* and e^1 engaging with said flanged sleeve *f*, adapted to be raised thereby, when said valve stem is turned, a yoke or bar between said valve discs adapted to be supported by said lugs a^3 and a^4 when the valve is closed, and said bar or yoke being adapted to be raised by said discs when the valve is being opened, and means on said bar or yoke and on said valve discs for forcing said valve discs forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve discs having oblong recesses, balls or rollers in said recesses, and inclined webs on said bar or yoke against which said balls or rollers ride, substantially as and for the purpose set forth.

No. 45,564. Can Washing Machine.

(*Machine pour laver les bidons.*)

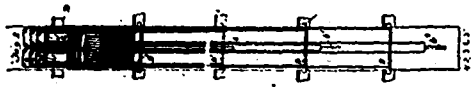


Moore Letson and Frank Burpee, both of New Westminster, British Columbia, Canada, 16th March, 1894; 6 years.

Claim.—1st. In a machine of the class described, the combination of a rotary carriage provided with holders, a spraying nozzle, a stationary drying mat, and means for operating said carriage, substantially as specified. 2nd. The combination, with a rotary carriage, a spraying nozzle and drying mat, of a feeding belt to convey the cans to the carriage, a carrier belt to receive the cans after leaving the carriage, and a stationary guide arranged in juxtaposition to said carrier bolt to guide the cans to the latter, substantially as specified. 3rd. The combination, with a rotary carriage, means for operating the same, and stationary washing and drying devices, of a can-holder fixed to the carriage, a temporary cap adapted to cover and close a can when arranged in said holder, and means for operating said cap, substantially as specified. 4th. The combination with a rotary carriage, and means for operating the same, and stationary washing and drying devices, of a can-holder mounted upon said carriage and provided with a revoluble base to support a can, a temporary cap to cover and close the top of the can, and means for rotating said base, substantially as specified. 5th. The combination with a rotary carriage, and means for operating the same, and washing and drying devices arranged in operative relation with said carriage, of a can-holder mounted upon the carriage, a temporary cap adapted to cover and close the can supported by said holder, a lever connected to the stem of said cap, and a cam arranged in operative relation with the lever whereby the cap is alternately raised and lowered to engage and release the can, substantially as specified. 6th. The combination with a rotary carriage, and means for operating the same, and washing and drying devices arranged in operative relation with the carriage, of can-holders mounted upon said carriage and provided with revoluble bases to support the cans, means for rotating said bases, vertically-movable discs arranged in cavities in the bases, means for elevating said discs, and a guide to engage the cans and move them laterally from the bases, substantially as specified. 7th. The combination with a rotary carriage, and means for operating the same, and washing and drying devices arranged in operative relation with the carriage, of can-holders mounted upon the carriage and provided with revoluble bases to support the cans, discs 33 seated in cavities in the said bases, means for rotating the bases, a fixed cam block to engage the stems of said discs to elevate the same and the superimposed cans, and a guide 61 to remove the cans from the bases, substantially as specified. 8th. The combination with a rotary carriage and means for operating the same, and washing and drying devices arranged in operative relation with the carriage, of can-feeding devices having a continuously-moving belt 16, can-holders mounted upon the carriage and provided with guards 36, and a guiding-arm arranged to direct the cans successively into the holders, substantially as specified. 9th. The combination with a rotary carriage and means for operating the same, and washing and drying devices, of feeding mechanism having a continuously-moving belt to convey the cans to the carriage, can-holders mounted upon the carriage and having lateral guides, and a yielding guide-arm arranged to direct the cans into the holders and adapted to yield to prevent injury thereto, substantially as specified. 10th. The combination with a carriage and means for operating the same, and washing and drying devices, of a feeding mechanism having a continuously-moving belt, outer and inner parallel guides arranged at the opposite edges of said belt, a pivotal guiding-arm, and means for holding the free end thereof in contact with the outer of the parallel guides, and can-holders mounted upon the carriage and adapted to receive the cans from the feeding mechanism, substantially as specified. 11th. The combination with a rotary-carriage and means for operating the same, can-holders mounted upon said carriage, and feeding mechanism to convey the cans into said holders, of a washing device having a water-box provided with an elongated spray-opening, means for adjusting the width of said opening, and a drying device arranged in operative relation with the carriage, substantially as specified. 12th. The combination with a rotary-carriage and means for operating the same, can-holders mounted upon the carriage, feeding mechanism arranged to convey the cans into said holders, and a washing device arranged in operative relation with the carriage, of a drying device consisting of a segmentally-disposed mat provided with outstanding webs, and means for adjusting said mat to the desired distance from the carriage, substantially as specified. 13th. The combination with a rotary-carriage and means for operating the same, can-holders mounted upon said carriage and having revoluble bases provided with means for operating the same, feeding mechanism arranged to supply the cans and convey them into said holders, and a washing device arranged in operative relation with the carriage, of a drying device consisting of a segmentally-disposed mat provided with inclined outstanding webs to contact with the side surfaces of the rotating-cans, and means for adjusting the mat toward and from the carriage, substantially as specified. 14th. The combination with a rotary carriage and means for operating the same, washing and drying devices arranged in operative relation with the carriage, and can-holders mounted upon the carriage, of a guide 61, to engage and guide the cans from the holders, an opposite guide 61, a platform arranged between said guides to receive the cans from the holders, and means for conveying the cans from said platform, substantially as specified. 15th. The combination of a base provided with an upright gudgeon, a rotary carriage mounted upon said gudgeon, a driving-shaft mounted in bearings upon the base and connected by gearing to the said carriage, can-holders mounted upon the carriage and having a rotary base, a fixed circular rack arranged to engage a pinion carried by said rotary base, and stationary washing and drying devices arranged in operative relation with the carriage, substantially as specified. 16th. The combination of a base having a vertical gudgeon, a rotary carriage mounted upon said gudgeon, a driving-shaft geared to the carriage, washing and drying devices arranged in operative relation with the carriage, a cam 44, having a spider secured to the gudgeon, can-holders mounted upon the carriage and provided with revoluble bases, means for rotating the bases of the can-holders, vertically slidable stems 39, mounted in guides carried by said holders, rotary caps carried by the stems to cover and close the cans, levers loosely connected to said stems and arranged in operative relation with the said cam, and springs 41, provided with adjusting devices to vary the pressure of the caps upon the cans, substantially as specified.

No. 45,565. Automatic Elevator Fire Trap.

(*Trappe à feu automatique pour élévateurs.*)

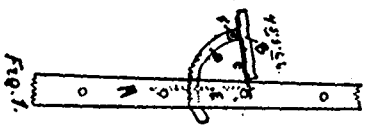


Thomas G. Lamb, Homestead, Pennsylvania, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. The combination with an elevator shaft and car, of a series of vertically moving horizontal doors, two supporting connections at each side of end of each door, and a single weight for each two connections. 2nd. The combination with an elevator shaft and car, of a series of vertically moving horizontal doors, a single weight for each end or side of each door, the weights at end or side being in a vertical line one above the other, and connections between the ends or sides of the doors and weights. 3rd. The combination with an elevator shaft and car, of a series of vertically moving horizontal doors, a chain for each corner of the doors, two pulleys at the

upper end of the shaft for each chain, and weights which are connected to the ends of the chains. 4th. The combination with an elevator shaft and car, of a series of vertically moving horizontal doors, a chain for each corner of each door extending upward therefrom and across inward towards the centre of the shaft, and a single weight for two of said chains at each end of the doors, to which the opposite ends of the chains are connected at each side thereof. 5th. The combination with an elevator shaft and car, of a series of vertically moving horizontal doors, a single weight for each side of each door, the weights being placed in a vertical line one above the other, a chain for each corner of each door, which extends upward and downward to opposite sides of their respective weights, the connecting points of each weight being wider than the connecting points of the weight above, whereby the upper weights travel between the chains attached to the lower weights. 6th. The combination with an elevator shaft and car, of a series of doors above and below the car, and a series of yielding stops for the doors. 7th. The combination with an elevator shaft and car, of a series of doors moving vertically with the car, and a series of spring supported stops which project into the shaft.

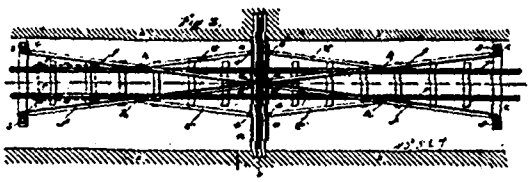
No. 45,566. Ladder Shelf or Scaffolding.
(*Marche d'échelle ou échafaudage.*)



John George Heilig, Hamilton, Ontario, Canada, 16th March, 1894; 6 years.

Claim.—1st. The combination of the shelf B, ladder A, and adjustable bracket of iron C, D, E, F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the hook bracket C, movable radial bracket D, hinged at F, and ladder-plate E, substantially as and for the purpose hereinbefore set forth.

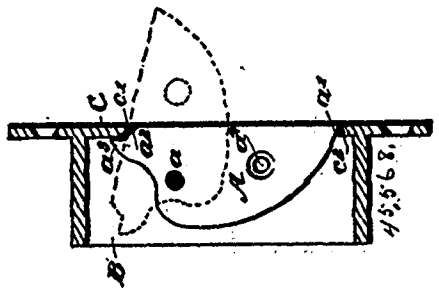
No. 45,567. Self-Acting Doors for Mines.
(*Porte automatique pour mines.*)



William Maddin, Westville, Nova Scotia, Canada, 16th March, 1894; 6 years.

Claim.—1st. The combination of the running or sliding doors *m*, *m*, and the opening or guide levers *f*, *f*, *f*, *f*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the opening or guide levers *f*, *f*, *f*, *f*, and the parallel bars *g*, *g*, *g*, *g*, substantially as and for the purpose hereinbefore set forth.

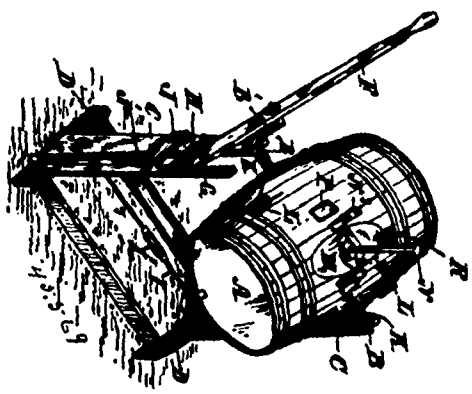
No. 45,568. Attachments for Window and Door Frames for Securing Storm Sashes and the Like. (*Attache de cadres de portes et fenêtres pour assujétir les châssis.*)



John D. Johnston, Newport, Rhode Island, U.S.A., 16th March, 1894; 6 years.

Claim.—1st. An attachment for window or door frames, consisting of a tongue having a transverse aperture formed in its free end to receive a fastening screw or the like, and a support to which said tongue is pivoted, the support having a slotted face plate and the tongue adapted to hang normally substantially flush with the face plate, and when swung outward to bear against the face plate at the upper end of the slot and be braced or stayed thereby, the said tongue when in the latter position being adapted to be rigidly secured to a storm sash or the like, substantially as shown and described. 2nd. An attachment for window or door frames, consisting of a casing having a slotted face plate, the top and bottom walls of which are upwardly bevelled, and a tongue pivoted in the case and movable on its pivot to project approximately half its length beyond the face plate, and adapted when projected to be rigidly secured to a storm sash or the like, the said tongue having at its top and bottom surfaces corresponding to the top and bottom walls of the slot in the face plate, and the outer end of said tongue apertured transversely to receive a fastening screw or the like, substantially as described.

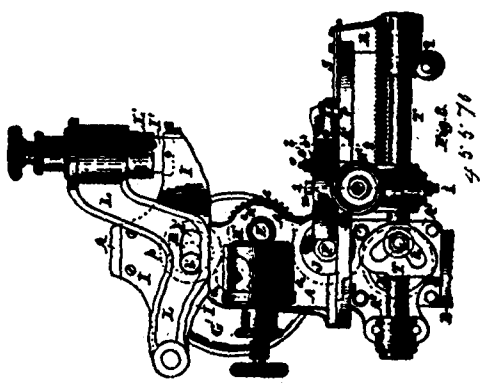
No. 45,569. Churn. (*Baratte.*)



William H. Church, Fenelon Falls, Ontario, Canada, 16th March, 1894; 6 years.

Claim.—1st. The barrel churn A, mounted on a rock-shaft or divided axle B, supported on bearings or posts C, C, secured to a base or frame D, and rocked by a lever F, connected to said axle by a crank B^1, said lever fulcrumed to an oscillating post G, pivoted to said base, for rocking or tilting the barrel churn, as set forth. 2nd. The churn or cream chamber A, mounted on a rock-shaft or divided axle B, supported on bearings or posts C, C, said shaft or axle having wire springs K, K, coiled reversely between said chamber and bearings, the ends of the springs engaging said posts and buttons L, secured to the churn barrel or chamber, said axle having a crank B^1, connecting with a lever F, fulcrumed near one end to a post G, secured to the supporting frame D, as set forth. 3rd. The combination with the churn body or barrel A, mounted on a rock-shaft or divided axle B, or bearings C, C, said shaft or axle having a crank B^1, at one end of the lever F, connected to said crank, and fulcrumed to a post G, and a coiled spring H, connecting said post and bearing C, whereby the post oscillates when the churn is rocked, to give ease of motion, as set forth. 4th. The combination with the the barrel A, having an observing glass P, of the aperture cover M, having a rubber packing M^1, circumferentially, a ventilating tube R, clamp screw N, clamp bar N^1, engaging with cleats N^2, secured to said barrel, and breaker-rods or bars S, S, projected between cleats T, secured to said barrel, as set forth, and for the purpose described.

No. 45,570. Machine for Forming Heel Stiffeners.
(*Machine à former les talons de chaussures.*)

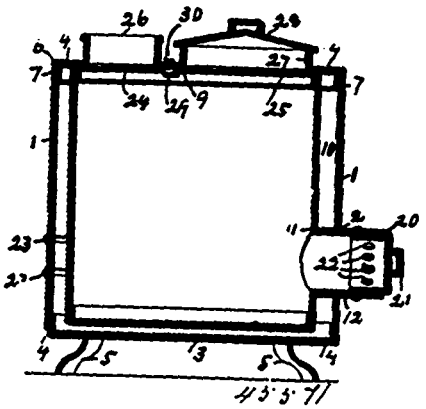


Louis Coté, St. Hyacinthe, Quebec, Canada, 17th March, 1894; 18 years.

Claim.—1st. In a machine for forming heel stiffeners, the combination of the bed or table A^1, having a cylinder bore extending

transversely through the same; a pair of piston-like blocks N, fitted to said bore and having the plates *s*, secured thereto and projecting upward through slots in said table, a nut set in the inner end of each of said pistons, the screw shaft N^1, having right and left screw threads formed thereon, and fitted one to each of said nuts, the forked stop *s*, set in the table A^1, and engaging a groove in said shaft, the spring N^2, the followers n^2, the wheel-nuts N^3, the lever n^1, or other means of revolving said shaft, the studs *m*, set in said pistons, the levers O^1, mounted on said studs, *the moulds* O, O, fulcrumed *upon said* levers, a heel-shaped former secured to the table A^1, in a fixed position, the cam J, and means having provision for revolving said cam. 2nd. In a machine for forming heel-stiffeners, the combination with the table A^1, of the stud or bolt *o*, set in said table, a heel-shaped former fitted to said stud and provided with the steady pin o^2, and a circular recess in its upper side and surrounding said stud *o*, the rubber spring o^4, the nut o^1, and the washer o^3, all constructed, arranged and operating substantially as and for the purposes described. 3rd. In a machine for forming heel-stiffeners, the combination with a pair of side moulds, and means for operating said moulds, of a fixed former secured to the table of the machine and provided with an adjustable piece fitted to a longitudinal groove in the heel end of said former, and adapted to be adjusted longitudinally therein to form counters of different shapes.

No. 45,571. Sheet Iron Heating Stove.
(Poêle en feuille de tôle.)



Robert McD. Smith and Charles B. Rose, both of Louisiana, Missouri, U.S.A., 17th March, 1894; 6 years.

Claim.—1st. The improved sheet iron heating stove, comprising the outer shell 1, having straight vertical sides, and a draft-opening at a point adjacent its lower end, in combination with a permanent head 3, closing the lower end of said shell, and provided with a series of holes or perforations 4 adjacent its marginal edge, the upper head 6, having a downwardly projecting flange 7, and provided with a series of holes or perforations 4 adjacent its edge and made readily removable from said shell bodily, the inner shell 8 located within said outer shell, but removable bodily therefrom, having an upper head 9, fastenings which hold said inner shell in place in said outer shell, so as to leave a clear annular air-space 10 between each shell, said space extending continuously around said inner shell, said heads 6 and 9 being normally in contact, and forming a double-thick head for the stove, and having registering or aligned smoke-exit and fuel openings, a removable cover 28 for the fuel openings, a sheet-metal draft-pipe or box 12 passing through said draft opening adjacent the lower end of said outer shell and through an opening in said inner shell, means for fastening this draft-pipe to both shells, and means for regulating the passage of air into the stove through this draft-pipe, all arranged substantially as shown and described. 2nd. The improved sheet iron heating stove, constructed with outer and inner shells separated by a continuous air-space entirely surrounding the inner shell, heads which have air inlet and exit openings leading to and from said surrounding air-space, the upper head of the outer shell being detachable, and the lower head fixed, said inner shell being removable bodily from said outer shell upon detechment of said removable upper head, suitable smoke exit and fuel openings formed in the stove, and means for detachable locking said pipe to both shells, substantially as and for the purpose herein specified. 3rd. The improved heating stove, having two upper heads in contact and made of sheet-metal, a sheet-metal shell which supports said heads, said heads having smoke-exit and fuel-openings formed therein, a horizontal brace-bar 20 arranged beneath and in contact with the inner head, and with its ends in contact with said shell, and means for binding said heads and said bar securely together, substantially as specified. 4th. In a stove, a draft-pipe secured to the shell by rocking-bolts 15 having inner and outer lugs 14 and 17, as specified.

No. 45,572. Window. *(Fenêtre.)*

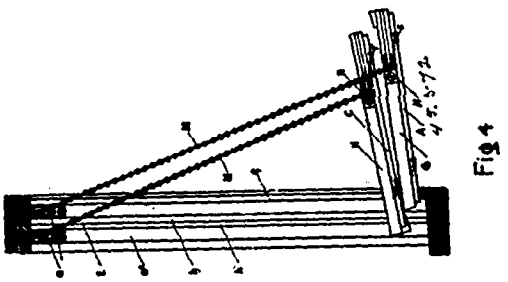
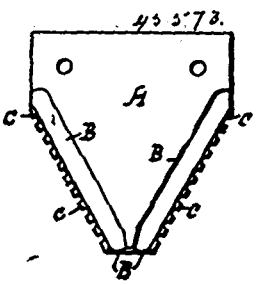


Fig 4

Zotique Leroux, Montreal, Quebec, Canada, 17th March, 1894; 6 years.

Claim.—In a window, the combination of the window frame N, having the projections c^2, separators *h*, and recesses *c* and h^1, and pulleys O, having frames *o* provided with curved projections o^3, with the window sashes G and H, stoppers A, B, C and D, eccentrics F composed of the eccentric proper I, handle *i*, plates J and K, and screws j^2 and i^1, chains M having a ring *m*, weights L, castings N, having a channel n^1, opening n^2, screw *n*, and side projections n^3, substantially as described and for the purposes set forth.

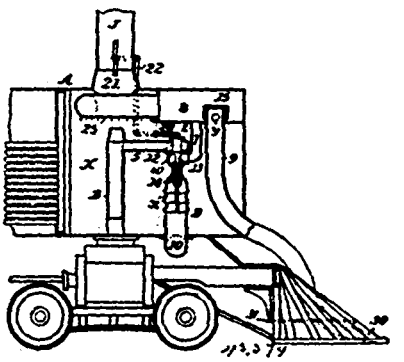
No. 45,573. Knife or Cutter for Mowers, etc.
(Couteau pour faucheuses, etc.)



De Wane B. Smith, Deerfield, New York, U.S.A., 17th March, 1894; 6 years.

Claim.—1st. A mower knife A, having a cutting edge on the plane of one of its faces, and a channel E in its face parallel with said edge, substantially as and for the purposes set forth. 2nd. A mower knife having a cutting edge, and a bevel surface C extending backwardly from said edge, and a channel B in its face arranged back of the inner portion of said surface and parallel with said cutting edge, substantially as and for the purpose specified. 3rd. A mower knife A having a cutting edge, a channel B in its face arranged back of and parallel with said edge, and serrations or corrugations extending from the cutting edge back of the channel, substantially as and for the purpose described.

No. 45,574. Locomotive. *(Locomotive.)*

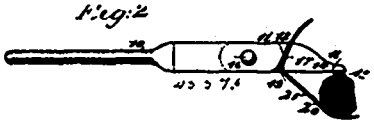


William Ezra Worthen, New York, U.S.A., 17th March, 1894; 6 years.

Claim.—1st. A locomotive provided with a condenser communicating with the exhaust nozzle and with the smoke box, substantially as set forth. 2nd. The combination with the exhaust nozzle of a locomotive, of a condenser communicating with the said nozzle and with the smoke box, and with a water supply pipe, and a valve controlling the communication between the exhaust nozzle and the

condenser, substantially as set forth. 3rd. The combination in a locomotive, of the exhaust nozzle and a valve closing the top of the same, a condenser communicating with the exhaust nozzle and with the smoke box, a water pipe communicating with the condenser, a valve controlling the combination between the exhaust nozzle and the water pipe and the condenser, *and means for shifting the said* valve from the cab, substantially as set forth. 4th. The combination of the exhaust nozzle, condenser, water pipe and controlling valve, and a damper arranged in the smoke stack, and connected to be closed as the valve opening the communication between the nozzle and the condenser is opened, substantially as set forth. 5th. The combination of the exhaust nozzle, condenser, water pipe controlling valve, and a valve 18 for closing the exhaust nozzle, and damper within the smoke stack, and a lever connected with the valve and damper and with a rod extending to the cab, substantially as and for the purpose set forth. 6th. The combination with the exhaust nozzle, of a condenser communicating with a discharge pipe or outlet and with the smoke box, and provided with a nozzle 14, a water pipe communicating with the condenser above said nozzle and a valve closing the communication between the exhaust nozzle and the condenser, and between the water pipe and the upper end of the nozzle 14, substantially as set forth. 7th. The combination of the exhaust nozzle, condenser, controlling valve, and water pipe, of a receptacle 8, and a pipe communicating with said receptacle and extending downward and provided with a scoop, and means for adjusting the scoop from the cab, substantially as and for the purpose set forth.

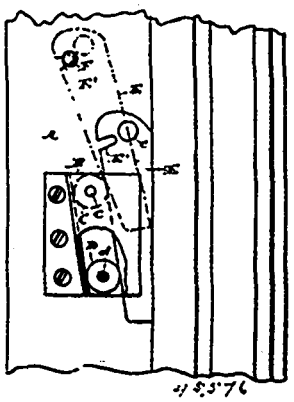
No. 45,575. Wire Stretcher. (*Tendeur de fil de fer.*)



William P. Negus, West Branch, Iowa, U.S.A., 17th March, 1894; 6 years.

Claim.—1st. A wire stretcher, comprising a forked lever, the prongs of which have inclined ends, and a dog pivoted between the prongs, the dog having inclined shoulders opposite the ends of the prongs, and teeth at its outer end, substantially as described. 2nd. A wire stretcher, comprising a forked lever, the prongs of which have inclined ends, a dog pivoted between the prongs and provided with shoulders adapted to swing opposite the inclined ends of the prongs, and a toothed cross piece on the free end of the dog, substantially as described.

No. 45,576. Sash Holder. (*Arrête-croisée.*)



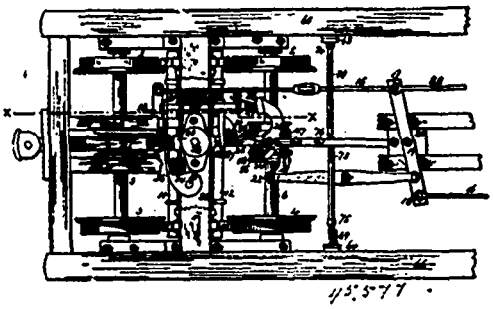
James Dolphin and William Thomas Whitehead, both of Magog, Quebec, 17th March, 1894; 6 years.

Claim.—1st. The combination, with a vertically sliding sash, of a bracket attached to the frame, a taper wedge carried loosely in such bracket and sheaves mounted in same, as and for the purposes set forth. 2nd. A sash holder composed of a tapering wedged adapted when down to be held closely against face of sash and when raised to instantaneously clear and release such sash and means for effecting same, all as herein set forth.

No. 45,577. Car Brake. (*Frein de chars.*)

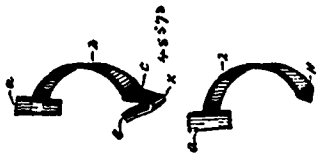
Edwin Webster Luce, Meadville, Pennsylvania, U. S. A., 17th March, 1894; 6 years.

Claim.—1st. In an automatic brake mechanism, the combination of a draw-bar mounted upon a portion of the framing whose vertical position varies with the weight of the car, and a variable stop to limit the movement of the bar, said stop being rigidly secured to a fixed portion of the framing, substantially as described. 2nd. In an automatic brake mechanism, the combination of the draw-bar, a push-bar, and an intermediate pivoted lever, all mounted on a portion of the framing whose vertical position varies with the weight of the car, and a variable stop interposed between the lever and the push-bar, said stop being rigidly secured to a fixed portion of the framing, substantially as described. 3rd. In an automatic brake mechanism, the combination of a draw-bar and push-bar mounted on a portion of the framing whose vertical position varies with the weight of the car, and an intermediate wedge-shaped stop-block being rigidly secured to a fixed portion of the framing with its wide part uppermost, substantially as described. 4th. In combination the draw-bar, the lever pivoted to the floor-frame, the spring for normally retracting the lever, the wedge shaped stop for said bar, and the brake mechanism operated by the movement of the pivoted spring pressed lever, as set forth. 5th. In combination with the ordinary brakes of a car and their operating mechanism, comprising a bar pivoted centrally below the floor-frame, a pivoted carriage, a lever centrally pivoted to the end of said carriage, a push-bar for operating said lever, a pivoted lever for operating said push-bar, a variable stop for said pivoted lever, and the draw-bar operating upon said lever, as set forth. 6th. The combination with a draw-bar having a recessed rear end, of a spring seated in said recess, and a loose yoke connected with the draw-bar and bearing against the spring, substantially as described. 7th. In combination the draw-bar, its spring pressed yoke, the spring returned lever in the path of said yoke and brake, operating mechanism connected to said lever, as set forth. 8th. In combination the draw-bar, the spring returned bar pivoted to the car, an arm connected to its free end, and switching mechanism operated by the movement of said car, as set forth. 9th. In combination the draw-bar, the spring therein, the pin through the spring and the end of the draw-bar, and the yoke encircling the end of the draw-bar and having a bearing inside the draw-bar, upon the end of the spring, as set forth. 10th. In combination the draw-bar, the lever pivoted to the cross-beam of the floor-frame, in the path of the draw-bar, the spring for normally holding it in contact with the draw-bar, and the wedge stop secured to the truck with its head upward, as set forth. 11th. In combination, the carriage pivoted to the truck, the lever pivoted to the end of the carriage and having a bearing face at one end thereof, and a push-bar with head thereon to engage with said head, the face and head being of a width to permit lateral and vertical movement while preserving contact, as set forth. 12th. In combination, the switching cylinder having annular grooves of unequal depth, the switch pin engaging said grooves, and the trip pin arranged to hold the pin within, but out of contact with the bottom of the deeper grooves, as set forth. 13th. The switching cylinder provided with sets of two annular grooves each, and switch grooves connecting the annular grooves, one annular groove of each set being deeper than the other, as and for the purpose set forth. 14th. In combination, the carriage pivoted to the truck, the pivoted bar connected at its centre therewith, a switch pin mounted at the pivotal point, a cross pin in the switch pin and projecting toward the centre of the car, a shifting bar engaging said pin, and a switching or shifting rod for moving the shifting bar, laterally as set forth. 15th. In combination with the floor-frame of a car, a shifting bar pivoted at the centre thereof, and a rod for laterally moving said shifting bar, said bar being mounted in brackets depending from the side beams of the floor-frame, and having a central cranked portion to support and adjust the shifting bar, as set forth. 16th. In combination the pivoted shifting bar, the laterally movable and rotatable switching rod mounted below the floor-frame and having the central cranked portion and short splines, and the brackets depending from the floor-frame and having round holes to receive the switching rod and side notches to receive the splines, as set forth. 17th. In combination, the carriage pivoted to the truck, the lever centrally pivoted thereto, the vertically movable switch pin at the centre thereof having cross pin, the trip lever pivoted to the carriage having horizontal arm to engage the cross pin and an upright at the opposite end, the push-bar, and the horizontal arm thereto to engage the upright on the trip-bar, as set forth. 18th. In combination the push-bar, the carriage and the switch-pin, of a trip-bar pivoted to the carriage and engaging the switch-pin at one



end and the push-bar at the other, whereby the withdrawal of the push-bar causes the partial elevation of the switch-pin, as set forth. 19th. In a car brake mechanism, a cam-groove cylinder, a switch-pin to engage its grooves, a trip-bar, and the push-bar, the trip-bar and push-bar operating to partially elevate the switch-pin, substantially as set forth.

No. 45,578. Window Shade and Roller Clip. (*Store de fenêtre et lien de bâtons.*)



Thomas P. Brown, Belleville, Ontario, Canada, 19th March, 1894; 6 years.

Claim.—As an article of manufacture a certain metalic clip of the character described, bent semi-circular having a tooth E formed as described, and having a body portion A with an arm B at right angles, substantially as shown and described and for the purpose specified.

No. 44,579. Fastener for Head Covering. (*Attache pour coiffures.*)

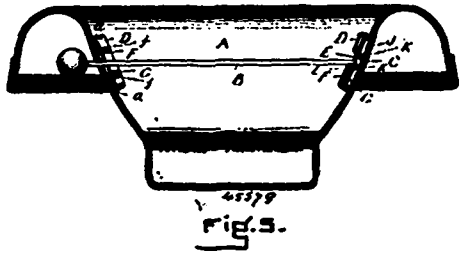


Fig. 3.

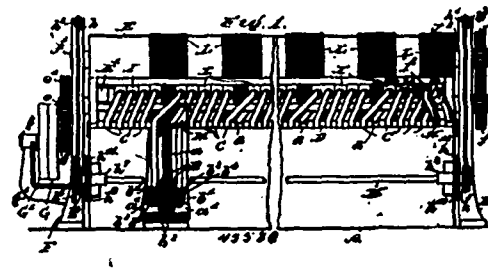
William Y. Allen, Boston, Massachusetts, U.S.A., 19th March, 1894; 6 years.

Claim.—1st. A fastening attachment for head coverings, consisting of a perforated sheet of flexible yielding material, a support for said sheet, and a pin or wire having an enlargement or knob on its end to engage the flexible sheet, substantially as described. 2nd. A fastening attachment for head coverings, consisting of a perforated sheet of flexible yielding material, and a support for said sheet, adapted to be secured to the head covering, substantially as described. 3rd. A head-covering, having a fastening attachment, consisting of a perforated sheet of flexible yielding material, and a perforated plate of rigid material superimposed on the yielding material and secured to the head covering to support the yielding material away from the body of the head covering, substantially as described. 4th. A head covering having a fastening attachment, consisting of a perforated sheet of flexible yielding material and two perforated plates of rigid material secured to the head covering and between which the sheet of flexible material is arranged, substantially as described. 5th. A head covering, having a fastening attachment, consisting of a perforated sheet of flexible yielding material and a perforated plate of rigid material superimposed on the yielding material and secured to the head covering, said plate having its central portion pressed up or raised and supporting the flexible material away from the body of the head covering, substantially as described.

No. 45,580. Machine for Scouring and Rinsing Cloth. (*Machine à dégraisser et rincer les étoffes.*)

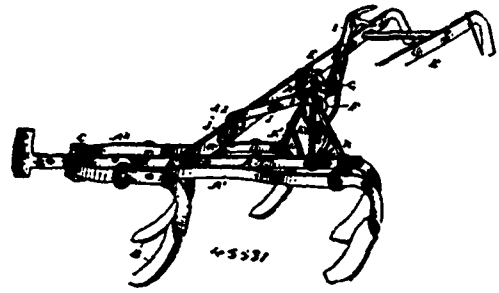
Matthew H. Kohlrausch, Billerica, Massachusetts, U.S.A., 19th March, 1894; 6 years.

Claim.—1st. The combination of a series of laterally adjacent tanks, submerging rollers arranged in each tank, a carrier-roll and continuous squeeze-rolls, arranged longitudinally of said series of tanks and common to all said tanks, and guides, arranged to deflect the cloth in its passage from said carrier-roll to said feed roll laterally and to guide said cloth from each tank to the next, as and for the purpose specified. 2nd. The combination of a tank, divided by vertical partitions into a series of laterally-adjacent tanks, submerging-rollers, supported in each of said last-named tanks, a carrier-roll and continuous squeeze-rolls arranged longitudinally of said series of tanks and extending above all said partitions, and a guide, arranged to conduct cloth from said carrier-roll above said partition from one side to the other side of each of said partitions, to pass



such cloth successively through all said tanks without intermediate handling, as and for the purpose specified. 3rd The combination of a series of laterally adjacent tanks, and a pair of continuous squeeze-rolls, arranged longitudinally of said series of tanks, and common to all said tanks, and both tapering uniformly in the same direction, as and for the purpose specified. 4th. The combination of a series of laterally adjacent tanks, and a pair of continuous squeeze-rolls, arranged longitudinally of said series of tanks and common to all said tanks and provided at the side of each tank adjacent to the next tank with annular grooves and with annular cushions arranged in said grooves and projecting from said grooves, as and for the purpose specified. 5th. The combination of two or more laterally-adjacent tanks, a pair of continuous squeeze-rolls, arranged longitudinally of said series of tanks and extending over all said tanks, and drip-catchers arranged above the adjacent sides of adjacent tanks to receive the liquid dripping from cloth passing between said squeeze-rolls from one tank to the next, and to return said liquid to the tank from which it was absorbed by said cloth, as and for the purpose specified. 6th. The combination of a tank, submerging-rolls arranged therein, a pair of continuous squeeze-rolls arranged parallel with said submerging-rolls, guides, arranged to deflect cloth before entering said squeeze-rolls and to guide said cloth from end to end of said tank, and another guide arranged to deflect said cloth in the other direction and to cause the last turn of said cloth to overlay two preceding turns thereof between said squeeze-rolls, as and for the purpose specified. 7th. The combination of a tank, submerging-rolls, arranged therein, a pair of continuous squeeze-rolls arranged parallel with said submerging-rolls, guides, arranged to deflect cloth before entering said squeeze-rolls and to guide said cloth from end to end of said tank, another guide arranged to deflect said cloth in the other direction and to cause the last turn of said cloth to overlay two preceding turns thereof between said squeeze-rolls, and a guide-roll arranged to hold said last turn of cloth out of cloth with the preceding turns of cloth until said last turn enters said squeeze-rolls, as and for the purpose specified. 8th. The combination of a series of laterally-adjacent tanks, a pair of continuous squeeze-rolls, arranged longitudinally of said series of tanks and common to all said tanks, said squeeze-rolls being provided with annular grooves arranged above the adjacent sides of adjacent tanks, and with annular cushions, arranged in said grooves and projecting from said grooves, and drip-catchers, arranged below said cushions, to receive the liquid dripping from cloth passing between said squeeze-rolls from one tank to the next, and to return said liquid to the tank from which it was absorbed by said cloth, as and for the purpose specified.

No. 45,581. Cultivator. (*Cultivateur.*)

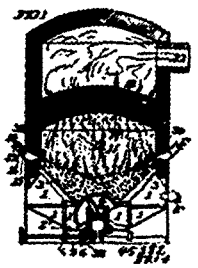


Andrew T. Donaldson, Mount Clemens, Michigan, U.S.A., 19th March, 1894; 6 years.

Claim.—1st. The combination, with a cultivator provided with laterally adjustable tooth bearing side-bars and handles, of a rock-bar J journalled in said handles, an operating lever connected with said rock-bar toward its forward end, a standard provided with a rack-bar, a pawl engaging said lever and rack bar, and vertically operative spread irons connected with the operating lever to laterally adjust said side-bars, substantially as described. 2nd. The combination, with a cultivator provided with a centre-bar, laterally

adjustable side bars, and handles, of a rock bar J journalled in said handles, as operating lever I jointedly engaged with said rock-bar toward its forward end, an upright standard E^2, braces H and H^1 connecting said standard with said handles, vertically movable spread irons K and K^1 connected with the operating lever and side bars, braces L and L^1 connecting said spread irons to the centre-bar, and mechanism to hold said lever in any given position, substantially as described. 3rd. In a cultivator, the combination, with a centre bar, adjustable side bars, and handles, of an upright standard, braces leading from said standard to said handles, an operating lever, spread irons leading from said lever to said side-bars and having a jointed engagement therewith, braces jointedly connected with said spread-irons and said standard, and pawl, and ratchet mechanism to hold the operating lever in any given position, substantially as described. 4th. In a cultivator provided with a central tooth bearing-bar, adjustable side-bars, and handles, an upright standard formed with an elongated slot engaged with the central bar, an operating lever vertically movable in said slot, braces connecting the standard and handles, spread-irons jointedly connected with said lever and side-bars, braces jointedly connected with the central-bar and spread-irons, and mechanism to hold the lever in a given position, substantially as described. 5th. In a cultivator, the combination, with a centre-bar, laterally adjustable side-bars and handles, of a vertically and longitudinally movable operating lever, a standard provided with a rack-bar, vertically operated spread-irons connecting the operating lever, side-bars, and centre-bar, a pawl engaging said lever and rock-bar, and braces connecting the handles with said standard, substantially as described.

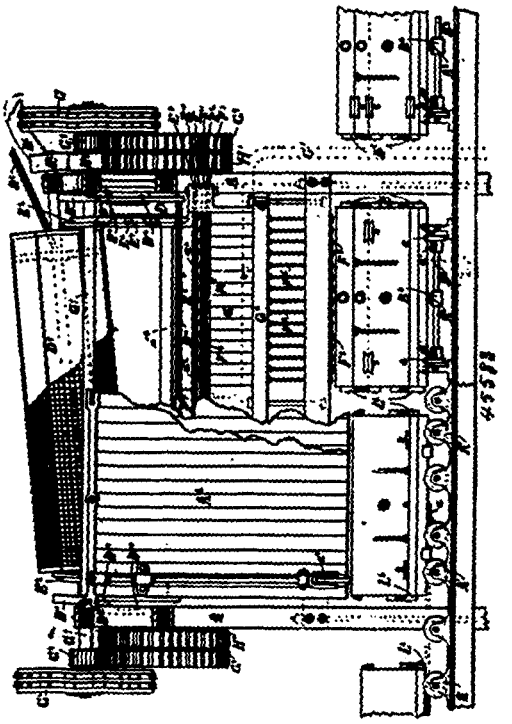
No. 45,582. Furnace. (*Fournaise.*)



Samuel P. Hutchinson and S. Lloyd Wiegand, both of Philadelphia, Pennsylvania, U.S.A., 19th March, 1894; 6 years.

Claim.—1st. In a gas producing furnace, a concave dome arranged to deflect and concentrate heat upon the fuel in transit on the grate, a fuel supporting grate constructed and arranged to move the fuel from the entrance to a discharging aperture and an air tight ash-pit, in combination with a disintegrating mechanism, arranged substantially as shown to discharge clinkers and fuel residuum without ingress of air draft, substantially as set forth. 2nd. In a gas producing furnace an air tight ash-pit with a regulating air admitting mechanism, a fuel supporting grate a furnace lining provided with air heating conduits, arranged as described to deliver heated air above the fuel, and a deflecting dome, arranged to concentrate heat on the fuel, in combination with a partition having gas discharge apertures leading outward from the furnace to a flue, and a deflecting refractory screen or screens in said flue opposite such gas discharge apertures arranged to operate, as and for the purpose set forth. 3rd. In a gas producing furnace an enclosed air tight ash-pit, means of introducing air thereto in regulated quantities, and an ash and cinder discharging aperture in said ash pit, in combination with a vessel, moving in contact with the edges of said aperture, constructed and arranged to alternately receive cinders and ashes through said aperture, and to close said aperture, and when closed discharge such ashes and cinders, substantially as set forth. 4th. In an enclosed gas producing furnace, a fuel support, a perforated concave reflecting dome, arranged to concentrate heat upon the fuel, in combination with refractory covers located near the reflecting dome, and arranged to obstruct radiation of heat through the aperture and permit egress of gas through said apertures, substantially as set forth. 5th. In a gas producing furnace, an enclosed furnace chamber lined with refractory materials, air heating channels through said lining, arranged to receive air from an enclosed ash-pit and a fuel supporting grate, in combination with fuel supplying conduits, each provided with two or more valves or doors, arranged to open and close alternately, and restrict ingress and egress of air through said fuel supplying conduits, substantially as set forth. 6th. In a gas producing furnace, an enclosed air tight ash-pit, a deflecting dome 17, and a stationary inclined grate arranged to receive fuel near the wall or walls of said furnace and conduct such fuel toward the focus of the deflecting dome 17, in combination with a moving convex segmental grate, arranged to gyrate or reciprocate in contiguity with said stationary grate and receive fuel and cinders therefrom and disintegrate and discharge clinkers into the ash-pit, substantially as set forth.

No. 45,583. Moulding Machine. (*Machine à mouler.*)



Lewis Edworthy, Hamilton, Ontario, Canada, 19th March, 1894; 6 years.

Claim.—1st. In a moulding machine, the combination of a series of rollers A^1, A^6, the tracks A^2, A^3, A^4 and A^5, together with a series of pawls C, in connection with cables or chains A^7 and A^8, the same having a reciprocating motion, substantially as set forth and for the purpose specified. 2nd. In a moulding machine, the combination of revolving sieves D^2, the vibrating sieve D^{10}, eccentric rod D^{12}, and the wheel a^4 for shifting the sand on the pattern, substantially as set forth and for the purpose described. 3rd. In a moulding machine, the combination of the cross heads E^2, sliding block E^7 on the shafts E^4 and F^5 connected by gearing with the driving shaft G^7, giving to the cylinders a reciprocating motion, substantially as set forth and for the purpose specified. 4th. In a moulding machine, the combination of a series of cylinders G communicating with each other through the chamber and aperture F^4, the pistons, angular piston rods and piston heads, this constitutes the self-adjusting rammers or pressure pistons, substantially as set forth and for the purpose described. 5th. In a moulding machine, the combination of a series of cylinders G, communicating with each other through the chamber and aperture F^4, the pistons, angular piston rods and piston heads, a portion of which is cut away, for the purpose of giving more compactness to the sand around the walls of the flask, and to both sides of the bars in the cope, substantially as set forth and for the purpose described. 6th. In a moulding machine, the combination of a chamber and aperture F^4, over and in connection with the cylinders, and through which the cylinders communicate with each other, substantially as set forth and for the purpose described. 7th. In a moulding machine, in combination with the chamber and aperture F^4, a flexible diaphragm F, and the plugs or studs a^3, for testing the cylinders when under repair, substantially as set forth and for the purpose described. 8th. In a moulding machine, the use of air, water, steam, or other fluids for giving pressure to the pistons in compressing the sand in the mould, and to the piston in venting the mould, substantially as set forth and for the purpose described. 9th. In a moulding machine, in combination with the chamber and aperture F^4, and the cylinders G, a tank or reservoir and a flexible tube connecting the same with the chamber to give the pistons the necessary force, substantially as set forth and for the purpose described. 10th. In a moulding machine, the combination of the pumps G^2, and a reservoir for storing and keeping a supply of fluid under pressure to give the pistons the necessary pressure on the sand, substantially as set forth and for the purpose described. 11th. In a moulding machine, a combination of valves to admit into the chamber and cylinders G, fluid under pressure from a tank or reservoir, and also for guaging the pressure of the same on the pistons, substantially as set forth and for the purpose described.

12th. In a moulding machine, the combination of the chute board or apron E, the sieve E^1, eccentrics H^3, arms H^4, shafts H^5, and the arms a^2 for refilling the knowel and cope after the first compression by the piston heads F^2, substantially as set forth and for the purpose described. 13th. In a moulding machine, the combination of revolving and reciprocating rammers, a gauge revolving with the rammers and a sliding frame supporting the same, lowering and raising the rammers out of the mould, substantially as set forth and for the purpose described. 14th. In a moulding machine, the combination of the spiral screw c^7, the sleeves b^7 and b^9, the pawls b^9 and b^{10}, the vertical shaft b^4, and the eccentrics S^2, giving the rammers, a reciprocating and a revolving motion, substantially as set forth and for the purpose described. 15th. In a moulding machine, the combination of the arms b^8 and b^9, and the sleeves of the rammers S^3, and the sleeves of the gauges S^4, by which the rammers may be set to any size of mould, substantially as set forth and for the purpose described. 16th. In a moulding machine, the arrangement of pulleys on the frame A, and in combination with a belt, for giving a reciprocating motion to the revolving rammers S^3, in all parts of the mould, substantially as set forth and for the purpose described. 17th. In a moulding machine, the automatic mechanical device, from d^3 to f^3 for lowering and raising the rammers out of the mould, and for starting and stopping parts of the machine when making deep moulds, substantially as set forth and for the purpose described. 18th. In a moulding machine, a combination of the arms, levers and cams (from H^9 to K^4) for adjusting the bottom board on the knowel, the flat sprues in the cope, or a die for making a joint in the mould, when working a three or four part flask, substantially as set forth and for the purpose described. 19th. In a moulding machine, the combination of a reciprocating frame or platen (from K^2 to L^2), also the rods L^4 and the levers L^5 for pressing the bottom board on the knowel, and clamping the same, also compressing the sand in the cope, substantially as set forth and for the purpose described. 20th. In a moulding machine, a portable die p, of any form, plain or otherwise, for making the joint in a three or four part mould flask, substantially as set forth and for the purpose described. 21st. In a moulding machine, the hook L^6, the spring L^7, in combination with the bottom board, the follow-board or the flask, for clamping either of the aforesaid, substantially as set forth and for the purpose described. 22nd. In a moulding machine, the combination of a series of cylinders communicating with each other through a chamber and aperture similar to F^4, the piston and angular pointed piston rods, sliding in guides for venting the mould, substantially as set forth and for the purpose described. 23rd. In a moulding machine, the use of air, water, steam or other fluids under pressure for forcing the vent wires in the mould, substantially as set forth and for the purpose described. 24th. In a moulding machine, the combination of a series of augers h the tubes N^4 and N^6, the sheaves i and the frame N^5 and N^7, for cutting sprue holes in the cope, substantially as set forth and for the purpose described. 25th. In a moulding machine, the combination of the cross heads L^{10}, sliding blocks, clutches, arms and cams, from L^{10} to N, for giving the frame supporting the cylinders, vent wires, and augers, a reciprocating motion, substantially as set forth and for the purpose described. 26th. In a moulding machine, the combination of the rods I, the arms I^2, the cam K^4, the arms a^6, the wheel a^8, the rack a^9, in connection with the trunnion a^7, for turning the knowel over on the side track A^3, substantially as set forth and for the purpose described. 27th. In a moulding machine, the combination of the sprocket-wheel P^4, the chain P^2, the hooks g^4, the recess bars g^6 and g^7, for carrying the flask to either of the sections in figure 8, or on to a truck at the end of the machine, substantially as set forth and for the purpose described. 28th. In a moulding machine, the combination of a screw or worm-wheel O, the cam O^1, the lever K, rod K^2, arm K^3, shaft K^4, sleeve O^2, bevel pinion O^3, for reversing the motion of the sprocket-wheel and chain which carries the flask, substantially as set forth and for the purpose described. 29th. In a moulding machine, the combination of the bevel-wheel O^4, sprocket-wheels O^6, O^7 and O^8, the rollers m and the chain m^1, for carrying the flask to where the cope is lifted from off the knowel, and to where the patterns are drawn out of the mould, substantially as set forth and for the purpose described. 30th. In a moulding machine, the combination of the arm P^6, the rod P^7, the link P^8, arm and weight l^1, the arms l, the disc P^9, the wheel P^{10}, crank disc m^4, the sleeves Q and rods Q^1 for lifting the cope from off the knowel, holding the same in position for inspection, and closing the cope back on the knowel after the patterns are drawn, substantially as set forth and for the purpose described. 31st. In a moulding machine, the combination of the arm P^6, the rod P^7, the link P^8, the arm and weight l^1, the arms l, the disc R^4, the wheel R^5, the crank disc R^6, the sleeve Q^7 and Q^8, the rod Q^1, the pin n^9, the slot n^{10}, and the spiral sleeve R^2, for raising and lowering the frame R, and for swinging the same around and turning the frame from a horizontal to a vertical position or vice versa, substantially as set forth and for the purpose described. 32nd. In a moulding machine, the combination of the frame R, the grips n^6, the pawls n^4, the arms n^6, the rods n^7, the rods or studs n^8, pin n^9, and the journals n^2, for grasping the patterns and drawing the same out of the mould, substantially as set forth and for the purpose described. 33rd. In a moulding machine, the combination of a fan and flexible tubes, for the use of the attendant when dressing the mould, substantially as set forth and for the purpose described.

No. 45,584. Thill Support. (*Armon de limonière.*)

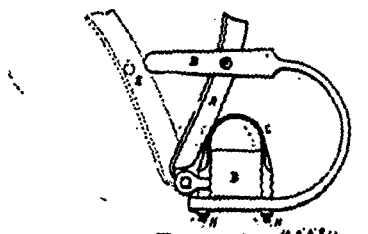
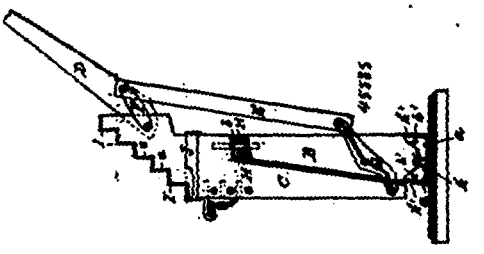


FIGURE 1. 45584

Charles M. Caughill, Melita, Manitoba, Canada, 19th March, 1894; 6 years.

Claim.—1st. The combination in a thill support for vehicles of the thill coupling or draw-jack, with a spring formed integral with the bottom plate of the thill coupling, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a thill support of the spring D, formed integral with the bottom plate of the thill coupling and the pin E, secured to the thill, substantially as and for the purpose hereinbefore set forth.

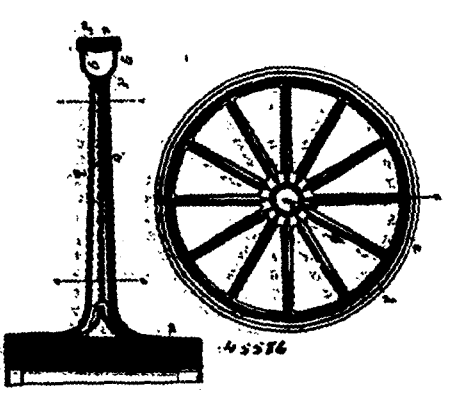
No. 45,585. Wagon Jack. (*Chèvre de carrosserie.*)



Sam S. Joy, New Market, New Hampshire, U. S. A., 19th March, 1894; 6 years.

Claim.—1st. The combination, with the standard, step-piece, operating lever, connecting bar, and the link and lever of suitable metallic bushing L, substantially for the purpose set forth. 2nd. The combination, with a step-piece having a series of notches or steps, of a metallic facing for said steps formed in two parts, one portion extending over all but the lower step, and having at its lower end a narrow horizontal flange, and the other comprising a collar or band extending around said step-piece and provided with a cap for the said lower step resting upon the said horizontal flange of the other portion of the step-facing.

No. 45,586. Metal Wheel. (*Roue métallique.*)



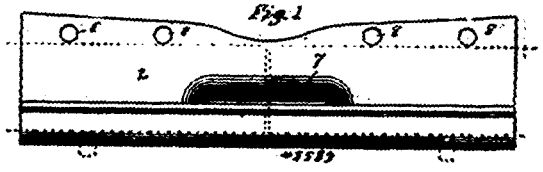
Joseph W. Bettendorf, Springfield, Ohio, U.S.A., 19th March, 1894; 6 years.

Claim.—1st. The improved method of making metallic wheels, consisting in providing two metallic blanks, forming the same at the centre with an annular flange, removing portions of the blank to leave radial strips, and a surrounding rim, grooving said strips and rim, placing the blanks face to face, and securing the same together. 2nd. The improved method of making wheels, which consists in providing two sheet metal circular blanks, forming the same at the centre with an annular flange, cutting away portions of the blank to leave radial strips and a surrounding rim, dishing the strips and bending the rim outward, applying the same face to

face, securing them together along the edges and finally applying the tire. 3rd. The improved wheel consisting of two metallic members or sections cut out to form integral hub, spokes and felloes, in skeleton form, said skeleton sections placed together, face to face and united continuously along their meeting edges. 4th. A metallic wheel comprising two complementary sections cut out and stamped or bent to form integral hub, spokes and felloe, placed together face to face and united along their meeting edges. 5th. The improved wheel, consisting of two metallic members each provided with the central annular flange, radial grooved spokes and a grooved felloe, and secured together along the edges of the same. 6th. In a metallic wheel, the combination with the felloe provided with inwardly projecting flanges and the transverse corrugations therein, of the grooved tire seated upon said flanges. 7th. In a metallic wheel, the combination with the two metallic members, each provided with radial grooved strips and the surrounding outwardly bent rim secured together along the edges of the strips, and between the same at the hub and felloe of the tire.

No. 45,587. Rail Joint. (*Joint de rail.*)

Fig. 1



Edward P. Caldwell, and C. Wright Davison, both of Minneapolis, Minnesota, U.S.A., 20th March, 1894; 6 years.

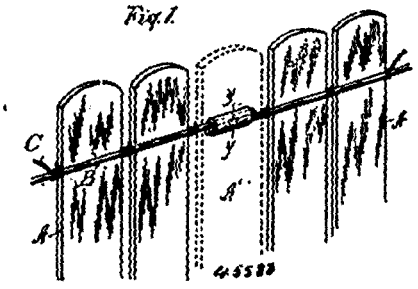
Claim.—1st. As a new article of manufacture, a rail-joint comprising a rail or tie-plate provided with an integral angle-iron, and having a central depressed portion pocket-like in form and forming a strong truss, substantially as described. 2nd. As a new article of manufacture, a rail-joint, comprising a rail or tie-plate having an integral angle-iron, and the centre of the plate being depressed to form a depending truss and a pocket for a filling, the joint being composed of wrought metal, substantially as described. 3rd. As a new article of manufacture, a rail-joint composed of wrought metal and comprising a rail or tie-plate, an angle-iron integral therewith, and an integral hollow depending truss formed centrally in the bottom of said plate, the edge of the plate being drawn in at the middle, and the walls of the truss being of the same thickness throughout, substantially as described. 4th. The combination, in a rail-plate provided with an integral iron and having a depending truss formed by a depressed central portion of the plate, and an elastic cushion arranged within the pocket of the truss, substantially as described. 5th. The combination, in a rail-joint, of a plate whereon the rail is adapted to rest, and provided with an integral angle-iron, said plate having a central depressed portion forming a hollow uncut truss, a cushion filling provided in the hollow or pocket in the truss, a fish-plate, and short bolts passing through the same and through the vertical part of said integral angle-iron, substantially as described. 6th. As a new article of manufacture, a rail or base-plate, having an integral hollow depending truss formed centrally in said plate, the edge of the plate being drawn in at the middle, and the walls of the truss being of the same thickness throughout, substantially as described. 7th. As a new article of manufacture, a rail-joint comprising a rail or tie-plate, having a central depressed portion, pocket-like in form and forming a strong truss, substantially as described. 8th. As a new article of manufacture, a rail-joint comprising a rail or tie-plate, having a central depressed portion, pocket-like in form and forming a strong truss, and means in connection with said plate for holding the flanges of the rails, substantially as described. 9th. As a new article of manufacture, a rail-joint comprising a rail or tie-plate, with a central depressed portion, pocket-like in form and forming a strong truss, and a cushion provided in said pocket, substantially as described. 10th. As a new article of manufacture, a rail-joint, comprising a rail or tie-plate, with a central depressed portion, pocket-like in form and forming a strong truss, the edge of the plate being drawn in to maintain an even thickness of metal throughout, substantially as described. 11th. As a new article of manufacture, a rail-joint comprising a rail or tie-plate, provided with an integral angle-iron and having a central depressed truss portion, substantially as described.

No. 45,588. Slatted Fabric. (*Clôture en bois et fil de fer.*)

John C. French and Walter C. Pratt, both of Lansing, Michigan, U.S.A., 20th March, 1894; 6 years.

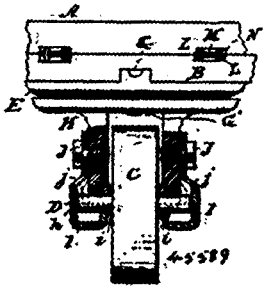
Claim.—1st. The combination in a slatted fabric of tie wires provided with projecting ends, having notches adapted to register to form a round opening, a metallic sleeve adapted to receive the overlapping end of the tie wires, and a locking pin or rivet adapted to be secured transversely in a hole through the sleeve to lock the tie wires, substantially as described. 2nd. As a new article of manufacture, a package formed of slatted fabric and having tie wires provided with overlapping ends, a metal sleeve in which said ends engage, notches formed in the overlapping ends of the tie wires, and a rivet passing through the hole in the sleeve and through the notches in the tie wires, and a slat secured to the tie wire by said

Fig. 1



rivets, substantially as described. 3rd. The combination of a tie wire or wires having ends provided with registering notches, a sleeve adapted to receive the ends of the tie wire and having a rivet hole adapted to register with the notches in the tie wires, and a locking pin or rivet, all substantially as described.

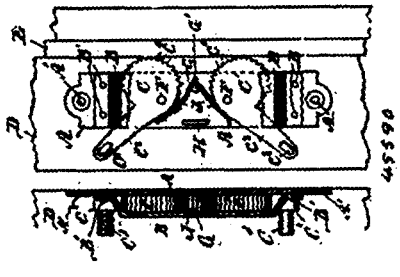
No. 45,589. Truck. (*Camion.*)



George F. Armstrong and Meylert M. Armstrong, both of Philadelphia, Pennsylvania, U.S.A., 20th March, 1894; 6 years.

Claim.—1st. The truck-wheel frame having the depending arms formed with re-inforced or widened bearings for the axle of the truck-wheel. 2nd. The upper plate of the caster frame having the annular bearing surface on its lower face, and the rotary plate which carries the caster-wheel turning on the annular bearing face of the upper plate, either or both of the bearing faces of said plates being chilled. 3rd. The caster consisting of the plate E having the annular depressed portion E^1, with openings *f*, the lower plate F, stud G^1, and caster-wheel carried by the plate F. 4th. The truck-wheel frame having the depending arms formed with bearings, the truck-wheel having its axle working on the bearings of the depending arms, and the lubricating cups I forming the lower bearings for the axle and secured to the depending arms. 5th. The tongue or handle fastening piece, substantially as described. 6th. The combined truck-wheel and axle in which the wheel is chilled upon the axle, substantially as described.

No. 45,590. Sash Fastener. (*Arrête-croisée.*)

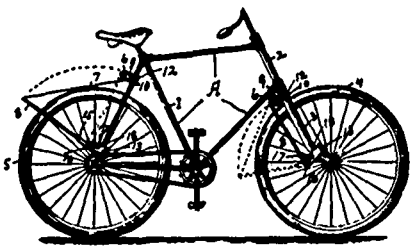


William L. Eveland and Alonzo Herrick, both of Port Stanley, Ontario, Canada, 20th March, 1894; 6 years.

Claim.—The combination of the base plate A, and covering plate B, cams C, C^1, eccentrically pivoted between said plates, said cams having an arm C^2, provided with a thumb and finger piece C^3 and a serrated circumferential edge C^4, said arms and edges projecting from opposite edges of said plates, an expanding spring J, intervening said cams and a stop H, limiting the retraction of the cams, as set forth.

No. 45,591. Mud Guard for Vehicles.

(*Garde-crotte pour roues de voitures.*)

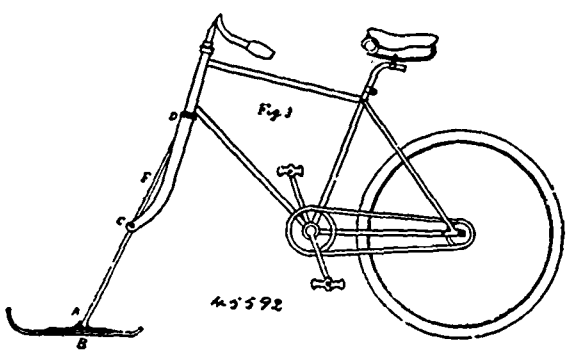


45591

James W. Shone, George W. McTaggart and Charles F. Wilkin, all of Rochester, New York, U.S.A., 20th March, 1894; 6 years.

Claim.—1st. The combination, with a bicycle or similar vehicle A, of an extensible mud-guard strip 7, a swinging arm or frame 8, connected with the strip 7, and pivoted to a part of the vehicle, and means for automatically locking and holding said swinging arm or frame, substantially as and for the purpose set forth. 2nd. The combination, with a bicycle or similar vehicle A, of a roller 6, a flexible mud-guard strip 7, adapted to roll on and unroll from the roller, and a swinging arm or frame 8, connected with the strip 7, and pivoted to a part of the vehicle, substantially as and for the purpose described. 3rd. The combination, with a bicycle or similar vehicle A, of a roller 6, a flexible mud-guard strip 7, adapted to roll and unroll from the roller, a swinging arm or frame 8, connected with the strip 7, and pivoted to a part of the vehicle, a ratchet 16 on said arm or frame, and a pawl 17 for engaging the ratchet, substantially as and for the purpose specified. 4th. The combination, with a bicycle or similar vehicle A, of a clamp 10, carrying a roller 6, a clamp 13 carrying a pawl 17, a swinging arm or frame pivoted to a part of the vehicle, and a flexible mud-guard strip connected at one end with said roller, and at the other end with said arm or frame, substantially as and for the purpose set forth.

No. 45,592. Bicycle. (*Bicycle.*)



J. R. Sederquest and George J. Clark, both of Saint Stephen, New Brunswick, Canada, 20th March, 1894; 6 years.

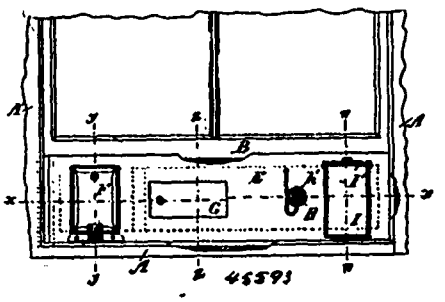
Claim.—Rod D, hinge A, and runner or skate B, in combination for the purposes hereinbefore set forth.

No. 45,593. Window Ventilator.

(*Ventilateur pour croisées.*)

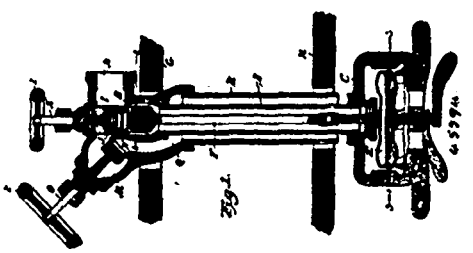
David N. Cook and Henry W. Cook, both of Salem, Massachusetts, U.S.A., 20th March, 1894; 6 years.

Claim.—1st. A window ventilator, consisting of the rectangular frame C, covered at its outside with wire gauze or netting D, and at its inside provided with a plate E, having an air inlet valve, and a nozzle H, provided with a stopper *h*, and a tube H^1, adapted to connect with the nozzle for conducting air to different portions of an apartment, substantially as described. 2nd. A window ventilator, consisting of a rectangular frame covered at its outside with wire gauze or netting, and at its inside with a plate having a series of opening *f*, *g*, *h*, *i*, for the admission of air end said openings being respectively controlled by a hinged winged gate F, slide G, nozzle and plug H, h^1, and box I with slide I^1, substantially as set forth. 3rd. A window ventilator, consisting of a rectangular frame covered at its outside with gauze or netting, and at its inside with a plate having openings *f* and *g* for the admission of air, and said openings being respectively controlled by a hinged side-winged gate F, and a slide G, substantially as set forth. 4th. A window ventilator, consisting of a rectangular frame covered at its outside with gauze or netting, and at its inside with a plate having openings *g* and *i* for



the admission of air, and said openings being respectively controlled by a slide G, and upwardly mouthed casing I, provided with valve or slide I^1, substantially as set forth.

No. 45,594. Steam-Trap. (*Purge de vapeur.*)



Egbart Habberton Gold, Chicago, Illinois, and Edward E. Gold, New York, State of New York, both in the U.S.A., 20th March, 1894; 6 years.

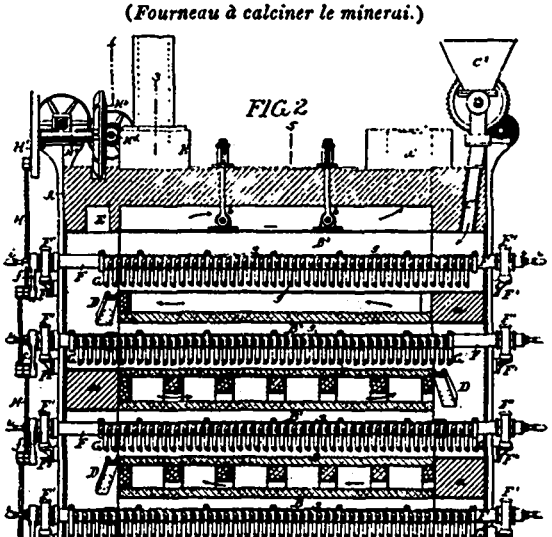
Claim.—1st. The combination, in a steam-trap, for heating apparatus of an automatically operated valve located within the the space to be heated, an expansion device situated outside the space to be heated, and a rod connecting said expansion device with the valve, substantially as described. 2nd. The combination, in a steam-trap for heating apparatus of an automatically operated valve located within the space to be heated, an expansion device situated wholly outside the space to be heated, and connections between said valve and expansion device, substantially as described. 3rd. The combination in a steam-trap, of a valve body containing two valve seats, a hand-operated valve fitted to one seat, an automatically operated valve fitted to the other seat, and an expansion device contained in a chamber at which the discharge from said hand operated valve is directed, substantially as described. 4th. The combination in a steam-trap for heating apparatus of a valve body adapted to be attached to the heating pipes and containing a valve opening, to which is fitted a valve, a discharge tube connected to said valve body and adapted to extend from within the space to be heated to the outside air, a casing attached to the outer end of said tube; an expansion device contained in the chamber within said casing; but wholly without the space to be heated and connections between said expansion device and said valve, substantially as described. 5th. The combination in a steam-trap for heating apparatus of a valve body adapted to be attached to the heating pipes and containing a pair of valve openings to which respectively are fitted an automatic and a hand operated valve, a discharge tube connected to said valve body and adapted to extend from within the space to be heated to the outside air, a casing attached to the outer end of said tube, an expansion device contained in the said casing but wholly without the space to be heated, and a rod connecting said expansion device with the automatic valve, substantially as described. 6th. In a steam-trap the combination of an automatically operated valve located within the space to be heated, an expansion device situated outside the space to be heated, and connections between said valve and expansion device, of a hand-operated valve for closing the port normally controlled by said automatic valve, substantially as described. 7th. In a steam-trap the combination with an automatically operated valve located within the space to be heated, an expansion device situated outside the space to be heated and connections between said valve and expansion device of a hand-operated valve for closing the port normally controlled by said automatic valve, and a second hand-operated valve controlling a by-pass around the automatic valve, substantially as described. 8th. In a steam-trap, the combination with a valve casing having a perforated diaphragm provided with valve seats on opposite sides thereof, and a hand-operated valve seating upon one side of said diaphragm, of an automatically operated valve seating on the oppo-

site side of said diaphragm and located within the space to be heated, an expansion device located outside of the space to be heated, and a connection between said valve and expansion device, substantially as described. 9th. In a steam-trap, the combination with a valve casing having a perforated diaphragm provided with valve seats on opposite sides thereof, a discharge tube connected to said casing and adapted to extend from within the space to be heated to the outside air, and a casing attached to the outer end of said tube wholly without the space to be heated, of a hand-operated valve adapted to seat upon one side of said diaphragm, an automatically operated valve seating on the opposite side of said diaphragm and within the space to be heated, an expansion device located in the casing outside of the space to be heated, and a rod connecting said expansion device with the automatically operated valve, substantially as described. 10th. In a steam trap, the combination with an automatically operated valve, an expansion device, a connection between said valve and extension device, a passage connecting the chamber of the automatic valve with the chamber of the expansion device, of a hand-operated valve controlling a passage surrounding the main valve chamber and the connecting passage between said chamber and the expansion device chamber and opening to the outer air, substantially as described. 11th. In a steam-trap, the combination with an automatically operated valve, an expansion device, a connection between said valve and expansion device, a passage connecting the chamber of the automatic valve with the chamber of the expansion device, of a hand operated valve controlling a passage surrounding the main valve chamber and the connecting passage between said chamber and the expansion device chamber, and terminating with an open end above said casing, substantially as described. 12th. In a steam-trap, the combination with a valve casing containing separate valve seats, an automatically operated valve fitted to one of said seats, and an expansion device contained in a chamber communicating with said valve orifice, of a hand-operated valve fitted to the other seat and controlling a passage surrounding the automatic valve chamber, and the passage connecting said chamber with the chamber containing the expansion device, substantially as described. 13th. In a steam-trap, the combination with an automatically operated valve located within the space to be heated, an expansion device located outside the space to be heated in a chamber communicating with the automatic valve chamber, and a connection between said valve and expansion device, of a hand-operated valve adapted to close the port normally controlled by the automatic valve, and a second hand-operated valve controlling a passage opening to the air and surrounding the automatic valve chamber and the passage connecting said chamber with the expansion device chamber, substantially as described.

No. 45,595. Ore Roasting Furnace.

(*Fourneau à calciner le minerai.*)

FIG. 2



Arthur Kitson, Philadelphia, Pennsylvania, U.S.A., and Alexander Keith, Toronto, Ontario, Canada, assignees of Thomas Walker and John F. Carter, both of Philadelphia, Pennsylvania, U.S.A., 20th March, 1894; 6 years.

Claim.—1st. In an ore roasting furnace, the combination of a series of retorts mounted one above another, fume passages forming communication between the several retorts and inclined planes in these passages extending from one retort to a retort below so that the ore as it passes from one retort to another will pass down the inclined plane without dusting, the fumes passing through the retorts in the opposite direction, substantially as described. 2nd. The combination in an ore roasting furnace, of a series of retorts mounted one above another, agitating mechanism in each retort, and means for feeding the ore through the retorts, passages forming communications between the retorts, inclined planes in said passages upon which the ore is carried from one retort to the other, and a flue or flues communicating with the upper retorts by which the fumes are carried through the retorts to the outlet, the ore being directed clear of the fumes as it passes from one retort to the other, substantially as described. 3rd. The combination in an ore roasting furnace, of the body portion, a series of retorts mounted therein, the front and rear walls of said body portion having fume passages communicating with the retorts, inclined planes in said passages for the delivery of ore from one retort to another, shafts in each retort, agitating blades mounted on said shafts, with mechanism for vibrating the same, substantially as described. 4th. The combination in an ore roasting furnace, of the body portion, a series of retorts, the front and rear walls of the body portion having passages therein for the escape of fumes from one retort to another and to the outlet, with inclined planes extending from the lower surface of one retort to and through the side walls of the said passages and to the retort below, whereby the ore is carried from one retort to another without dusting and without coming in direct contact with the fumes, substantially as described. 5th. The combination in an ore roasting furnace, of a series of retorts, a hollow shaft in each retort, blades on said shafts, mechanism for operating the shafts, with a main water pipe and coupling pipe for each hollow shaft communicating with the said main water pipe, said coupling being looped sufficiently to allow for the vibrating movement of the shafts, substantially as described. 6th. The combination in an ore roasting furnace, of the combustion chamber, a series of retorts mounted therein, mechanism for traversing the ore through the said retorts, a hot-air pipe in the combustion chamber connected at one end to the lower retort, a valve w, at the inlet end of said pipe, and a valve w^1, at the opposite end to cut off the hot air supply to the retorts, and to admit cold air, substantially as described. 7th. The combination in an ore roasting furnace of the retorts, a shaft in each retort, mechanism for vibrating said shafts, with two sets of blades carried by said shaft, each blade being V-shaped in cross section, whereby as the shaft is vibrated the material is not only gently moved laterally but also longitudinally in one direction, substantially as described. 8th. The combination in an ore roasting furnace, of the series of retorts, one mounted above another, said retorts being closed at each end to the atmosphere, vertical passages arranged alternately at each end of the furnace and communicating with the several retorts, so that the fumes will pass through one retort, then up and through another and so on to the outlet, with inclined planes in said passages, feeding mechanism in each retort for the ore under treatment, so that the ore may pass through the retorts in a direction opposite to that of the fumes, and pass from one retort to the other without dusting, substantially as described. 9th. The combination in an ore roasting furnace, of the series of retorts, combustion chamber, within which the retorts are mounted, shafts in each retort, blades for said shafts, said shafts being hollow and connected to a stand pipe, whereby each shaft receives an independent supply of water, and valve for each pipe, substantially as described. 10th. The combination in an ore roasting furnace, of the body portion forming a combination chamber, a fire-pot at the base of the furnace, a series of retorts mounted one above the other in said combustion chamber, the lower retorts being made of fire clay, and the upper retort or retorts being made of cast-iron, substantially as described. 11th. The combination in an ore roasting furnace, of two or more retorts, one receiving material from another, in its passage through the furnace, agitating and feeding mechanism in each retort, fume passages, with a passage forming a communication between the two retorts, inclined planes in said passage whereby the material is carried from one retort to the other without dusting, substantially as described. 12th. The combination in a furnace of the hollow shaft, a retort, a water supply pipe, a goose-neck coupling attached to the said hollow shaft and extending away from the water supply pipe, with a coupling hose secured to said water supply pipe and to the goose-neck back of the centre line of the hollow shaft, substantially as described. 13th. The combination in an ore roasting furnace, of the retorts arranged one above another, with a skew block s, s, key block s^1, forming an arch S, and having curved upper surfaces to receive the retort or retorts, substantially as specified.

No. 45,596. Water Heater. (*Réchauffeur d'eau.*)

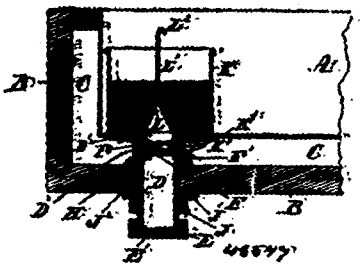
William Morrison, Toronto, Ontario, Canada, 21st March, 1894; 6 years.

Claim.—1st. In a water heater or cooler, two plates enclosing a water space, in combination with a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive portions of the heating or cooling surface, substantially as and for the purpose specified. 2nd. In a water heater, two plates enclosing a water space and formed into a cylinder, in combination with a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive

portions of the heating surface, and an inlet and outlet for the water, substantially as and for the purpose specified. 3rd. In a

water heater, two cylinders enclosing a water space between them, in combination with a spirally arranged feather or partition dividing the water space so that a channel is formed to convey the water over successive portions of the heating surface, and an inlet and outlet for the water, substantially as and for the purpose specified. 4th. In a water heater, the combination of two plates enclosing a water space, a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive portions of the heating surface, a coil of tubing connected at one end to the said water space, and a suitable inlet and outlet respectively to the said coil and water space, substantially as and for the purpose specified. 5th. In a water heater, the combination of two plates enclosing a water space, a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive portions of the heating surface, a coil of flattened tubing connected at one end to the said water space, and an inlet and outlet, substantially as and for the purpose specified. 6th. In a water heater, the combination of two plates enclosing a water space and formed into a cylinder, a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive portions of the heating surface, a coil of flattened tubing connected at one end to the said water space, and an inlet and outlet for the water, substantially as and for the purpose specified. 7th. In a water heater, a coil of tubing through which the water passes, the said tubing being flattened in cross-section, substantially as and for the purpose specified. 8th. In a water heater, the combination of two plates enclosing a water space and formed into a cylinder, a feather or partition arranged to divide the water space so that a channel is formed to convey the water over successive portions of the heating surface, a coil of flattened tubing connected at one end to the said water space, suitable inlet and outlet pipes connected respectively to the said coil and water space, and a burner adapted to use liquid or gaseous hydro-carbon fuel, substantially as and for the purpose specified.

No. 45,597. Cheese Vat. (*Cuve à fromage.*)

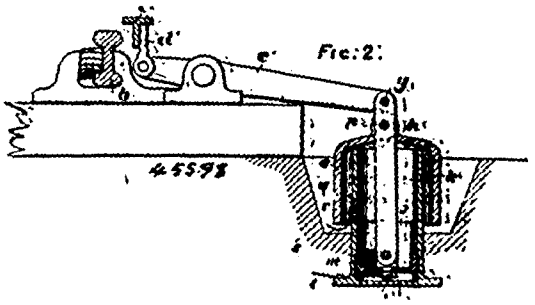


John Warren, Sterling, Ontario, Canada, 21st March, 1894; 6 years.

Claim.—1st. The combination, with the milk tank A, and jacket B, of the discharge and connecting pipe D, having an outwardly turned flange D^1, and collar D^2, said flange provided with notches D^4, and said collar having a circumferential groove D^3 internally, and a strainer K, having a projecting ring K^1 at the bottom, provided with lugs K^3, fitting through said notches into said groove, as set forth for the purpose described. 2nd. The combination, with the milk tank A, and jacket B, of the discharge pipe D, having a flange D^1, and collar D^2, and a washer or packing H; said flange, collar and packing filling the space between said tank and jacket, and reenforcing the outlet, substantially as set forth. 3rd. The combination, with the tank A, and jacket B, of the pipe connection D, having a flange D^1, and collar D^2, and a packing H, filling the space between said tank and jacket, a nut J, provided with a packing or washer J^1, screwing on said pipe against the underside of said jacket, and a screw cap E fitting the end of said pipe when exposed, as set forth. 4th. The combination of the strainer K, having a ring K^1 surrounding the outlet, said ring having lugs K^3, and the milk tank having a discharge outlet or pipe D, having a notched flange D^1, and collar D^2, provided with an internal circumferential groove D^3 to receive said lugs, to hold the strainer firmly attached and close to the bottom of said tank, as set forth. 5th. The combination of the strainer K, having a projecting ring K^1 at the bottom, a plug L fitting into said ring, said plug having a rod L^1, provided with a hook L^2 at the end, as set forth. 6th. The pipe D, having a plug F at the entrance, and provided with a bail F^3, in a recess F^2, and a screw cap E at the outlet or discharge end, as set forth.

No. 45,598. Railway Signalling.

(*Signal de chemin de fer.*)

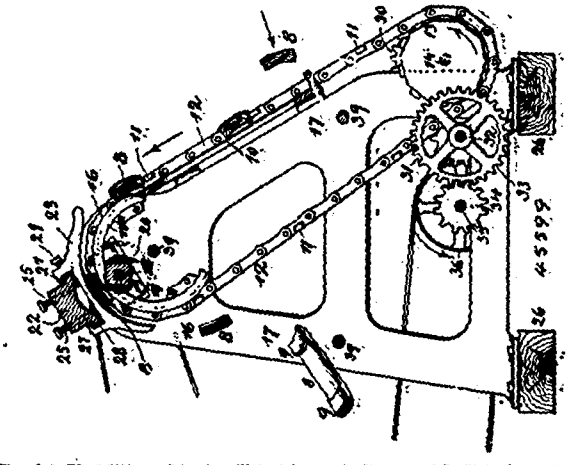


John George Dixon, Birkby, County of York, England, 21st March, 1894; 6 years.

Claim.—1st. In a railway signalling making or breaking electrical contact by the movement of a piston in an air cylinder, the said piston being operated by a lever connected to a treadle fixed parallel to the rail, and the treadle in its turn being depressed by the first wheel of a passing vehicle or engine, all substantially as described and illustrated and for the purposes specified. 2nd. The combination of the treadle, transverse lever, piston air cylinder, and a making electrical contact, the whole operating that the first wheel of a passing engine depresses the treadle, and electrical contact is instantaneously made, substantially as described for the purposes set forth. 3rd. The combination of a treadle, transverse lever, piston, air cylinder, and a breaking electrical contact, the whole operating that the first wheel of a passing engine depresses the said treadle and electrical contact is instantaneously broken, substantially as described for the purposes set forth. 4th. In railway signalling, the use of a piston and air cylinder for making and breaking electrical contact, substantially in the manner described and for the purposes specified. 5th. In railway signalling, a treadle for making or breaking electrical contact which upon being depressed by the first wheel of a passing engine or vehicle does not rise to contact with the other passing wheels or return to its normal position until a predetermined interval of time has elapsed, substantially as described and illustrated and for the purposes set forth. 6th. The apparatus described and illustrated with reference to figures 5 and 6 of the drawings annexed for the purposes specified.

No. 45,599. Machine for Finishing Twisted Staves.

(*Machine pour finir et dresser les douelles.*)

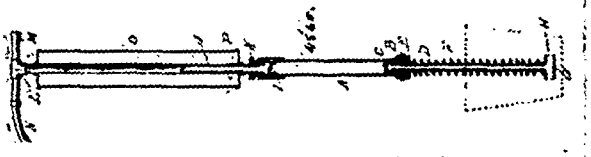


Daniel F. Miller, H. G. Trimble and George V. Frazier, all of Somerset, Kentucky, U.S.A., 21st March, 1894; 6 years.

Claim.—1st. In a machine for finishing twisted staves, the combination of two inclined endless feed chains parallel with each other, lateral projections 11 on them, which elevate the staves and support them between the chains, means to actuate these latter, a feed table, curved guides 15 around which the chains draw the staves, the ends of which rest on these guides, a rotary cutter-head below the guides and means to hold the staves to the guides 15, while passing within reach of the cutter-head. 2nd. In a machine for finishing twisted staves, the combination of two inclined endless feed chains parallel

with each other, means to actuate them, a feed table between them on which the staves are deposited, curved guides 15 with flanges 16 over which the ends of the staves pass, lateral projections 11 on these chains on which between these latter the staves are carried from the feed-table to and around flanges 16 on which the ends of the stave rest, curbs 23, which hold the ends of the staves to these flanges, and a rotary cutter-head below them. 3rd. In a machine for finishing twisted staves, the combination of two endless feed chains parallel with each other, means to actuate them, a feed-table between them on which the staves are deposited, guides 15, with flanges 16 over which the ends of the staves pass, projections 11 on these chains which carry the staves from the feed table to and around flanges 16, curbs 23 which hold the ends of the staves to these flanges, a rotary cutter-head below them, an additional curb between the others to hold the middle portion of the staves down to within reach of the knives of the cutter-head, and a beam 22 on which these curbs are supported.

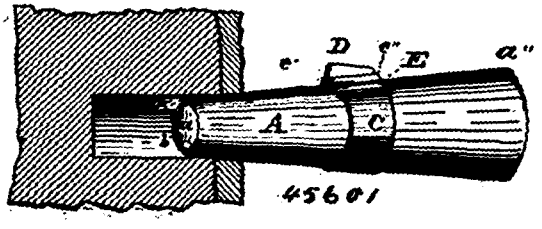
No. 45,600. Pump. (*Pompe.*)



John Clark, Pontiac, Michigan, U.S.A., 21st March, 1894; 6 years.

Claim.—1st. In a pump, the combination with a cylinder, of a tubular piston rod working in the cylinder and projecting below the same, a spring sleeved on the outside of the rod and outside of the cylinder, a valved piston mounted directly on the upper end of the rod within the cylinder, a tubular discharge extension connected directly to the upper end of the cylinder, a hollow handle on the extension and a discharge pipe leading from the handle, substantially as described. 2nd. In a pump, the combination with a cylinder, of a tubular piston rod working in the cylinder and projecting below the same, a spring sleeved on the rod outside the cylinder, a projection on the rod with which the spring engages, a valved piston head fixed on the upper end of the rod and a discharge extension rigid and forming a direct continuation of the cylinder, substantially as described. 3rd. In a pump, the combination with a cylinder, of a tubular piston rod working therein, having a lateral projection on its lower end, a valved piston fixed on the upper end of the rod, a spring sleeved on the rod outside the cylinder, its ends abutting against the lower end of the cylinder and extension on the piston, a discharge extension rigidly united directly on the cylinder and an air drum surrounding the extension and secured at the top and bottom thereto, substantially as described. 4th. In a pump, the combination with a cylinder having an air chamber, discharge and handle thereon, of a tubular piston rod of smaller diameter than the cylinder and working therein, a valved piston on the upper end of the rod, a lateral projection on the lower end of the rod, a collar E on the lower end of the cylinder, and a spiral spring surrounding the outside of the rod having its upper end abutting against the collar and its lower end against the projection, substantially as described.

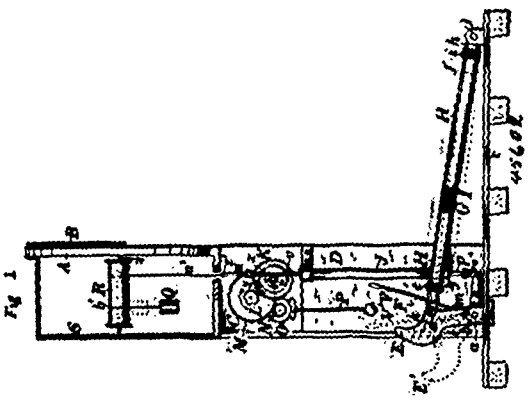
No. 45,601. Sap Spout. (*Siphon pour la sève.*)



George John Record, Conneaut, Ohio, U.S.A. 21st March, 1894; 6 years.

Claim.—1st. In a sap spout, the combination, with the combined band and stay, of a shield having longitudinally a slit and adjacent lips embracing the stay and having its ends tucked under the band to retain it in position, as and for the object stated. 2nd. An improved sap spout, consisting of the outer taper tube A, inner tube A^1 having the circular bottom a formed thereon, and a combined band and stay around the outer tube and held together by a shield having the re-enforcing lips, and its ends tucked under the band, as and for the use and purpose indicated. 3rd. A sap spout, consisting of two taper tubes placed one into the other, one of said tubes being provided with a circular projection forming the bottom of the spout, and provided with a notch serving as an escape-opening, said inner tube being held in position by the inwardly-turned ends of the outer tube, as specified.

No. 45,602. Railway Time Signal.
(*Signal horaire pour chemins de fer.*)



Angus Cameron Gordon, Rochester, New York, U.S.A., 21st March, 1894; 6 years.

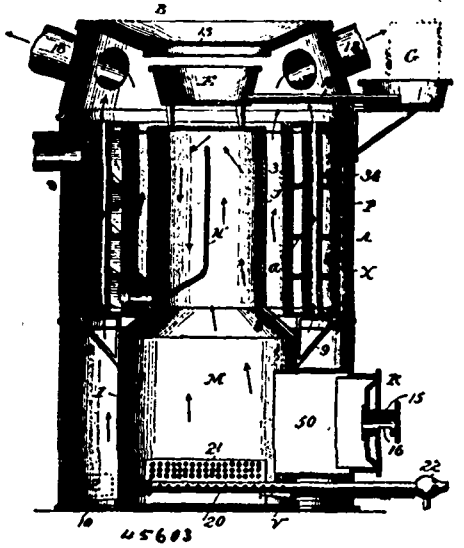
Claim.—1st. In a railway-signal, a clock movement, a spring to operate it, a spring adapted to be compressed by a passing train and an intermediate spring stronger than the first named and adapted to act against it and to act with that compressed by the train whereby said intermediate spring co-operates with the train and compresses the clock spring, substantially as set forth. 2nd. In a railway-signal, a movable device such as lever E in the path of the train and a spring such as s normally acting to aid the train in moving said device, substantially as set forth. 3rd. In a railway-signal, a clock having a motor to run it a definite period, a clock starting device independent of the clock adapted to be operated by the passing of a train at any moment between the beginning and end of said period, consisting of a rock-shaft having an arm V and an arm E the latter being arranged in the path of a moving train, substantially as set forth. 4th. The combination, in a railway-signal, of the movable pointer B, the clock-movement C, arranged to regulate the pointer and actuated by a spring, a second stronger as a spring acting in opposition to the first, and mechanism operated by a passing train whereby the second spring is released to compress the first to actuate the clock movement during its expansion, said second spring normally co-operating with the train to diminish the shock of its impact, substantially as described. 5th. The combination, in a railway-signal, of the movable pointer B, the clock-movement C arranged to move the pointer and operated by the spring r, the stronger spring s, acting in opposition to the spring r, and a movable arm E arranged to be moved by a projection on a passing train, and provided with a spring G acting in opposition to the spring s, substantially as described. 6th. The combination, in a railway-signal, of the movable pointer B, the clock-movement C, the spring r for actuating the clock-movement, rack v, pinion w, and ratchet x, y, and mechanism arranged to be operated by a passing train and adapted to compress the spring, said spring being connected and adapted to actuate the clock-movement, substantially as set forth. 7th. The combination, in a railway-signal, of a movable pointer regulated by a spring actuated clock-movement, the arm E, arranged to be moved by a projection on a passing train and provided with spring G, the rock-shaft a, having arms l and n, and the spring s, arranged to act in opposition to the spring which actuates the clock-movements, substantially as described. 8th. The combination, with a movable railway-signal, of the pivoted lever E, having inclined surface k, and the spring G, substantially as described. 9th. The combination, with a movable railway-signal, of the pivoted lever E, having inclined surface k, the spring G and tube H, substantially as described. 10th. The combination, with a movable railway-signal, of the pivoted lever E, having inclined surface k, the spring G, tube H, rod I having follower f, and air valve i, substantially as described. 11th. The combination, in a railway-signal, of a movable pointer, a clock-movement operated by a spring arranged to be compressed by a passing train, the lever E, spring G, rock-shaft a, and arm V, arranged to start the clock-movement, substantially as described.

No. 45,603. Heater. (*Appareil de chauffage.*)

Christian Schellhammer, Warren, Pennsylvania, U.S.A., 21st March, 1894; 6 years.

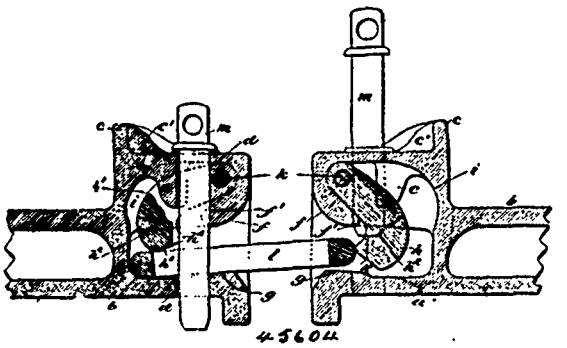
Claim.—1st. The combination in a heater of the outer casing A, the inner casing I, i, reduced in diameter at the upper end, a partition N, arranged to form a dividing flue leading to an outlet S, near the bottom of the casing i, and a radiator arranged within the casing A, and communicating at the lower portion with the outlet S, and the upper portion with a pipe 35, substantially as set forth. 2nd. The combination with the casings of a heater, of an annular radiator, having a spiral flue v, and vertical air pipes O, extending from the bottom to the top of the radiator, and through said flue, substantially as set forth. 3rd. The combination with the casings, of a heater of a radiator, having an inner casing 33, and

outer casing 34, and a partition *a*, arranged to form a spiral flue *r*, and vertical air pipes O, extending through the bottom and top of



the radiator and through said partition, substantially as set forth. 4th. The combination with the casings of a heater, of a radiator having an outer wall 34, inner wall 33, and a spiral partition *a*, arranged to form a spiral flue *r*, increasing gradually in height from the lower to the upper end, substantially as and for the purpose set forth. 5th. The combination of the radiator, having the spiral flue increasing gradually in height from the lower to the upper end, and vertical air pipes O, extending through said flue, substantially as described. 6th. The combination with a heater, of a burner and air inlet ports arranged to admit air to the side and top of said burner, substantially as set forth. 7th. The combination of the burner 20, the perforated walls 21, 21, and air chambers supplied with air outside of said walls, substantially as set forth. 8th. The combination of the burner 20, and side chambers *y*, *y*, having perforated walls 21, admitting air to said chambers, substantially as described.

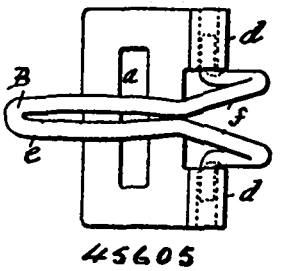
No. 45,604. Car Coupler. (*Attelage de chars.*)



David William Brunton, Aspen, Colorado, U.S.A., 21st March, 1894; 6 years.

Claim.—1st. A car coupler of the pin and link variety, comprising a draw-head provided with an internal curvilinear cavity and having its mouth provided with an introverted upper lip, a lower lip elevated above its floor and bottom, vertical pin-holes, and a depending-lug in the rear of the upper pin-hole, combined with a gravity-block constructed to conform to the curvature of the cavity of the draw-head, and suspended in said cavity and provided with a pin-supporting seat, substantially as described. 2nd. A car coupler of the pin and link variety, comprising a draw-head having its mouth provided with an introverted upper lip, and a lower lip elevated above the floor or bottom of the draw-head and a depending-lug in the rear of the upper pin-hole, combined with a gravity-block suspended within the draw-head upon a removable pin passed transversely through both, and having a coupling-pin seat, the said gravity-block coming to rest upon the introverted-lip and supporting the pin in position to be engaged with an incoming link, substantially as described. 3rd. In a car coupler of the pin and link variety, a draw-head having vertical pin-holes, an introverted-lip at the upper portion of its mouth, notched adjacent to the pin-hole and extending on both sides of it, a lug arranged at the rear of the upper pin-hole and a gravity-block suspended in said draw-head, in front of the pin-hole and above the lip, slitted longitudinally in the plane of the pin-hole and provided with a coupling-pin seat, whereby the coupling-pin may be supported in position for coupling and be sustained while so supported against displacement, and its escape from the block insured when the block is moved from beneath it by the entrance of an opposed link, substantially as described. 4th. In a car coupler of the pin and link variety, a draw-head having vertical pin-holes, a mouth provided with an upper introverted-lip, and an internal cavity of substantially the dimensions and shape shown, combined with a curvilinear gravity-block having its pivot arranged forward of the coupling pin-holes and adapted to support the coupling-pin in position to be coupled, and to hold the link in similar position, the gravity-block being adapted to be inserted into the draw-head through its mouth, substantially as described. 5th. In a car coupler of the pin and link variety, the draw-head having a mouth provided with an introverted upper lip, and a curvilinear cavity in the rear thereof, combined with a pin and link-supporting gravity block pivoted within the draw-head and curved on one side to fit to the inner face of the introverted-lip, and to rest thereupon and curved upon its other side to fit to and extend continuously of the curved cavity of the draw-head, substantially as described. 6th. In a car coupler of the pin and link variety, the draw-head having a mouth provided with an introverted upper lip and a curvilinear cavity behind the same, combined with the gravity-block pivoted in said cavity forward of the coupling pin-hole, whereby the forward end of said block is inclosed, slit for the passage of the pin, having a seat to support the pin in position for coupling and having its nose also notched to guide the coupling-pin into the lower pin-hole, whereby the said gravity-block cannot be struck by an advancing link until the end of the link is already beneath the pin in position to receive it, substantially as described. 7th. In a car coupler of the pin and link variety, a draw-head having a substantially level floor or bottom terminating at the mouth in an elevated roll or lip, and also having an introverted upper lip having a curved cavity behind it, combined with a gravity-block of substantially the construction set forth, pivoted within the said cavity in the draw-head in front of the pin-holes, having the bulk of its weight in a plane in the rear of its axis, and adapted to impose its weight upon a link laid in the draw-head upon such roll or lip to hold up the outer end of such link in a position to enter a similar draw-head at a substantially equal elevation, substantially as described.

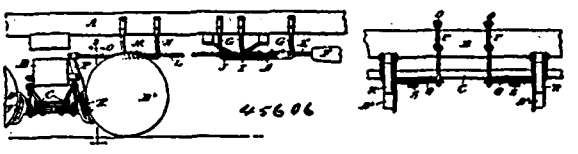
No. 45,605. Buckle. (*Boucle.*)



Albert Daniel Field, Naugatuck, Connecticut, U.S.A., 21st March, 1894; 6 years.

Claim.—1st. In a buckle, the combination with a rigid attaching plate provided with sockets, and one or more cams for co-operating with a tongue, of a tongue having pivot sections and short stiff spring sections *f f*, all arranged to operate, substantially as described. 2nd. A tongue for buckles, the same being formed with the substantially straight rigid portion *e*, the short stiff sections *f*, *f*, and the pivot sections *g*, substantially as described.

No. 45,606. Car Brake. (*Frein de chars.*)



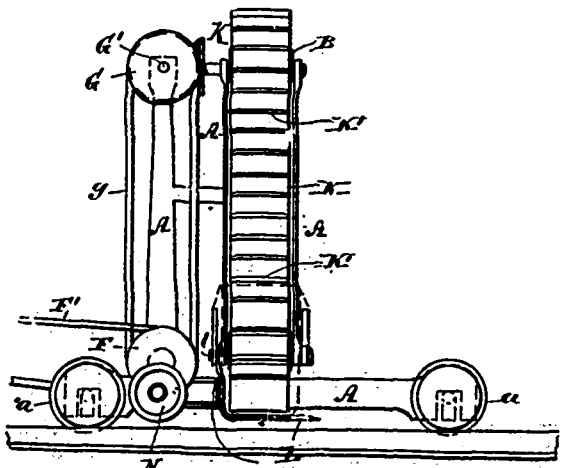
James McGee, Houston, Texas, U.S.A., 21st March, 1894; 6 years

Claim.—1st. A car brake, comprising levers connected together in pairs and carrying the brake shoes, operating levers each pivoted to a fixed support, and each also connected to one of the brake shoe carrying levers, and operating rods connected to said operating levers and serving to apply power to the brake shoes, substantially as set forth. 2nd. A car brake, comprising levers connected together in pairs and carrying the brake shoes, operating levers each universally jointed to one of the brake shoe carrying levers and also pivoted upon a fixed fulcrum support, and operating rods connected to said operating levers and serving to apply power to the brake shoes, substantially as set forth. 3rd A car brake, comprising levers connected together in pairs and carrying the brake shoes, operating levers

each pivoted to a fixed support, and each connected to one of the brake shoe carrying levers, a central floating lever connected with power producing devices, and operating rods connected with the floating lever and also with the operating levers and serving to apply the power of the floating lever to the brake shoes, substantially as set forth. 4th. A car brake comprising levers connected together in pairs and carrying the brake shoes, operating levers each pivoted to a fixed support and each connected to one of the brake shoe carrying levers, a central floating lever connected with power producing devices, a companion lever pivoted to a fixed support and also connected to the floating lever, and operating rods connecting the floating lever with the operating lever of one set of brake shoes, and also connecting the companion lever with the operating lever of the other set of brake shoes, substantially as set forth. 5th. A car brake, comprising levers connected together in pairs and carrying the brake shoes, operating levers each pivoted to a fixed support, and each connected to one of the brake shoe carrying levers, equalizing levers each connected to the operating lever of one set of brake shoes, a central floating lever connected with power producing devices and also to one of the equalizing levers, and a companion lever pivoted to a fixed support and connected to the other equalizing lever and also to said floating lever, substantially as set forth. 6th. In a car brake, the combination with the fixed and floating levers having brake shoes pivotally attached to their outer ends and a rod connecting said levers, of an adjustable pivot for said fixed lever, and operating rods connected with the floating lever for applying power to the brake shoes, substantially as described. 7th. In a car brake, the combination with the fixed and floating levers having brake shoes pivotally attached to their outer ends, and a rod adjustably connecting said levers, of an adjustable pivot for the fixed lever and the operating rod connected with the floating lever for applying power to the brakes, substantially as described. 8th. In a car brake, the combination with the fixed and floating levers having brake shoes pivotally attached to their outer ends, a rod connecting said levers between their ends, and an adjustable pivot for said fixed lever, of an upright lever having a universal joint connection at one end with the floating lever, and an operating rod connected with the opposite end of said lever for applying power to the brake shoes, substantially as described. 9th. In a car brake, the combination with the fixed and floating levers having brake shoes pivotally attached to their outer ends, a rod connecting said levers between their ends and an adjustable pivot for the fixed lever, of an upright lever having a hook and eye connection at one end, with the inner end of the floating lever, and the operating rod connected to the other end of said lever for applying power to the brake shoes, substantially as described. 10th. In a car brake, the combination with the fixed lever having an adjustable attachment to the car frame, and the brake shoe pivoted to said lever and suspended from the car truck, said shoe being applied to the inner surface of one wheel of the truck of a floating lever, a brake shoe pivotally secured to the outer end thereof, and also suspended from the car truck and adapted to bear on the inner surface of the other wheel of the truck, a rod connecting said fixed and floating levers, and an operating rod connected with the inner end of the floating lever, substantially as described.

No. 45,607. Street Clearing Apparatus.

(*Appareil à nettoyer les rues.*)

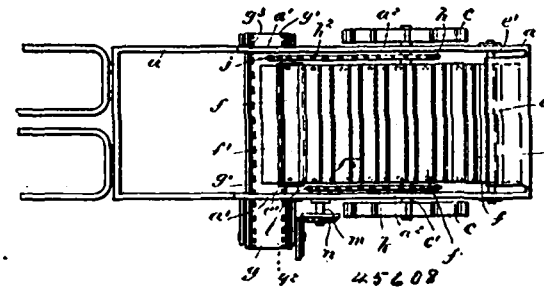


A. E. Trevithick, St. Henri, Quebec, Canada, 22nd March, 1894; 6 years.

Claim.—1st. In a street clearing apparatus, a supporting carriage and a framing projecting on each side of the carriage, one projecting portion being in close proximity to the roadway and the other extending upward, and the whole adapted to be moved along the roadway, a gathering section or scoop located beneath the projecting portion on the lower level, and an endless travelling conveyer moving transversely of the apparatus across such gathering section and in an upward direction, with means for driving such conveyer. 2nd In a street clearing apparatus, a supporting carriage and a framing projecting on each side of the carriage, one projecting portion being in close proximity to the roadway and the other extending upward, and the whole adapted to be moved along the roadway, a gathering section or scoop located beneath the projecting portion on the lower level, and an endless travelling conveyer moving transversely of the apparatus across such gathering section and in an upward direction with means for driving such conveyer and retaining the substance in same when travelling in the upward direction. 3rd. In a street clearing apparatus, a supporting carriage and a framing projecting on each side of the carriage, one projecting portion being in close proximity to the roadway and the other extending upward, and the whole adapted to be moved along the roadway, an adjustable gathering section or scoop located beneath the projecting portion on the lower level, an endless travelling conveyer moving transversely of the apparatus across such gathering section and in an upward direction, an enclosing casing for such conveyer where it travels in said upward direction and means for driving such conveyer.

No. 45,608. Street Clearing Apparatus.

(*Appareil à nettoyer les rues.*)



A. E. Trevithick, St. Henri, Quebec, Canada, 22nd March, 1894; 6 years.

Claim.—1st. In a street clearing apparatus, a supporting carriage or frame adapted to be moved along the roadway, traction wheels mounted on a suitable shaft and supporting such frame near its rear end, a gathering device in close proximity to the roadway, an inclined elevating conveyer the lower end of which is located in working contiguity to the gathering device, a second conveyer moving transversely of the apparatus beneath the upper end of the elevating conveyer and connections between the shaft of said traction wheels, and the conveyers for operating same. 2nd. In a street clearing apparatus, a supporting carriage or frame adapted to be moved along the roadway, traction wheels mounted on a suitable shaft and supporting such frame near its rear end, a gathering device in the form of a scoop or curved plate extending transversely of the apparatus in close proximity to the roadway, an inclined elevating conveyer, the lower end of which enters the space enclosed by the convex face of the gathering device, a second horizontal conveyer moving transversely of the apparatus beneath the upper end of the elevating conveyer, and connections between the shaft of said traction wheels and the conveyers for operating same. 3rd. In a street clearing apparatus, a supporting carriage or frame adapted to be moved along the roadway, traction wheels mounted on a suitable shaft and supporting such frame near its rear end, a gathering device in close proximity to the roadway, an inclined elevating conveyer the lower end of which is located in working contiguity to the gathering device, a second conveyer moving transversely of the apparatus beneath the upper end of the elevating conveyer, an enclosing casing or channel section through which the elevating conveyer may pass, and connections between the shaft of said traction wheel and the conveyers for operating same.

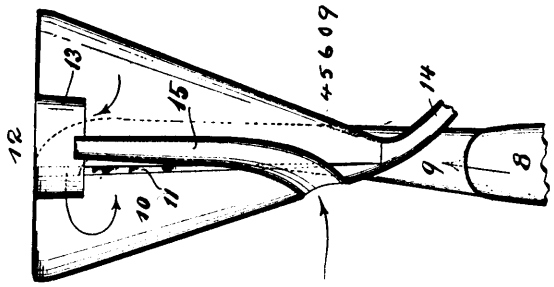
No. 45,609. Spark Arrester and Steam Condenser.

(*Arrête-étincelle et condenseur à vapeur.*)

Thomas Lee, Home City, Ohio, U.S.A., 22nd March, 1894; 6 years.

Claim.—1st. In a spark arrester and steam condenser, the combination of a chamber 10 formed substantially of an inverted hollow cone constructed as shown with offsets 11, an exit-opening in its top and an outlet in its lower contracted end and one or more inlet-pipes discharging into chamber 10 through its wall at its top and at these offsets, which permits the exhaust from said pipes to expand and causes it to assume a rotary motion and avoiding any internal offsets or surfaces upon which accumulations may form. 2nd. In a spark arrester and steam condenser, the combination of a pipe 8 spreading in two or more branches 9, and a chamber 10 consisting substantially of an inverted hollow cone with an opening in its top and an outlet in its contracted end, placed between these branches, which enter this chamber from the outside and discharge into it sideways at its top in a manner to cause the exhaust from said branches to assume

a rotary motion. 3rd. In a spark arrester and steam condenser, the combination of a pipe 8 spreading in two or more branches, and a

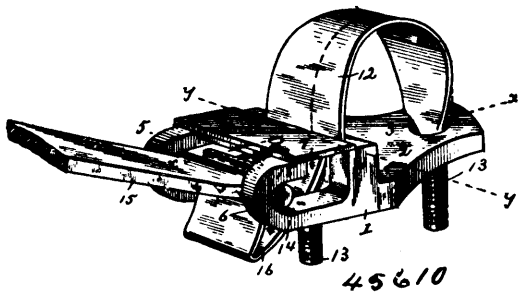


chamber 10 formed substantially of an inverted hollow cone with an opening in its top, having a downwardly projecting flange 13, around it and an outlet in its lower contracted end, placed between these branches which enter this chamber from the outside and discharge into its side-ways at its top in a manner to cause the exhaust from said branches to assume a rotary motion. 4th. In a spark arrester and steam condenser, the combination of a chamber 10, formed substantially by an inverted hollow cone with an opening its top and an outlet in its lower contracted end, one or more pipes discharging into chamber 10 sideways at its top in a manner to cause the exhaust from them to assume a rotary motion, and a permanently open draft-flue 15, entering chamber 10 at its lower part and projecting upwardly to within the opening in the latter top. 5th. In a spark arrester and steam condenser, the combination of one or more pipes 9, a chamber 10 with an opening in its top and an outlet in its lower contracted end, receiving these pipes sideways and at its top in a manner to cause the exhaust from them to assume a rotary motion, a draft-flue 15 entering chamber 10 at its lower part and projecting upwardly to within the opening in the latters top, a jacket 16 surrounding the whole structure, and an extension 17 connecting the lower opening of draft-flue 15 with a similar, but enlarged opening in the jacket. 6th. In a spark arrester and steam condenser, the combination of a chamber 10 with an opening in its top, having a downwardly projecting flange 13 around it and an outlet in its lower contracted end, one or more upright pipes discharging into this chamber sideways at its top in a manner to cause the exhaust from to assume a rotary motion and a permanently open draft-flue 15, entering chamber 10 at its lower part and projecting upwardly to within flange 13, surrounding the opening in the top. 7th. In a spark-arrester and steam-condenser, the combination of an expansion chamber consisting substantially of two inverted hollow half-cones placed so against each other that one half cone projects beyond the other one, upright partitions passing substantially radially from the edge of the one-half cone to the edge of the other one, whereby they are connected and the enclosure of the chamber completed, inlet-pipes discharging into the chamber through these upright, radial partitions and exit-openings in the top and lower end of the expansion chamber. 8th. In a spark-arrester and steam-condenser, the combination of an expansion chamber 10, substantially of the shape of an inverted cone, provided with outlets at top and bottom and an exhaust-pipe 8 below it, divided in two or more branches rising up parallel with the outside of chamber 10 and entering it sideways through its wall at the top, whereby the discharge is expanded as well as caused to assume a rotary motion. 9th. In a spark-arrester and steam-condenser, the combination of an expansion chamber 10, substantially of the shape of an inverted cone, provided with outlets at top and bottom, an exhaust pipe rising to the top of this chamber and discharging with its upper end sideways through the wall of said chamber whereby the discharge is expanded as well as caused to assume a rotary motion and a permanently open draft-flue 15, entering chamber 10, through its lower part and extending upwardly for the purpose of inducing a draft. 10th. In a spark-arrester and steam-condenser, the combination of an expansion chamber 10, substantially of the shape of an inverted cone, provided with outlets at top and bottom and an exhaust pipe rising to the top of this chamber and discharging with its upper end sideways through the wall of said chamber, whereby the discharge is expanded as well as caused to assume a rotary motion.

No. 45,610. Thill Coupling. (*Armon de limonière.*)

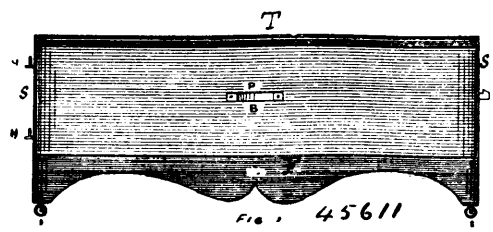
George W. Baugher, Valparaiso, Indiana, U.S.A., 22nd March, 1894; 6 years.

Claim.—1st. In a thill-coupling, the combination of the main attaching plate or iron having a rearward flat extension or tie-plate 2, with a rear elongated opening 3 therein, and forwardly-projecting lugs or ears, a vertical transversely disposed web between the lugs or ears and extending above the extension or tie-plate, and having a projection at the base thereof, the same being perforated and enlarged at opposite sides to form a seat, a shaft-iron engaging said lugs or ears, a spring located between the lugs and bearing on the head of the iron, and a yielding adjustable clip having a front and a rear leg, the rear leg normally depending below the front leg and loosely extending through the elongated opening 3 of the aforesaid extension, to compensate for vertical adjustment, and the front leg extending through the perforation in the projection located at the



base of the web and having the front portion of the clip-body entering said seat and bearing on the same, substantially as described.

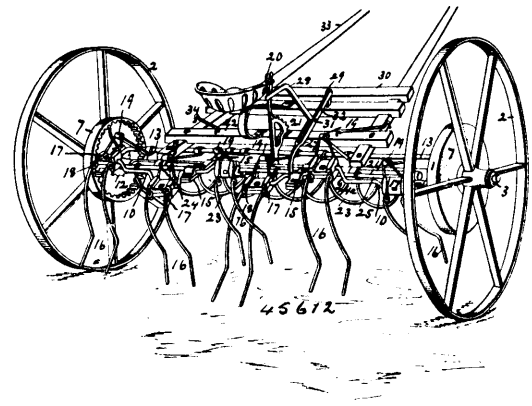
No. 45,611. Stove-Stand and Ash-Holder.
(*Base de poêle et baquet à cendres.*)



George F. Odin, New Westminster, British Columbia, Canada, 22nd March, 1894; 6 years.

Claim.—A stove-stand and ash-holder, having legs with or without casters I, I, flat bottom F, sides S, S, hinged door D, top having opening O, bed cover or lid C, all arranged and combined, substantially as and for the purposes hereinbefore set forth.

No. 45,612. Combined Hay Rake and Tedder.
(*Rateau à foin et faneuse combinés.*)

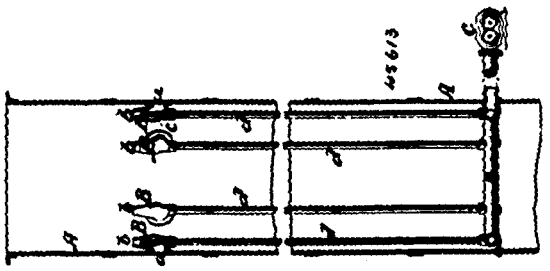


James Murray Spangler, Canton, Ohio, U. S. A., 22nd March, 1894; 6 years.

Claim.—1st. The combination, with an axle and travelling wheels loosely mounted thereon, of a hub 4, having an extension 5, a ratchet wheel mounted on the end of said extension, a propelling wheel 7, loosely mounted on the extension 5, detents 11 engaging the said ratchet wheel, a tedder shaft 10, and a pinion 9 secured to said tedder shaft and engaging the propelling wheel 7, substantially as described. 2nd. The combination, with an axle and travelling wheels loosely mounted thereon, of a hub 4, having an extension 5, a ratchet wheel mounted on the end of said extension, a propelling wheel 7, having internal teeth loosely mounted on the extension 5, between the driving wheels and the ratchet wheel, detents 11, secured to the propelling wheel 7, and engaging the ratchet wheel, a tedder shaft 10, and a pinion 9, secured to said tedder shaft and engaging the propelling wheel 7, substantially as described. 3rd. The combination, with an axle provided with travelling wheels, a hub 4, having an extension 5, a ratchet wheel mounted on the end of said extension, a propelling wheel 7, loosely mounted on the extension 5, detents 11 engaging said ratchet wheel, of a tedder shaft 10, a pinion 9 secured to said tedder shaft and engaging the propelling wheel 7, clamps 17 journalled on said tedder shaft, tedder forks passing through said clamps, a bar 13 attached to the axle, and links pivot-

ally connected at one end with the bar 13, and at the other end with the rear ends of the forks 16, substantially as described. 4th. In a combined hay rake and tedder, the combination of the axle 1, having loosely mounted thereon the travelling wheels 2, the hubs 4, provided with the extension 5, the ratchet wheel 7, fixed to the extension 5, the pinions 9, fixed to the shafts 10, the detents 11, the rod 24, having fixed thereto the teeth 23, the tedder forks 16, the clamps 17, links 19 journalled to the tedder shaft 10, and the operating levers 20 and 28, substantially as and for the purpose specified.

No. 45,613. Apparatus for Producing a Draft in Smoke-Stacks, &c. (*Appareil de tirage pour cheminées, etc.*)



Ray Gaul, Brooklyn, New York, U.S.A., 22nd March, 1894; 6 years.

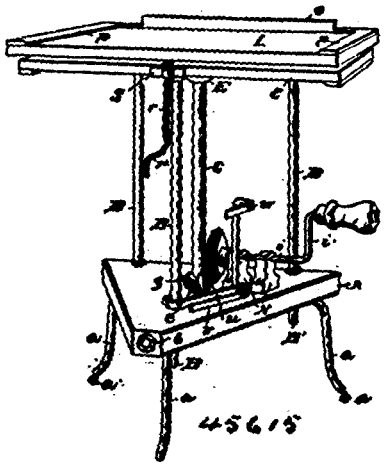
Claim.—1st. The combination with a stack provided with an unobstructed top, and having means adapted to be used in connection therewith for producing a rapid movement of the products of combustion therethrough, of circumferentially arranged air tubes located near the top of the stack, and extending from the outside thereof to its interior, and adapted to discharge air into the current of products of combustion to form a shield for the top of the stack, substantially as set forth. 2nd. The combination with a stack provided with an unobstructed top, and having means adapted to be used in connection therewith for producing a rapid movement of the products of combustion therethrough, of circumferentially arranged air tubes of tapered form located near the top of the stack, and extending from the outside thereof to its interior, and adapted to discharge air into the current of products of combustion to form a shield for the top of the stack, substantially as set forth.

No. 45,614. Fire or Waterproof Paint.
(*Peinture à l'épreuve du feu et de l'eau.*)

George H. McAlpine, Concorde, New Hampshire, U.S.A., 22nd March, 1894; 6 years.

Claim.—A fire and waterproof paint consisting of the ingredients and having the proportions as follows:—Coal tar, one barrel, crude petroleum twenty gallons, benzine three gallons, rosin three pounds, sulphate of zinc one pound, salsoda seven pounds, linseed oil in sufficient quantity to produce the desired consistancy.

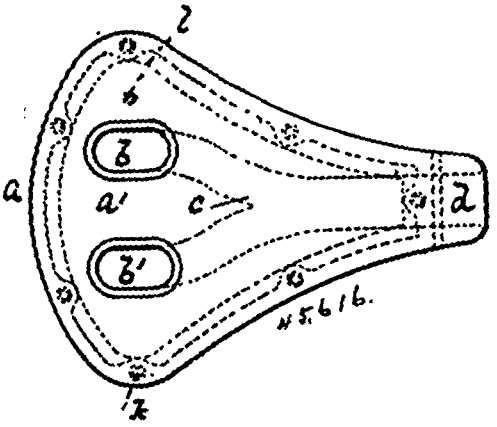
No. 45,615. Camera Stand. (*Trépied pour cameras.*)



John H. Green and George W. Baker, both of Ishpeming, Michigan, U.S.A., 22nd March, 1894; 6 years.

Claim.—The combination in a camera stand, of a base piece A having supporting legs on its lower side, and on its upper side vertical tubular standards B, and rotatable screws shaft *d*, with a bevel gear at the bottom for turning it, the parallel carrier plate C, with reinforcing metal frame E, on its under side having rigidly-attached depending rods B', entering the tubular standards and hollow stem or guide tube G, with nut encircling the screw shaft, and an adjustable platen I hinged to the plate c at one edge and provided with means for adjusting its inclination, substantially as shown and described.

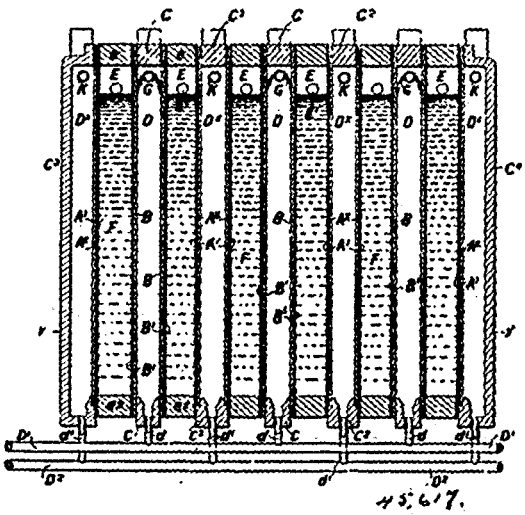
No. 45,616. Pneumatic Saddle for Cycles, etc.
(*Selle pneumatique pour cycles, etc.*)



John Carroll, Belfast, Ireland, 22nd March, 1894; 6 years.

Claim.—1st. A pneumatic saddle made with one or more internal ventilating tubes which extend lengthwise of the saddle, substantially as hereinbefore specified. 2nd. The combination in a pneumatic saddle, of an opening made in the peake and one or more openings in the cover, and of a ventilating air tube which communicates with said openings, substantially as hereinbefore specified. 3rd. The combination with a pneumatic saddle having an internal ventilating tube arranged lengthwise therein and communicating between the peak and the cover, of a flange extending round the inner edge of said cover, and of a frame for securing said flange to the saddle plate, substantially as hereinbefore specified. 4th. The combination with a pneumatic saddle having an internal ventilating tube arranged lengthwise therein, of a flange extending around the inner edge of the saddle cover, a supporting saddle plate having a groove therein, and a frame having a bulb formed on it for securing the flange air tight to said plate, substantially as hereinbefore specified.

No. 45,617. Apparatus for the Electrolysis of Chlorides and other Salts. (*Appareil pour l'électrolyse du chlorure et autres sels.*)

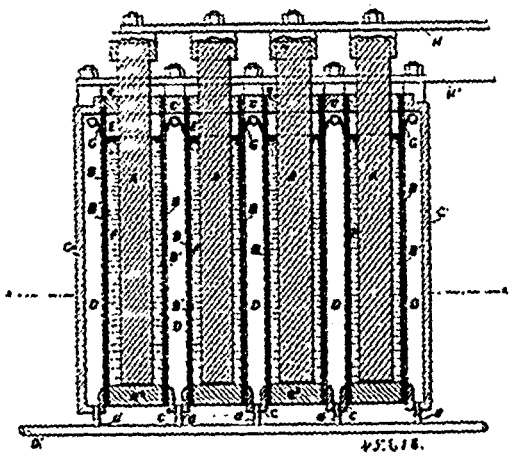


James Hargreaves, Farnworth-in-Widnes, and Thomas Bird, Cressington, near Liverpool, both in Lancaster, England, 22nd March, 1894; 6 years.

Claim.—1st. For use in the manufacture of an alkali or cation or derivative product by electrolysis, a cell having an anode and a cathode exposed, substantially as herein described. 2nd. For use in the manufacture of an alkali or cation or derivative product by electrolysis, a cell comprising numerous compartments containing the electrolyte, and a corresponding number of compartments or collecting chambers wherein the product is obtained from parallel

exposed electrodes, the several collecting chambers being arranged alternately with the compartments containing the electrolyte, and the anode collecting chambers alternately with the cathode collecting chambers, substantially as herein described. 3rd. For use in the manufacture of an alkali or cation or derivate product, a cell comprising a hollow plate C^3, a space D^x bounded by the hollow plate, a vertical exposed anode A^x, and a permeable diaphragm A^1 next the plate C^3, a chamber E containing the electrolyte, a permeable diaphragm B^1, and vertical exposed cathode B on the opposite side of the chamber E, and a space D next the cathode B, the cell extending with a hollow plate C^4, substantially as herein described. 4th. For use in electrolytic apparatus, the improved carbon anode having serrations formed on that face which is adjacent to the permeable diaphragm, substantially as herein described. 5th. In electrolytic apparatus, the combination with an exposed carbon electrode and its diaphragm, of a stream of water flowing between the electrode and the diaphragm, substantially as and for the purposes herein set forth. 6th. For use in electrolytic apparatus, the improved manufacture of diaphragm, consisting of a mineral with an insoluble sulphate deposited therein, substantially as herein described. 7th. The process for manufacturing a diaphragm for use in electrolytic apparatus, which consists in depositing sulphate of baryta or sulphate of strontia on a fabric of glass fibre or of asbestos, by repeatedly dipping the fabric into a solution of baryta or of strontia and alternately into sulphuric acid or a solution of a sulphate.

No. 45,618. Apparatus for the Electrolysis of Chlorides and Other Salts. (*Appareil pour l'électrolyse du chlorure et autres sels.*)



45,618.

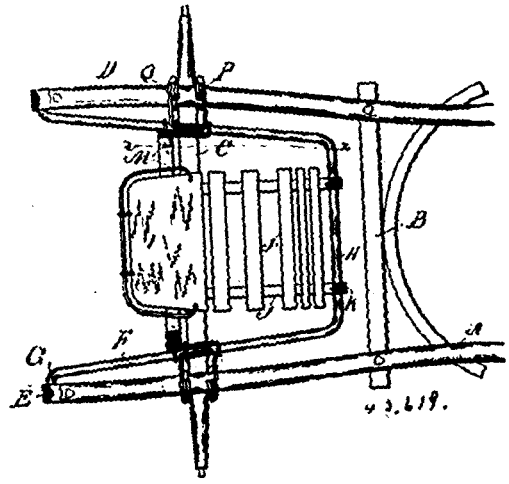
James Hargreaves, Farnworth-in-Widnes and Thomas Bird, Cressington, near Liverpool, both in Lancaster, England, 22nd March, 1894; 6 years.

Claim.—1st. For use in the manufacture of an alkali or cation or derivative product by electrolysis, a cell comprising at least one submerged electrode and two exposed electrodes, substantially as herein described. 2nd. For use in the manufacture of an alkali or cation or derivative product by electrolysis, a cell comprising numerous compartments containing the electrolyte and submerged electrodes and corresponding number of compartments or collecting chambers wherein the product is obtained from parallel exposed electrodes, the several compartments being arranged alternately, substantially as herein described. 3rd. For use in the manufacture of an alkali or cation or derivative product, a cell comprising a hollow plate C^3, a space D bounded by the hollow plate, a vertical exposed electrode B and permeable diaphragm B^1 next the plate, C^4 a chamber E containing the electrolyte, a submerged electrode A in the chamber E, a permeable diaphragm B^1, and vertical exposed electrode B on the opposite side of the chamber E, and a space D next the electrode last referred to, the cell ending with a hollow plate C^3, substantially as herein described.

No. 45,619. Road Cart. (*Désobligeante.*)

Jacob S. Shoemaker, New Lothrop, Michigan, U.S.A., 22nd March, 1894; 6 years.

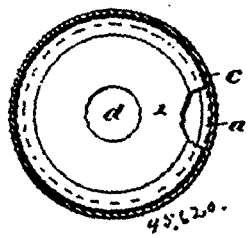
Claim.—1st. In a road cart, the combination of the axle, the frame extending rearwardly of the axle, a seat supporting frame at the rear end of said extension and springs on the frame of the vehicle supporting the free end of said supporting frame, substantially as described. 2nd. In a road cart, the combination of the frame extending rearwardly of the axle, a seat supporting frame pivoted in such rearward extension, springs on the vehicle frame supporting the free end of such seat supporting frame, a seat and a seat spring suspended from the seat supporting frame, substantially as described. 3rd. In a road cart, the combination of the axle, the frame extending rearwardly thereof, a seat supporting frame pivoted in said rearward extension, the seat, a basket or crate, a connection between the forward ends of the basket and the forward end of the supporting frame, a semi-elliptical spring suspended centrally of the



45,619.

seat supporting frame and a spring support on the vehicle frame for the seat supporting frame. 4th. In a road cart, the combination of the axle, the shafts extending rearwardly thereof having boxes at their rear ends, the frame F pivoted in said boxes and extending forwardly above the axle, the seat and crate bars J extending downwardly and forwardly from the seat supported at the forward end of the frame F, the semi-elliptical seat spring suspended from the frame F in rear of the axle, the coiled springs P on the shafts, and links R, from which the seat supporting frame is suspended upon the springs P, substantially as described. 5th. In a road cart, the combination of the axle, the shafts extending rearwardly thereof, the forwardly extending frame pivoted at the rear end of the shafts, the seat supported thereon, of the springs on the vehicle frame, a bail on the hinged frame beneath the spring and a link longitudinally adjustable connecting the bail and spring, substantially as described.

No. 45,620. Tobacco Can. (*Pot à tabac.*)



45,620.

Bernard Goldstein, Montreal, Quebec, Canada, 22nd March, 1894; 6 years.

Claim.—1st. In a tobacco can, box or holder, a ledge or support, formed in same and a removable moistener with rigid edge adapted to rest on such support, substantially as described. 2nd. In a tobacco can, box or holder, a moistener composed of a disc or strip of absorbent material with rigid edge and means for supporting it in such can, as set forth. 3rd. In a tobacco can, box or holder, a removable moistener composed of a disc or strip of absorbent material having a finger-hold and rigid edge and adapted to be supported within such can, for the purpose set forth. 4th. In a tobacco can, box or holder, a moistener composed of a disc or strip of absorbent material with rigid edge and a finger-hold for the purposes set forth. 5th. In a tobacco can, box or holder having an internal support, a removable moistener composed of a disc or strip of absorbent material, having a finger-hold and rigid edge and adapted to rest on such internal support, as described.

No. 45,621. Adjustable Shafts. (*Arbre mobile.*)

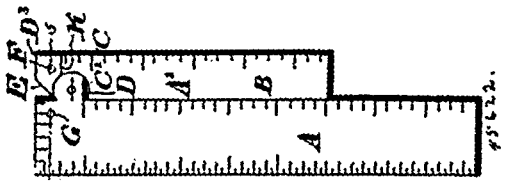
45,621.

The Rhoads Sash Balance Company, San Francisco, California, assignee of Anson Merrick Howard, New Haven, Connecticut, all in U.S.A., 24th March, 1894; 6 years.

Claim.—1st. An adjustable shaft made up of two parts, one having a longitudinal recess and the other a corresponding tenon to be

inserted any desired distance in said recess, the recessed portion being externally threaded and having a longitudinal groove cut through its threaded periphery, and the tenon portion fitting the said groove and having threaded portions coinciding with the thread on the recessed part, and an internally threaded nut or sleeve co-operating with said threaded portions, substantially as described. 2nd. The shaft, composed of two parts, one screw-threaded and provided with longitudinal slots cut diametrically through the same, and the other having a corresponding tongue or tenon fitting said slots and having thread portions coinciding with those of the slotted part, combined with a threaded sleeve or nut co-operating with the said threaded portions, substantially as described.

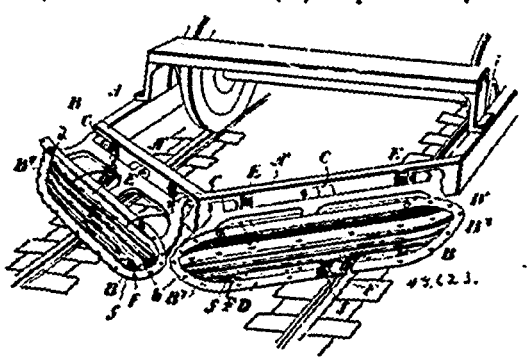
No. 45,622. Folding Square. (*Equerre pliante.*)



Hervey Copley Goodgion, New York City, New York, and Wm. Soder, Grange, New Jersey, all in the U.S.A., 24th March, 1894; 6 years.

Claim.—1st. A folding square, having a limb with a projecting circular ear, a recess and a tongue at one end, and another limb with a circular recess to receive said ear, a recess on one side at its end to receive the tongue of the other limb, each of said limbs having an inclined shoulder against which the ends of the limbs abut, and the ear C, having a side C^1, at a right angle to the side A^1, of the limb A, said parts being combined substantially as described. 2nd. A folding square, having a limb with a projecting circular ear, a recess and a tongue on one end, and another limb forming an unobstructed inner angle therewith, and provided with a recess to receive said ear, a recess to receive said tongue and having a tongue fitting in the recess of the other ear, each of said limbs having inclined shoulders, against which the inclined ends of said tongues abut, and a screw secured in a countersunk opening in one of said limbs, and a threaded opening in the other, said parts being combined, substantially as described.

No. 45,623. Car Fender. (*Défenee pour chars.*)



William Henry Judson and Matilda Judson, both of Toronto, Ontario, Canada, 24th March, 1894; 6 years.

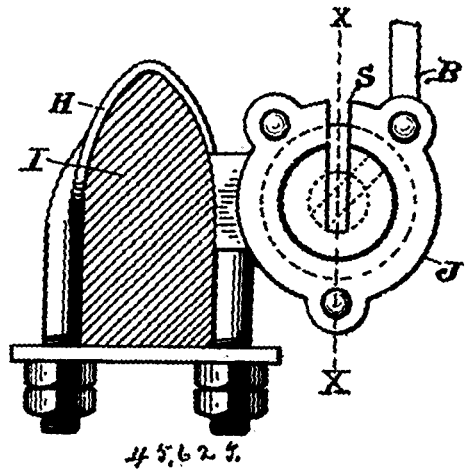
Claim.—1st. The combination, with the pilot frame having converging end boards, of the guards B, hinged by stop hinges C to the angle bars, so as to have a limited upward movement and held up in position away from the track by springs extending forwardly beneath the guards, as and for the purpose specified. 2nd. The combination, with the angle boards A^1, A^1, of the pilot frame, of the guards B, hinged at C, so as to have a limited upward movement, and having the tubular flexible rubber cushion D, extending around the bottom and ends, and spring E, secured to the angle bars A^1, A^1, and extending beneath the centre bars B^1, of the guards as and for the purpose specified. 3rd. The combination, with the angle boards A^1, A^1, of the pilot frame, of the guards B, hinged at C, so as to have a limited upward movement, having the tubular flexible rubber cushion D, extending around the bottom and ends, a central tubular flexible rubber cushion secured to the centre bar and extending from end to end of the same, and the spring E, secured to the angle boards A^1, A^1, as and for the purpose specified. 4th. The combination, with the angle boards A^1, A^1, of the pilot frame, of the guards B, pivoted upon the stop hinges C, and having top and bottom edges, which converge and recede at each end as specified, central slats extending longitudinally from end to end between the top and bottom edges and the springs E, as and for the purpose specified.

No. 45,624. Irone. (*Irone.*)

The Firm of Haarmann and Riemer, Holzminder, Prussia, assignees of Johann Carl Wilhelm Ferdinand Tiemann, Berlin, all in Germany, 24th March, 1894; 6 years.

Claim.—1st. As a new product, a fragrant ketone of the composition $C^{13}H^{20}O$, called irone, characterized by a specific gravity of 0·939, coefficient of refraction 1·50113, boiling point 144° centigrade under a pressure of 16 mercury. 2nd. The herein described method of producing a fragrant ketone from orris root extract, which consists in distilling the extract in a current of steam, treating the distillate with alkali, and subsequent distillation in a current of steam in the manner specified, treating the resulting distillate with oxidizing agents, transforming the resulting crude ketone into a compound decomposable by dilute acids, such as its phenyl-hydrazon, and finally separating the pure fragrant ketone by a dilute acid.

No. 45,625. Thill Coupler. (*Armon de limonière.*)



Mark Wemple and Frank H. Vrooman, all of Chicago, Illinois, U.S.A., 24th March, 1894; 6 years.

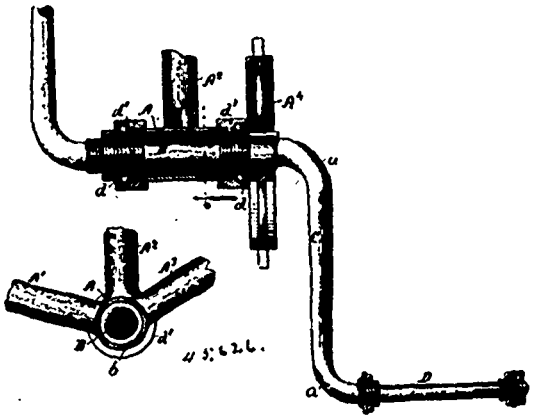
Claim.—1st. In a thill coupling, the iron provided with a locking bolt, and key K seat, with the ends oppositely disposed within the bearing plates to retain the said thills in position, substantially as herein set forth. 2nd. In a thill coupling, the forwardly projecting wings provided outwardly with an annular recess to receive therein the rotating plates and vertical openings to receive the ends of the locking bolts, substantially as herein set forth. 3rd. In a thill coupling, the slotted rotating plates disposed outwardly from the clip wings to receive therein the ends of the locking bolt, substantially as herein set forth. 4th. In a thill coupling, the combination of the clips wings and the vertical slot therein, with the thill iron, the locking bolt, the key, the rotating plates and slots, substantially as herein set forth. 5th. In a thill coupling, the combination of the thill iron, the locking bolt and the key, with the forwardly projecting wings the bearings therein, and the rotating locking plates, substantially as herein set forth.

No. 45,626. Crank Shaft and Bearing for Bicycles.
(*Arbre à manivelle et coussinet pour bicycles.*)

William Henry Fauber, Chicago, Illinois, U.S.A., 24th March, 1894; 6 years.

Claim.—1st. The combination with a machine frame and crank shaft, of a transverse supporting sleeve attached to the frame and provided with a lateral opening for the insertion and removal of the shaft, and bearings for the shaft located at opposite ends of said sleeve, each of said bearings comprising a stationary annular part which is separated and detachably secured to one of the sleeve ends, 2nd. The combination with a machine frame, of a transverse supporting sleeve being provided with a lateral opening to allow the insertion and removal of the shaft, and a bearing for the shaft comprising an annular part which is adjustable endwise relatively to the shaft and is secured to the said sleeve or tube by a screw joint, substantially as described. 3rd. The combination with a machine frame and crank shaft, of a transverse supporting sleeve attached to the frame, and provided with a lateral opening for the insertion and removal of the shaft, and an anti-friction roller bearing for the shaft of which the stationary annular part or member is secured to the end of the sleeve, substantially as described. 4th. The combination with a machine frame and crank shaft, of a transverse supporting sleeve attached to the frame and provided with a lateral opening for the insertion and removal of the shaft, and an anti-friction roller bearing for the shaft of which the stationary annular part or member is secured to the end of the sleeve by means of a screw threaded joint, substantially as described. 5th. The combination with a machine frame

and crank shaft, of a supporting sleeve attached to the frame and *provided with a lateral opening for the insertion and removal of the* shaft, and anti-friction rollers of which the stationary members

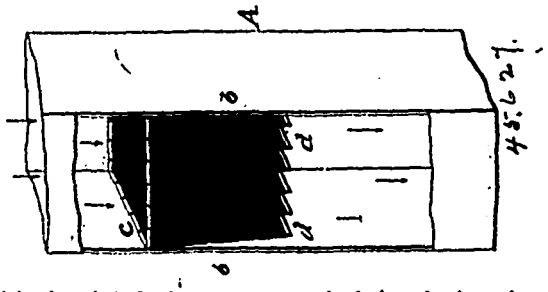


have screw-threaded connection with the ends of the sleeve, and the movable members are attached to and have longitudinal adjustment upon the shaft, substantially as described. 6th. The combination with a machine frame and crank shaft, of a supporting sleeve attached to the frame and provided with a lateral opening for the insertion and removal of the shaft, anti-friction roller bearings, of which the stationary members have screw-threaded connection with the ends of the sleeve and the movable members are attached to and have longitudinal adjustment upon the shaft, and a segmental filling piece also provided with screw-threads at the ends to engage said stationary parts or members of the bearings, substantially as described. 7th. The combination with a machine frame, of a crank shaft and crank arm made integral with each other, and a bearing for the shaft comprising an annular part or member surrounding the shaft, those parts of the shafts and crank-arm exterior to the bearing being made in all parts smaller in size than the diameter of the shaft at the point where the said annular part or member of the bearing engages the same, whereby the latter may be removed over the crank-arm, substantially as described. 8th. The combination with a machine frame, of a crank-shaft and crank-arms made integral with each other, a transverse supporting sleeve attached to the frame and provided with a lateral opening for the insertion and removal of the shaft, and anti-friction rollers or bearings of which the stationary annular parts or members are attached to the ends of the said sleeve, those parts of the shaft and crank-arms exterior to the bearings being made in all parts smaller in size than the diameter of the central openings of the annular parts or members of the bearing, whereby the latter may be removed over the crank-arms, substantially as described. *9th. The combination with a machine* frame, of a crank-shaft, crank-arms and pedal shafts made integral with each other other, a supporting sleeve for the crank-shaft attached to the frame, and provided with a lateral opening for the insertion and removal of the crank-shaft, and anti-friction roller bearings for the shaft of which the stationary annular parts are attached to the ends of said sleeve, the parts of said crank-arms and pedal shafts exterior to the bearings being made of less diameter than the inner diameter of the annular parts or bearings whereby the latter may be removed endwise from the shaft, substantially as described. 10th. The combination with a machine frame, of a crank shaft, crank-arms and pedal shafts made integral with each other, a supporting sleeve for the crank-shaft attached to the frame and provided with a lateral opening for the insertion and removal of the crank-shaft, and anti-friction roller bearings for the shaft of which the stationary annular are attached to the ends of said sleeve, the said crank-arms and pedal shafts being made of less diameter than the inner diameter of the annular parts or bearings, whereby the *latter may be removed endwise from the shaft, and a sprocket* wheel attached to the shaft, the central opening of which is greater in diameter than the parts of the shaft and crank-arms exterior thereto, substantially as described.

No. 45,627. Air Purifier. (*Machine à purifier l'air.*)

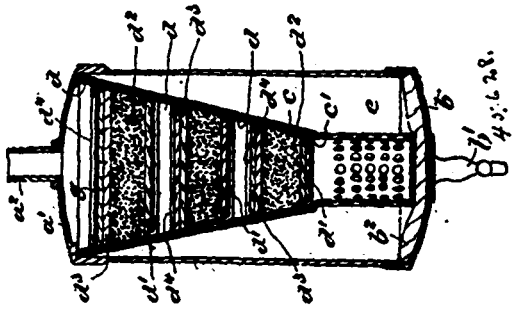
John S. Dodge, Minneapolis, Minnesota, U.S.A., 24th March 1894; 6 years.

Claim.—1st. In combination with an air duct or pipe, a series of V-shaped pockets arranged within and in line with said pipe, substantially as and for the purposes set forth. 2nd. In combination with an air duct or pipe, a series of V-shaped pockets arranged within and in line with said pipe and having weights at their inner ends, substantially as and for the purposes set forth. 3rd. In an apparatus for purifying air the combination with an air supply duct or pipe, of a series of V-shaped pockets formed of cloth or other porous fabric arranged therein and in line with said pipe, and suspended by their *upper open ends which face the incoming air current* and having their lower ends free, substantially as and for the purpose specified. 4th. In an apparatus for purifying air the combination with an air supply duct or pipe, of a series of V-shaped pockets arranged within *and in line with said pipe and formed of cloth or other porous fabric*



and having their fixed open upper ends facing the incoming air *current and provided with weights at their free lower ends*, substantially as and for the purpose specified.

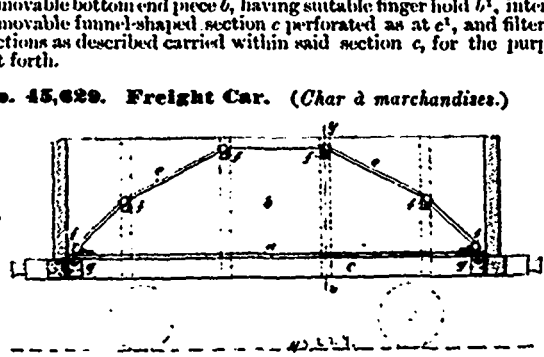
No. 45,628. Filter. (*Filtre.*)



Adolphus Davis, Montreal, Quebec, Canada, 24th March, 1894; 6 years.

Claim.—1st. In a filter, the combination with an outer casing, having suitable inlet and outlet, of a removable end piece for same, a removable internal carrier section held in position within the casing, to communicate with the inlet thereof, by said removable end piece when in place, and a number of removable filtering sections carried within said internal section, the wall of which is perforated at a point below the lowermost of said filtering sections, for the purpose set forth. 2nd. The filtering section composed of a hollow dish with open top and foraminiferous bottom, and containing a section of felting upon said bottom, a body of granular substance, a double layer of felting over such granular substance and a retaining device, for the purpose set forth. 3rd. In a filter, the combination of a casing *a*, having an inlet opening at its top end, and outlet as at *f*, a removable bottom end piece *b*, having suitable finger hold b^1, internal removable funnel-shaped section *c* perforated as at c^1, and filtering sections as described carried within said section *c*, for the purpose set forth.

No. 45,629. Freight Car. (*Char à marchandises.*)



George T. Morris, Guttenburg, New Jersey, U.S.A., 24th March, 1894; 6 years.

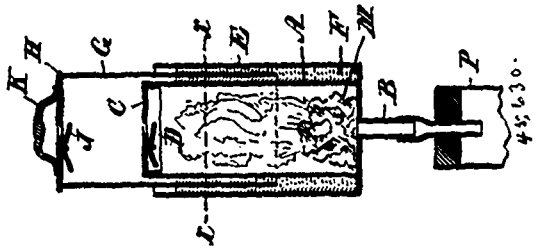
Claim.—A freight car provided with inner longitudinal braces and with fasteners projecting inwardly from the car sides, and which are adapted to receive and attach said braces to the car sides, substantially as specified.

No. 45,630. Plumbers Test Pump.
(*Pompe à épreuve de plombier.*)

Robert Sampson, Quebec, Province of Quebec, Canada, 24th March, 1894; 6 years.

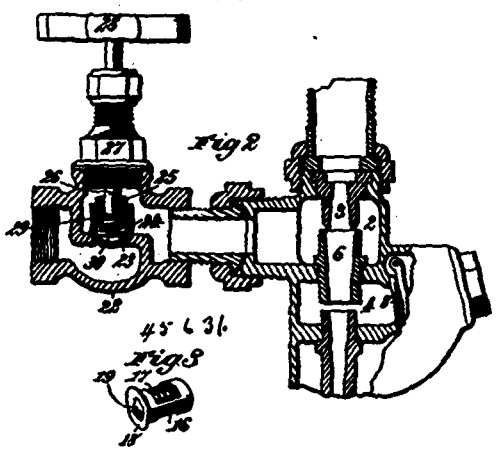
Claim.—1st. The combination of a generating chamber or cylinder A, provided with an outlet pipe B, and closed at top by a cap or cover C, provided with an inlet air valve D, a jacket E, surrounding said cylinder and providing a water jacking space F, and a cylinder G, fitting into said space and closed at the top and provided with an

inlet air valve J, and a handle to reciprocate said cylinder G, for injection of smoke or odours into a sanitary pipe, for the purpose



set forth. 2nd. The combination of the cylinder or generating chamber A, having an outlet pipe B, and a cover C, provided with an air inlet valve D, a smoke producing or odour generating material M, burned within said chamber or cylinder, a jacket E, surrounding said cylinder and closed at the bottom, a water space or packing F, surrounding said cylinder and enclosed by said jacket, and a cylinder G, telescoping over the cylinder A, and reciprocating in said water space, said cylinder G, having an inlet air valve J normally open, as set forth. 3rd. The combination of the combustion on generating chamber or cylinder A, having at one end a cap or cover C, provided with an inlet air valve D, and at the other end a discharge or outlet pipe B, and a cylinder G, telescoping with said cylinder A, and having a closed top provided with an inlet air valve J, said cylinder G operating reciprocally, by a suitable handle, as set forth.

No. 45,631. Injector. (*Injecteur.*)



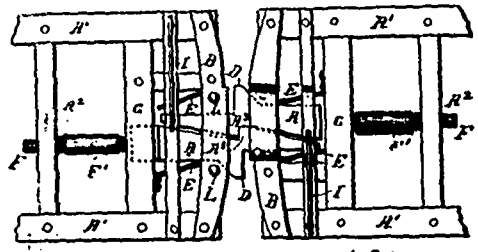
Lovren E. Hogue, Greenville, Pennsylvania, U.S.A., 24th March, 1894; 6 years.

Claim.—1st. The combination with a liquid supply pipe or conduit and a fluid conduit for the passage of fluid under pressure to create suction and draw liquid through the supply pipe or conduit, of an automatic valve regulating the inflow of liquid from the supply pipe or conduit and more or less opened or closed by the action of the fluid under pressure in the fluid-conduit, substantially as described. 2nd. The combination with a casing, having a liquid supply pipe or conduit, a vacuum-chamber, and a nozzle for the passage of a fluid under pressure to create a partial vacuum in the vacuum chamber, of an automatic spring-pressed valve, interposed between the vacuum chamber and the liquid supply pipe or conduit, and more or less opened or closed by the variations in pressure of the said fluid, substantially as described. 3rd. The combination with a casing having a water-supply pipe or conduit, a vacuum chamber, a steam-nozzle, a suction-jet, and a combining tube, of an automatic spring-pressed valve more or less opened or closed by variations in pressure, of the steam for increasing or diminishing the quantity of water flowing from the water supply-pipe or conduit into the suction-chamber, substantially as described. 4th. The combination with a casing having a liquid-pipe, and a fluid-conduit for the passage of fluid under pressure to create suction and draw the liquid into the casing of a vale-casing connected with the supply-pipe, a valve-stem and a spring-pressed valve mounted upon and movable independent of the valve-stem, said valve being more or less opened or closed by variations in the pressure of the said fluid for increasing or diminishing the quantity of liquid delivered to the casing, substantially as described.

No. 45,632. Car Coupler. (*Attelage de chars.*)

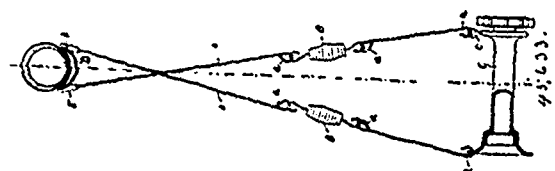
Daniel Hunt, Round Grove, Missouri, U.S.A., 24th March, 1894; 6 years.

Claim.—1st. In a car coupling, the combination with the draw-head, having a bevelled hooked end and a notch in its side, of the stem having its ends reduced, forming an intermediate enlarged portion, and having its bearings in enlarged apertures in the cross-



bars of the car platform, the coiled springs and the two-armed lever engaging with said notch, substantially as described. 2nd. In a car-coupling, the combination with the horizontal and cross-beams A^1 and A^2, the end cross-bars B, B^1, the laterally movable draw-bars A, having bevelled hook A^3, notch A^4, and bumper D, stem F, and coiled springs G, of the springs E, E^1, stop-pins L, and two-armed lever I, all constructed and combined to operate, substantially as described.

No. 45,633. Wheel. (*Roue.*)



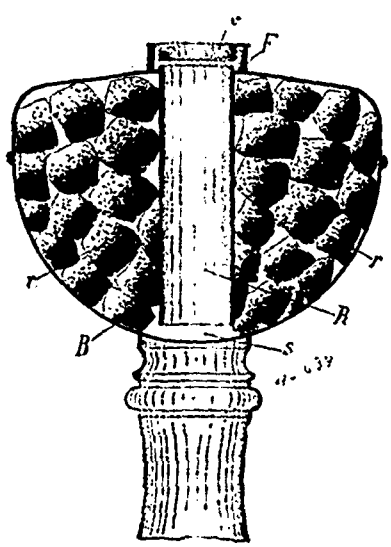
Joseph David Everett, Belfast, Ireland, 24th March, 1894; 6 years.

Claim.—1st. An elastic or spring-wheel, consisting of a hub and wheel rim, and elastic spokes each of which consists of a wire spoke length, and a separate and detachable spring (preferably of helical form), the said wire spoke lengths and the said spring being connected to each other and to the hub and rim by means of hooks and eyes, as and for the the purpose set forth. 2nd. Spring spokes of wheels, consisting of helical springs and wire spoke lengths attached to each other and to the hub and rim of the wheel by hook and eyes, substantially as set forth. 3rd. An elastic or spring-wheel, consisting of a hub and wheel rim, and elastic spokes each of which consists of a wire spoke length and a separate and detachable spring (preferably of helical form) the said wire spoke lengths and the said springs being connected to each other and to the hub and rim by means of hooks and eyes, the spokes being crossed so that their points of attachment to the wheel rim are on the opposite side of the wheel to their points of attachment to the hub, as and for the purpose set forth. 4th. An elastic or spring wheel, consisting of a hub and wheel rim, and elastic spokes each of which consists of a wire spoke length and a separate and detachable spring (preferably of helical form) the said wire spoke lengths and the said springs being connected to each other and to the hub and rim by means of hooks and eyes, the spokes being crossed so that their points of attachment to the wheel rim are on the opposite side of the wheel to their points of attachment to the hub, those on one side of the wheel being longer than those on the other side thereof so that the said spokes on one side of the wheel make a greater angle with the plane of the wheel than the spokes on the other side thereof, as and for the purpose set forth. 5th. In a wheel, the combination with a hub having eye studs screwed into, or transverse holes formed through, its flanges, of a rim having a series of notches cut or formed in its edges, of spokes consisting of lengths of wire and helical springs connected together by hooks and eyes, the one end of each spoke being screwed into a hook-shaped nipple adapted to engage with one of the notches in the edges of the wheel rim, and the other end of each spoke being attached to the eye studs or holes in the flanges of the hub by means of hooks, the said spokes being alternately crossed between their points of attachment to the rim and hub of the wheel, as set forth. 6th. In a wheel, the combination with a hub, having eye studs screwed into, or transverse holes formed through its flanges of a rim having recurved edges in which are a series of holes, of spokes consisting of lengths of wire and helical springs connected thereto by hooks and eyes, the one end of each spoke being screwed into a hook-shaped nipple adapted to engage with holes in the recurved edges of the wheel rim, and the other end of each spoke being attached by a hook to the eye studs or holes in the flanges of the hub, the said spokes being alternately crossed between their points of attachment to the rim and hub of the wheel, as set forth. 7th. In a wheel, the combination with a hub having eye studs screwed into, or transverse holes formed through its flanges, of a rim of a flat band section having a series of wire eyes fixed to it, of spokes consisting of lengths of wire and helical springs connected together by hooks and eyes, the one end of each spoke being screwed into a hook-shaped nipple adapted to engage with one of the wire eyes fixed

to the wheel rim, and the other end of each spoke being attached by a hook to the eye studs or holes in the flanges of the hub, the said spokes being alternately crossed between their points of attachment to the rim and hub of the wheel, as set forth. 8th. In a wheel, the combination with a hub having eye studs screwed into, or transverse holes formed in, its flanges, of a rim having a series of holes adapted to receive headed eyes, of spokes consisting of lengths of wire screwed into hooked nipples and helical springs connected together by hooks and eyes, the one end of each spoke being attached by a hook to one of the headed eyes in the wheel rim, and the other end of each spoke being attached by a hook to the eye studs or holes in the flanges of the hub, the said spokes alternately being crossed between their points of attachment to the rim and hub of the wheel, as set forth. 9th. In a wheel, the combination of a hub having either eye studs screwed into, or transverse holes formed through its flanges, of a rim having a series either of notches or of holes in its flanges, of spokes consisting of lengths of wire and helical springs connected together and to the wheel rim and hub by hook and eye joints, the spokes on one side of the wheel being placed at a greater angle with the plane of the wheel than those on the other side thereof, as set forth. 10th. In a wheel, the combination with a hub having either eye studs screwed into, or transverse holes formed through, its flanges, of a rim having a series of notches or holes in its edges, of spokes consisting of lengths of wire and helical springs connected to each other and to the wheel rim and hub by hook and eye joints, the said spokes being alternately crossed between their points of attachment to the wheel rim and hub, those on one side of the wheel being placed at a greater angle with the plane of the wheel than those on the other side thereof, as set forth. 11th. In a wheel having spring spokes either crossed or direct, connecting the alternate spokes attached to the same side of the hub to the wheel rim so that they slope backwards and forwards respectively from radial planes through their points of attachment, as and for the purpose hereinbefore set forth.

No. 45,634. Safety Device for Lamps.

(*Appareil de sûreté pour lampes.*)



Georg Walez, Munich, Kingdom of Bavaria, Germany, 24th March 1894; 6 years.

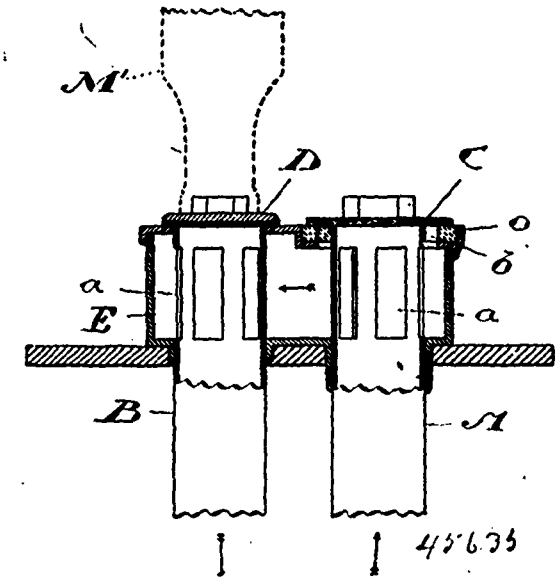
Claim.—A safety device for lamps, consisting of a tube R reaching almost to the bottom of the reservoir, and attached to the same by means of a flange F, a chamber *r* being thus provided which is in connection with the interior of the tube R, and which is filled with sponges for the reception of the combustible material, substantially as and for the purpose herein described, with reference to the accompanying drawing.

No. 45,635. Pneumatic Cash Carrier.

(*Chien de magasin pneumatique.*)

Frederick J. H. Hazard, Toronto, Ontario, Canada, 24th March, 1894; 6 years.

Claim.—1st. In a pneumatic cash carrier apparatus, the up tube A, and down tube B, closed by the pivoted traps C, and D, in combination with the chamber E, communicating with the tubes A and B, by the large openings *a*, substantially as and for the purpose specified. 2nd. In a pneumatic cash carrier apparatus, the up tube A, and down tube B, closed by the pivoted traps C, and D, in combination with the chamber E, communicating with the tubes A, and B, by the large openings *a*, and directly with the outer air by the opening *b*, when the trap C, is raised, substantially as and for the purpose specified. 3rd. In a pneumatic cash carrier apparatus, the combination of the carrier F, the up tube A, the down tube B, the pivoted traps C, and D, the chamber E, and the openings *a*, substantially as and for the purpose specified. 4th. In a pneumatic



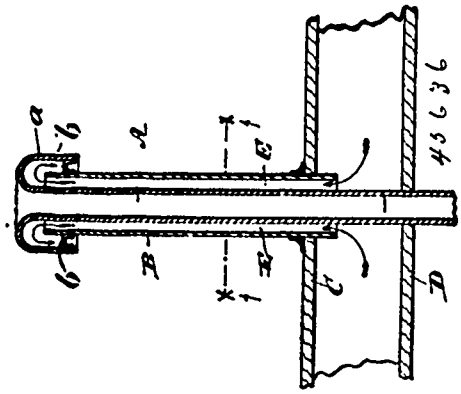
cash carrier apparatus, the combination of the carrier F, the up tube A, the down tube B, the pivoted traps C, and D, the chamber E, the opening *a*, and the opening *b*, substantially as and for the purpose specified. 5th. In a pneumatic cash carrier apparatus, the up tube A, having suitable communications with the down tube B, in combination with the pivoted leather trap C, located at the end of the tube A, substantially as and for the purpose specified. 6th. In a pneumatic cash carrier apparatus, the combination of the up tube A, having suitable communications with the down tube B, the pivoted leather strap C located at the end of the tube A, and the opening *b* forming, when the trap C is raised, a communication between the down tube B and the open air, substantially as and for the purpose specified. 7th. In a pneumatic cash carrier apparatus, the curved head M located above the exit trap C, of the pipe A, substantially as and for the purpose specified. 8th. In a pneumatic cash carrier apparatus, the down pipe B closed by the pivoted spring actuated trap G, in combination with the chamber H, large openings c, and suction pipe I, substantially as and for the purpose specified. 9th. In a pneumatic cash carrier apparatus, the down pipe B closed by the pivoted spring actuated trap G, in combination with the pivoted spring actuated brake J, substantially as and for the purpose specified. 10th. In a pneumatic cash carrier apparatus, the down pipe B closed by the pivoted spring actuated trap G, in combination with the pivoted spring actuated brake J, the lug K, and stop L, substantially as and for the purpose specified. 11th. The leather carrier F, comprising the following elements: the outer leather case *c*, the inner leather case *d*, the stop *e*, and the opening *f*, substantially as and for the purpose specified. 12th. The leather carrier F, comprising the following elements, the outer leather case *c*, the inner leather case *d*, the stop *e*, the opening *f*, the flexible washer *g*, and soft head *h*, substantially as and for the purpose specified. 13th. In a pneumatic cash carrier system, the combination of the carrier F, the up tube A, the down tube B, the pivoted traps C and D, the chamber E, the openings *a* and *b*, the pivoted spring actuated trap G, the lower end of the down pipe, the chamber H, large openings c, the suction pipe I, substantially as and for the purpose specified.

No. 45,636. Method of and Means for Preventing the Clogging of Ventilators. (*Méthode et moyen d'empêcher les obstructions dans les ventilateurs.*)

James E. H. Paddon, Montreal, Quebec, Canada, 27th March, March, 1894; 6 years.

Claim.—1st. In combination with a ventilator, a hot air conductor opening at its lower end into the interior of the house or dwelling at a point below the roof thereof for the purpose set forth. 2nd. In combination with a soil pipe ventilator, a hot air conducting tube encircling same and communicating with the heated atmosphere of the house at a point below the roof thereof for the purpose set forth. 3rd. In combination with a soil pipe ventilator, an enclosing casing for the exposed portion of same communicating with the heated atmosphere of the house at a point below the roof thereof, as and for the purpose herein set forth. 4th. A combined soil pipe ventilator and ventilator for the house, or the like, to which it is connected, the house ventilator being of shorter length and terminating

with an open end at a point below the roof so as to communicate with the heated atmosphere of the house for the purpose set forth. 5th.



In combination with a soil pipe ventilator having its upper edge turned outward and downward for the purpose set forth, a secondary or enclosing and conducting pipe or jacket with open ends and extending from a point within the turned down portion of the soil pipe ventilator, to and through the roof of the building where it terminates at a point below same. 6th. In combination with soil pipe ventilator having outwardly and downwardly turned upper edge *a*, a secondary or enclosing pipe or jacket B acting as a conductor of heated air from the house, or the like, to which it is connected, around the full length of the ventilator A, projecting above roof C, for the purpose set forth.

No. 45,637. Manufacture of Tea.

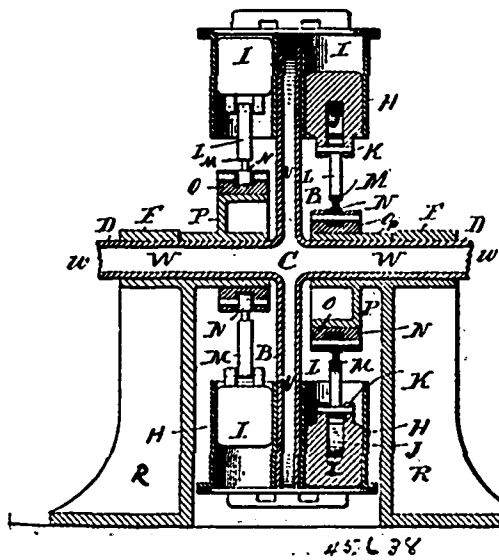
(*Fabrication de thé.*)

Harrison Jackson, Southport, Lancaster, England, 27th March, 1894; 6 years.

Claim.—The process of elementing or neutralizing the tonnic acid in tea by adding thereto a suitable alkali, such as potash or ammonia, and then subjecting it to the action of oxygen, either in the form of atmospheric air, pure oxygen gas, or ozone, substantially as described.

No. 45,638. Air Compressor.

(*Machine de compression pour l'air.*)

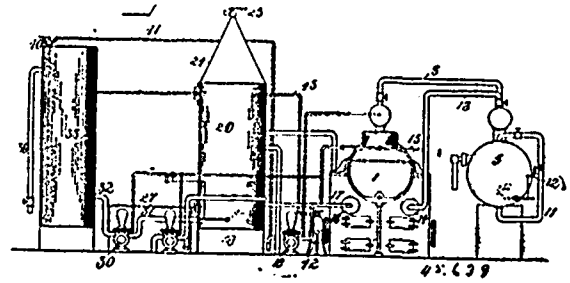


Charles Frederick Fogg, New York City, New York, U.S.A., 27th March, 1894; 6 years.

Claim.—1st. The combination with a revolvable disc or arms provided with air passages, and bearing a series of cylinders adapted and arranged to revolve therewith, of weighted plungers or pistons, playing in said cylinders, said pistons being connected by means of slotted links to a revolvable yoke, eccentrically located to the shaft of the disc, whereby compression will be accomplished by centrifugal force, without leverage, the whole mounted upon a supporting base. 2nd. The combination with a revolvable disc or arms wherein are air passages, to which disc or arms are secured cylinders, of weighted plungers or pistons fitting within said cylinders, and connected by means of links to a strap or yoke encircling a stationary eccentric through which the shaft of the disc passes, whereby compression will be accomplished by centrifugal force. 3rd. The combination with a revolvable disc or arms provided with air passages, and mounted upon a hollow shaft, of a series of cylinders secured to said disc or arms, and arranged to revolve therewith, and weighted plungers or pistons, playing in said cylinders, said plungers being thrown outward by centrifugal force, and drawn inward by connections between said pistons and a yoke or strap encircling a stationary eccentric through which the disc shaft passes, said connections consisting of slotted links pivoted at one extremity to the yoke, and connected to the piston by pins passing through the slots. 4th. The combination with a rotatable disc or arms mounted upon a hollow shaft and bearing a series of cylinders having air passages communicating with a hollow shaft, and ingress and egress valves controlling said passages, of pistons located in said cylinders, said pistons being connected to a revolvable yoke by means of slotted links whereby they will be drawn inward, but will be driven outward by centrifugal force without any leverage. 5th. The combination with a revolvable disc or arms, having radial air passages therein and bearing a series of cylinders, of weighted plungers or pistons fitting into said cylinders, and arranged to rotate therewith in a circle eccentric to the circle of rotation of the disc or arms, so that the plungers or pistons will be driven outward by centrifugal force, and drawn inward by connections to an eccentric, and egress *valves communicating with an air chamber connecting cylinders on* both sides of the disc or arms and leading to a central air passage or passages running through the disc or arms and opening into a hollow shaft.

No. 45,639. Water Purifier.

(*Appareil de purification d'eau.*)



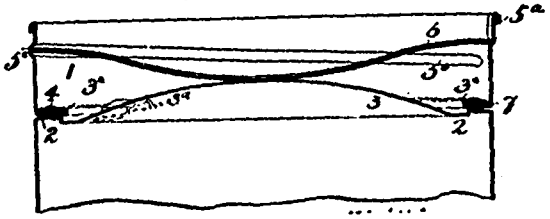
Thomas Craney, Bay City, Michigan, U.S.A., 27th March, 1894; 6 years.

Claim.—1st. The combination with a steam generator, of an evaporator or still having a water chamber, a steam chamber within the water chamber, a connection from the steam space of the generator to the steam chamber of the evaporator, a connection from the bottom of the steam chamber of the evaporator to the water chamber thereof and an exit from the top of the water chamber, substantially as described. 2nd. The combination with a steam generator, an evaporator or still having a steam and water chamber, a connection from the generator to the steam chamber of the evaporator, and from the bottom of the steam chamber to the water chamber thereof, an exit pit from the evaporator, an air pipe connecting with the exit pipe, a superheater or retort in the furnace of the generator into which the exit pipe connects a condenser having a gas chamber at the top, a connection from the superheater to the gas chamber, and an air and gas relief at the top of the gas chamber, substantially as described. 3rd. In a device of the kind described, the combination of a still or evaporator, a steam supply pipe therefrom, and air pipe connecting thereto, a condenser having a gas chamber at the top into which the supply pipe discharges and a pressure relief port at the top of the gas chamber, substantially as described. 4th. In a device of the kind described, the combination of a still or evaporator, a steam supply pipe leading therefrom, an air pipe connecting thereto, a condenser, a gas chamber at the top of the condenser, a perforated enlarged drum in the gas chamber into which the steam pipe discharges, and a pressure relief port at the top of the gas chamber, substantially as described. 5th. The combination of a steam generator or still, a condenser, a pump having its suction connected therewith, a storage tank into which the pipe from the pump discharges, an air supply pipe connecting with the discharge pipe of the pump and a spraying nozzle on the discharge pipe in the tank. 6th. A water aerating device comprising means for commingling the air and water, a tank, a connecting pipe for the commingled fluids leading into the tank, a spraying device at the end of said pipe and means for forcing the commingled fluids under pressure therethrough, substantially as described. 7th. A water aerating device comprising means for commingling air and water, a tank, an aerating chamber in said tank having the discharge at the bottom, a connecting pipe for the commingled fluid leading into the chamber, a spraying nozzle at the end of said pipe and a vent at the other end of the tank, substantially as described. 8th. The combination of the steam generator, a condenser, a storage tank, an aerating chamber in the storage tank having a restricted outlet at the lower end, a pump adapted to draw the fluid

from the condenser, and a discharge pipe from the pump leading into the aerating chamber, a spraying nozzle on said pipe in said chamber, an air pump, a heating chamber or retort in the furnace of the generator connecting with the discharge pipe of the air pump, and a connection from said retort to the water pipe of the aerating chamber, substantially as described. 9th. A water aerating device comprising a still, a condenser therefor, a storage tank, an aerating chamber therein having its discharge at its lower end, a connection from the condenser to the aerating chamber, a spraying nozzle at the end of said pipe, an air sterilizing device, an air pipe from the sterilizing device to the supply pipe to the aerating chamber, and means for forcing the fluids through the nozzle under pressure, substantially as described. 10th. The combination of a tank, a spraying chamber therein, a discharge pipe terminating in a spraying nozzle in said chamber, air and water supply pipes connecting with the discharge pipe, and means for supplying carbonic acid gas to the spraying chamber, substantially as described. 11th. The combination of a tank, an inner spraying chamber therein having its discharge at the lower end beneath the water level, a spraying nozzle in said chamber, air and water pipes for supplying carbonic acid gas to the spraying chamber, and a pressure relief valve at the top of the tank, substantially as described.

No. 45,640. Food Receptacle.

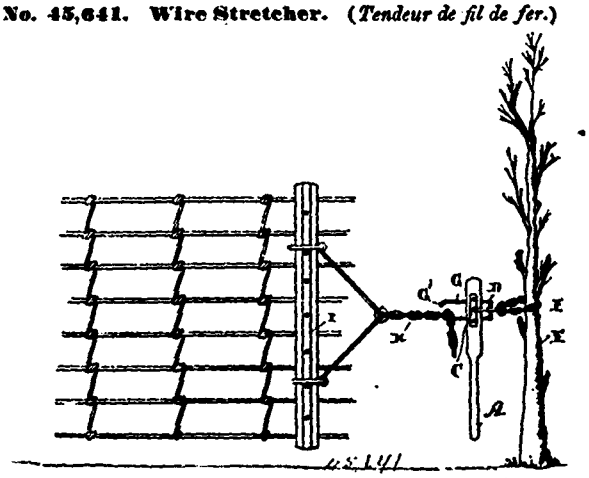
(*Réceptacle pour nourriture.*)



Jean Leembruggen, 9 P. C. Hoofdstraat, Amsterdam, Holland, 27th March, 1894; 6 years.

Claim.—1st. A food or other receptacle of the kind herein referred to having downwardly inclined or screw-like grooves in its upper end adapted to receive the ends of the spring or other device employed for holding down the cover of the receptacle and to cause a gradually increasing pressure on such cover when the said spring or device is turned into its closed position, substantially as herein described. 2nd. A cover for a food or other receptacle of the kind herein referred to, formed at or near the junction of its raised central and rim portions with a circumferential groove or recess adapted to partly receive or securely hold the ring or washer of packing material used for obtaining a gas tight joint between the said cover and an inwardly projecting rib in the receptacle, substantially as herein described. 3rd. A food or other receptacle having an inwardly projecting rib and downwardly inclined or screw-like grooves above said rib, a cover having a raised central portion, an outer rim and a circumferential groove or recess formed at the junction of the said central and rim portions, a ring or washer of packing material held within the said circumferential groove or recess so as to be located between the said rim and rib when the cover is in place, and a downwardly bent metal spring arranged to bear upon the top of said cover and having its end arranged to enter the downwardly inclined grooves in the wall of the receptacle, substantially as herein described for the purposes specified.

No. 45,641. Wire Stretcher. (*Tendeur de fil de fer.*)

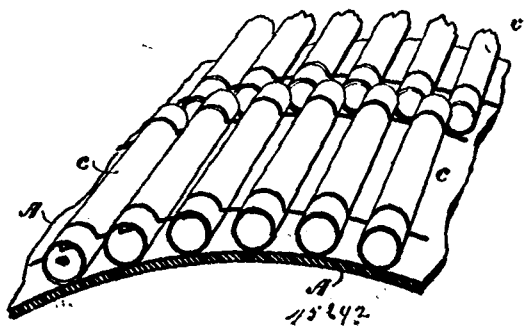


Peter A. Leonard, Erie, Michigan, U. S. A., 27th March, 1894; 6 years.

Claim.—The wire stretcher, composed of the lever having the transverse slot near one end thereof, the clevis pivotally attached to said lever at or near about the centre of said slot, and the two hooked rods extending through said slot and connected at one end and respectively secured between their ends in said slot on opposite sides of the clevis pivot, as and for the purposes set forth.

No. 45,642. Boiler Cover.

(*Chemise pour chaudières à vapeur.*)



Henry Colbeck Michell, Toronto, Ontario, Canada, 27th March, 1894; 6 years.

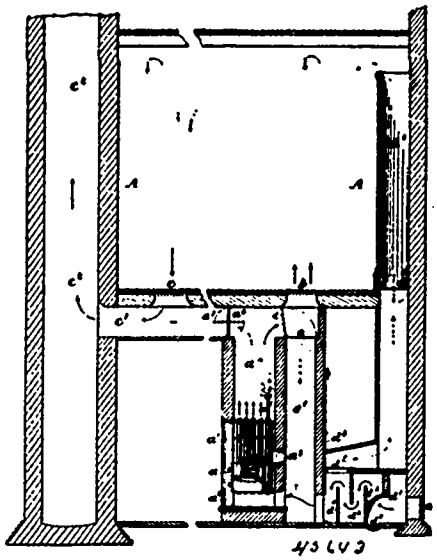
Claim.—1st. As a heat non-conducting covering for boilers and similar structures, a composition having formed in it a plurality of artificially constructed dead air spaces of suitable form, each separate and distinct from one another, the composition with such air spaces being affixed while in a plastic state to the shell of the boiler or structure and allowed to harden, as and for the purpose specified. 2nd. As a heat non-conducting covering for boilers and similar structures, a composition having formed in it a plurality of artificially constructed tubular dead air spaces, the tubes being separated and the ends of such tubes closed by the composition, as and for the purpose specified. 3rd. As a heat non-conducting covering for boilers and similar structures, a composition having formed in it a plurality of artificially constructed tubular dead air spaces having a carbonized lining, the tubes being embedded in the composition, separated from one another, and having the ends of such tubes stopped by the composition, as and for the purpose specified. 4th. The combination with a heat non-conducting composition, of a series of tubes of suitable material strung together parallel with each other, separated having their ends stopped, and covered by the composition, so that each tube is in itself a dead air space, as and for the purpose specified. 5th. The combination with a heat non-conducting composition of a series of tubes of suitable material strung together by means of the string passing through semi-annular slits made across the tubes, the tubes being separated, stopped at the ends, and covered as shown, and for the purpose specified. 6th. The combination with the heat non-conducting composition, of a series of tubes of suitable material strung together, parallel to each other and having a brake joint formed where the ends of each set of tubes abutt each other the tubes being stopped, separated, and covered by the composition, as shown and for the purpose specified. 7th. The combination with the heat non-conducting composition, and a series of tubes strung around the boiler, parallel to each other and separated, stopped at the ends, and covered by the composition, of a second series of tubes the centres of which are diametrically opposite to the centres of the spaces between the inner set of tubes next the shell of the boiler or structure, the second set of tubes being separated from the first, similarly separated as to each other, stopped at the ends, and covered by the composition as the first set, as and for the purpose specified. 8th. The combination with a set of tubes surrounding the boiler or structure, of a composition of a base of powdered mica and a sacharine binding medium suitably reduced to a plastic state and separating, stopping up the ends and covering the tubes, as and for the purpose specified.

No. 45,643. Process of Heating, Drying and Ventilating. (*Procédé pour chauffer, sécher et ventiler.*)

John Langfield, of Manchester, England, 27th March, 1894; 6 years.

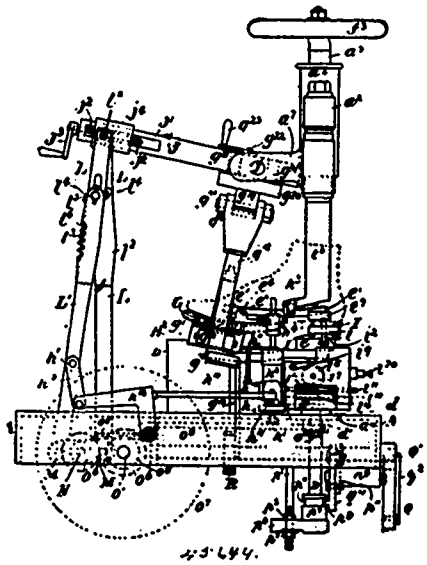
Claim.—1st. The combination with a series of vertical air heating tubes creating a current of heated air with a flue leading to an inlet at the bottom of the chamber or other enclosed space to be heated and an outlet also at the bottom of the said chamber or enclosed space and a vertical shaft carried above the top of the said room for creating an outward current of air from the room without any perceptible draught in the said room, substantially as hereinbefore described. 2nd. The combination with a series of vertical air heating tubes creating a current of heated air, and a high vertical shaft, of

air inlets and outlets flues, passages and dampers, substantially as hereinbefore described, by means of which a room or other enclosed



space can be either supplied with fresh heated air or fresh cold air and thus ventilated.

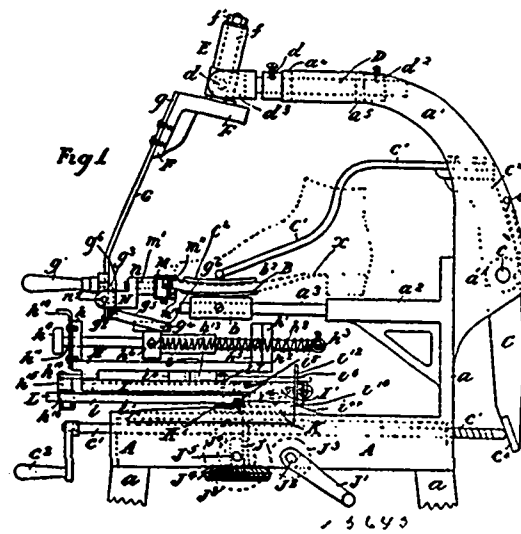
No. 45,644. Boot and Shoe Burnishing Machine.
(*Astic de cordonnerie.*)



Charles Henry Southall, Leeds, England, 27th March, 1894; 6 years.

Claim.—1st. In a boot and shoe burnishing machine, an adjustable last pivoted to a slotted swinging lever carrying the heel bedding piece, said lever being jointed to a spindle interposed between the adjustable last and a sliding sleeve mounted in the frame-work of the machine, said sleeve being operated by a screw armed with a hand wheel, as set forth. 2nd. In a boot and shoe burnishing machine, the combination of a table A, its pillars a, and bridge a^2, an adjustable last E jointed as described to the supporting piece a^6, a sliding sleeve F, a catch f, screws f^2, and f^4, hand wheel f^5, a sole rest B mounted on the table of the machine, adjustable sole supporting piece B^1, and a heel block C mounted on said sole rest, and rod D fixed to the table, as set forth. 3rd. In a boot and shoe burnishing machine, the combination of forepart burnishing tools G mounted upon pins g fixed to a holder g^1, a pin g^3 fixed to a bracket g^4 mounted vertically in axial bearings of a carrier g^5, a bracket g^{11} for jointing said carrier to a supporting lever g^{12}, a bifurcated fixing g^{15}, an adjustable block g^{16}, a screw g^{22}, a rocking lever J, shaft j, and pillars a, as and for the purposes set forth. In a boot and shoe burnishing machine, the combination of the forepart burnishing tools G G and their supporting mechanism, adjusting screws g^{xxx}, slotted plates g^{14}, spiral springs g^{18}, levers g^{6}, sectors R, shafts Q^1, Q^2, and means for actuating them, as set forth. 5th. In a boot and shoe burnishing machine, the combination of the forepart burnishing tools and their supporting mechanism, means for imparting the requisite motion to said tools, and means for adjusting the stroke of said tools, as set forth. 6th. The combination of tools G, G, formed out of a turned disc, the tool supporting mechanism, the levers g^{12}, bifurcated joints g^{18}, blocks g^{20}, screws g^{22}, shafts j, pillars a, table A, sliding blocks j^4 formed in halves, nuts j^5, screws j^2, levers J, adjustable connecting rods formed in two parts L, L^1, gauge plates l^2, winged screws l^4, plates l^5, armed with a projection, cranks M, shaft N, and means for imparting motion to the same, as set forth. 7th. In a boot and shoe burnishing machine, the combination of the waist tools H, mounted as described, upon the table A, and the means for operating them from the connecting rods L, as set forth. 8th. The combination of bifurcated bracket h, mounted on the table A, upright armed with pins h^3, adjustable collar h^4, set screw h^5, bifurcated lever h^6, carrier h^8, tool H, spring h^9, pin h^{10}, plate h^{11}, lever g^{16}, and sectors R, as set forth. 9th. The combination of the waist tool H, the tool supporting mechanism, the sectors R, the levers g^{16}, the adjustable connecting rods h^{10} and L, swivel blocks h^{15}, h^{17}, pins h^{12}, links h^{13}, levers h^{14}, and means for imparting motion to the connecting rods L and to the sectors R, as set forth. 10th. The combination of the heel burnishing tool I, pins i, carriers i^1, sliding pins i^2, collars i^3, brackets i^4, and means described for raising and lowering the tools whilst at work, rocking platform P mounted on the table, rod D, and the means for closing the tools upon the work and imparting motion to the tools, as set forth. 11th. The combination in a boot and shoe burnishing machine, of a rocking platform mounted upon a rod fixed to the table of the machine, a sleeve sliding upon said rod and armed with a short lever, a rod fixed at one end to said short lever and armed at the other end with a slotted lever, bifurcated levers armed with trunnions engaging with the slotted levers, springs attached to said trunnions, bifurcated brackets carrying the heel burnishing tools and their raising and lowering mechanism, as set forth. 12th. In a shoe burnishing machine, the combination of the burnishing tools G, H, I, means for supporting and imparting motion to said tools, with the slotted starting lever Q, the recessed catch lever q^2, shafts Q^1, Q^2, sectors R, lever O^4, clutch O^3, driving pulley O, driving shaft O^1, gearing O^6, O^8, fly wheel O^7, connecting rod O^9, rocking platform P, shaft N, cranks M, adjustable connecting rods L, and levers J, as set forth. 13th. In a boot and shoe burnishing machine, the combination of the table, and its pillars carrying the bridge, the work supporting and clamping mechanism, the burnishing tools arranged around the said work supporting mechanism, and adapted to adjust themselves to the varying curvatures of the edges of the sole and heel, and the mechanism described for simultaneously operating the said tools, as set forth.

No. 45,645. Machine for Paring the Edges of Boot and Shoe Soles. (*Machine pour parachever les semelles des chaussures.*)

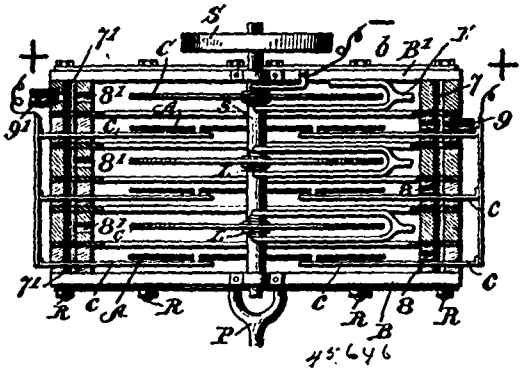


Charles Henry Southall and Robert Heap Southall, both of Leeds, England, 27th March, 1894; 6 years.

Claim.—1st. In a boot and shoe edge paring machine, a paring knife mounted in a carrier pivoted to a pendant lever suspended from a laterally adjusted bar capable of turning its bearing, said lever being coupled to the bar by a universal joint and its motion controlled by a slide and carriage mounted on a table below the work, and mechanism as described for locking the carriage during one portion of its transverse, releasing it during another stage, and again locking during the completion of the same. 2nd. The com-

bination of a knife M, fixed to block m^2, mounted in carrier m, block m^4, bolt m^7, plate m^9, welt protector m^{10}, adjustable sole guide m^{17}, and paring regulator m^{20}, all substantially as set forth. 3rd. The combination, in a boot and shoe edge paring machine, of a knife M, mounted in a carrier and suspended from an adjustable bar as described, said carrier having a combined "bit" knife and welt protector attached to its plate m^9, substantially as shown and for the purposes specified. 4th. The combination, in a boot and shoe edge paring machine, of a knife M, holder m, plates m^9, m^{10}, seat protector m^{17}, paring regulator m^{20}, lever O, rod O^1, pin O^5, and spring O6, all substantially as set forth. 5th. The combination, in a boot and shoe edge paring machine, of a knife fixed in a carrier, a sole guide adjustably mounted in said carrier, a second carrier having an axial bearing, in which the spindle of the first-named carrier is mounted, a pendant lever to which the second carrier is jointed, a handle fixed to said pendant lever, a universal joint consisting of a fixing to which the pendant lever is attached, and an axial bearing, and a bar adjustably mounted in the framework of the machine, as set forth. 6th. The combination, in a boot and shoe edge paring machine, of the table A, slide I, carriage H, cam lever L, and mechanism for actuating the same, bar h^2, cross-head h^3, springs h^4, sleeve h^6, links g^3, g^4, g^5, pendant lever G, handle g^1, carrier N, knife M, and its carrier, fixing F, axial bearing E, and adjustable bar D, all as set forth. 7th. In a boot and shoe edge paring machine, the combination of a carriage armed with a semi-circular piece, a slide having a recess in its slotted guide and armed with a stop and circular centre-piece, the locking and releasing mechanism, a runner mounted on a pendant pin, a slotted cam lever, a cam plate and mechanism, as described, for intermittently reciprocating the slide and rotating the carriage, for the purposes specified. 8th. The combination, in a boot and shoe edge paring machine, of carriage H, mounted upon slide I, so as to revolve thereon, bar h^2, sliding in bearings k k^1, catch h^{10}, cross-head h^3, sleeve h^6, springs h^4, and semi-circular piece h^{13}, as set forth. 9th. The combination in a boot and shoe edge paring machine, of a slide mounted upon the table of the machine and having a slotted centre and recessed guide, a locking piece working in said recessed guide, a lever mounted on the top of said slide, a tappet-piece, an incline mounted on said table, a circular centre-piece armed with a stop, and a carriage armed with a semi-circular piece, for the purposes specified. 10th. The combination, in a boot and shoe edge paring machine, of the table A, uprights a^1, boss a^2, bar a^3, plate B, boss b, double ended lever C, bar C^1, bedding piece c^4, jointed to said bar C^1, and mechanism substantially as described for adjusting the bedding piece to its work, as set forth. 11th. In a boot and shoe edge paring machine, the combination of a table and its uprights carrying the adjusting bar, the work supporting and clamping mechanism, the knife, its carriers and pendant lever adapted to adjust itself to the varying curvatures of the sole, the carriage, slide, and mechanism for actuating and locking and releasing the same, as set forth.

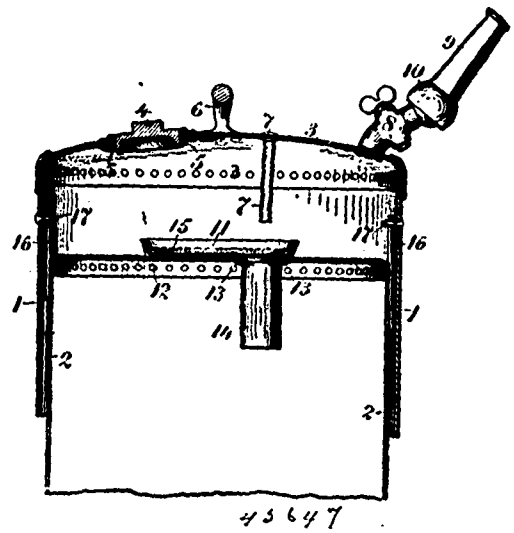
No. 45,646. Process of and Apparatus for the Production of Nickel, &c. (*Procédé et appareil pour la production du nickel.*)



Carl Hoepfner, Giessen, Germany, 27th March, 1894; 6 years.

Claim.—1st. In the electrolytical production of metals, and particularly of the metals herein described, the improvement, which consists in simultaneously decomposing a solution of such metals and a solution of a suitable chlorid at the negative and positive poles respectively, and maintaining the negative pole in motion during decomposition, for the purposes set forth. 2nd. In the electrolytical production of metals, as nickel, cobalt and copper, the improvement, which consists in simultaneously decomposing a solution thereof, and a solution of a suitable chlorid at the negative and positive poles respectivety, maintaining the negative pole in motion during decomposition, and suitably separating said poles, whereby the positive is dissolved without contaminating the metal deposited at the negative pole, substantially as set forth. 3rd. In an electrolytic apparatus, a sheet or plate like electrode, and a movable shaft adapted to impart motion to said electrode, said shaft having its axis of motion out of contact with the electrolyte, for the purposes set forth. 4th. In an electrolytic apparatus, a sheet or plate like electrode, and a movable shaft on which said electrode is mounted, said shaft having its axis of rotation out of contact with the electrolyte, for the purposes set forth. 5th. In an electrolytic apparatus, discoidal electrodes, a shaft on which said electrodes are mounted, said shaft out of contact with the electrolyte, and means for imparting motion to the shaft, for the purposes set forth. 6th. In an electrolytic apparatus, discoidal electrodes, a revoluble shaft on which said electrodes are mounted, and spacing sleeves on said shaft between the electrodes, said spacing sleeves constructed of a conductive material, for the purposes set forth. 7th. In an electrolytic apparatus, comprising alternate anode and cathode cells, the combination with the last named cells of discoidal revoluble electrodes, and means substantially such as described, for maintaining their surfaces smooth. 8th. In an electrolytic apparatus, the combination with the cathode cells, of discoidal electrodes, a shaft on which said electrodes are mounted, conductive spacing sleeves contacting with the electrodes, and a trailing contact for one of said sleeves, for the purposes set forth. 9th An electrolytic apparatus, comprising a series of triangular cell frames, a suitable diaphragm interposed between each two frames, and ducts for the circulation of the electrolyte through the cells, in combination with triangular end boards and tie rods connecting the same, substantially as and for the purposes set forth.

No. 45,647. Hand Fire Extinguisher.
(*Extincteur d'incendie à main.*)



Daniel D. Wilson, Toronto, Ontario, Canada, 27th March, 1894; 6 years.

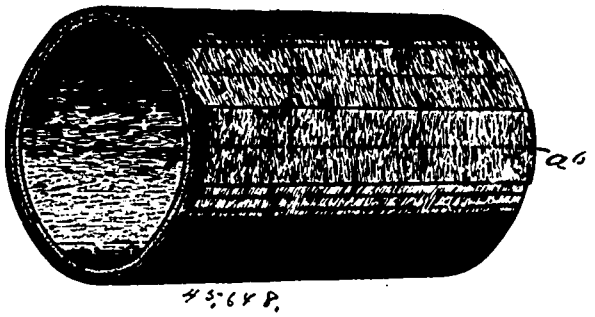
Claim.—1st. In a hand fire extinguisher, the combination of the outer metallic cylinder, an inner metallic cylinder contained and fitted freely within said outer cylinder, and guide rods on opposite sides of said inner cylinder and engaged by eyes on the outer cylinder. 2nd. In a hand fire extinguisher, the inner metallic cylinder having a central opening in its head in which is laid a plate of glass to separate the liquids from the soda and the liquids from one another normally. 3rd. In a hand fire extinguisher, the combination of the inner metallic cylinder having a central opening in its head in which is laid a plate of glass, a ring formed in said opening to support an acid bottle, a stud in the head of the outer cylinder, and the outer metallic cylinder having the inner cylinder fitted freely within. 4th. In a hand fire extinguisher, the combination of the inner metallic cylinder having a central opening in its head, a rest or support in said opening to support a plate of glass, a ring in said opening to support a bottle, a stud in the head of the outer cylinder, guide rods on opposite sides of the inner cylinder, eyes on the interior of the outer cylinder and engaging said guide rods, and the outer cylinder having the inner cylinder fitted freely within and allowing vertical movement of said inner cylinder.

No. 45,648. Method of Manufacturing Hollow Wooden Articles, &c. (*Méthode de fabrication d'objets creux en bois, etc.*)

Carl Wittkowsky, Berlin, Prussia, Germany, 27th March, 1894; 6 years.

Claim.—1st. The method of manufacturing hollow wooden articles, or the shell or mantel for the same, characterized by uniting crossed veneers in a curved position by means of a water-tight cementing-medium, substantially as and for the purpose hereinbefore set forth. 2nd. The method of manufacturing hollow wooden articles, or the shell or mantel for the same, characterized by uniting crossed veneers in a curved position by means of a water-tight cementing-medium, the said veneers being exposed during their

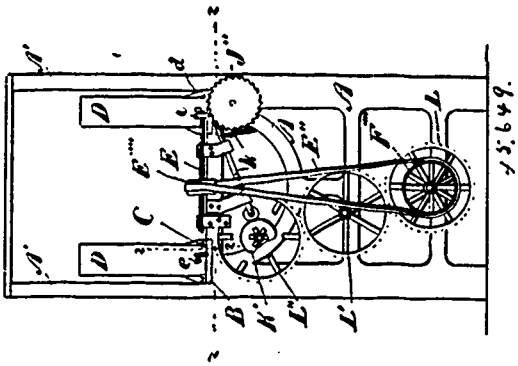
union to pressure and heat, substantially as and for the purpose hereinbefore set forth. 3rd. The method of manufacturing hollow wooden articles, or the shell or mantel for the same, characterized



by uniting crossed veneers in a curved position by means of a water-tight cementing-medium, the grains of the outer veneer or veneers running parallel to the curvature of the latter themselves, the grains of the remaining veneer or veneers running parallel to the longitudinal axis of the article to be produced, the said veneers being exposed during their union to pressure and heat, substantially as and for the purpose hereinbefore set forth. 4th. The method of manufacturing hollow wooded articles, characterized by uniting crossed veneers between curven press-pieces by means of a water-tight cementing medium, substantially as and for the purpose hereinbefore set forth. 5th. The method of manufacturing hollow wooden articles, characterized by uniting crossed veneers between heated curved press-pieces by means of a water-tight cementing-medium, substantially as and for the purpose hereinbefore set forth. 6th. The method of manufacturing hollow wooden articles, characterized by uniting crossed veneers between heated curved press-pieces by means of a water-tight cementing-medium, the grains of the outer veneer or veneers running parallel to the curvature of the press-pieces, the grains of the remaining veneer or veneers running normal to those of the other ones, substantially as and for the purpose hereinbefore set forth. 7th. The method of manufacture hollow wooden articles, characterized by uniting crossed veneers between curved hollow press-pieces by means of a water-tight cementing-medium, the grains of the outer veneer or veneers running parallel to the curvature of the press-pieces, the grains of the remaining veneer or veneers running normal to those of the outer ones, said hollow press-pieces being heated by hot air or the like, whilst the veneers are pressed between them, substantially as and for the purpose hereinbefore set forth. 8th. The method of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in uniting crossed veneers with each other in a curved position by means of a water-tight cementing-medium, and in uniting the opposite rims or edges of the rolled veneering-cylinder also by means of said cementing-medium, substantially as and for the purpose hereinbefore set forth. 9th. The method of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in uniting crossed veneers with each other between curved press-pieces by means of a water-tight cementing-medium, and in uniting the opposite rims or edges of the rolled veneering-cylinder also between press-pieces by means of said cementing medium, the press-pieces being heated in either case, substantially as and for the purpose hereinbefore set forth. 10th. The mathod of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in uniting crossed veneers with each other between hollow curved press-pieces by means of a water-tight cementing medium, and in uniting the opposite rims or edges of the rolled vencering, also between curved press-pieces by means of said water-tight cementing medium, the said press-pieces being adapted to be heated by hot air or the like, substantially as and for the purpose hereinbefore set forth. 11th. The method of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in, first, uniting crossed veneers with each other, then uniting the opposite sloping rim or edges of the rolled veneering cylinder, and finally covering the line of junction by a single, double or multiple strip of veneer, all unions being made b means of a watertight cementing medium, substantially as and for the purpose hereinbefore set forth. 12th. The method of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in first uniting crossed veneers with each other, then uniting the opposite sloping rims or edges of the rolled veneering cylinder, and finally covering the line of junction by a single, double or multiple strip of veneer, all unions being made by means of a watertight cementing medium, and under the simultaneous influence of pressure and heat, substantially as and for the purpose hereinbefore set forth. 13th. The method of manufacturing wooden tubes, vessels, barrels or other hollow wooden articles, consisting in uniting crossed veneers with each other in a curved position by means of a water-tight cementing medium, and in uniting the opposite rims or edges of the rolled veneering cylinder by the said medium, said rims or edges being sloping, and being held together during the process by a pliable plate provided with pins or other projections, the latter catching into corresponding holes or cavities near the rims of the article, substantially as and for the purpose hereinbefore set forth. 14th. A press for practising the method characterized by the foregoing claims, having curved press-pieces b, b^1, b^2, adapted to be heated by hot air or the like, substantially as and for the purpose hereinbefore set forth. 15th. A press for practising the method characterized by the foregoing claims, having two pairs of press pieces, the space between each pair being open at one side, substantially as and for the purpose hereinbefore set forth. 16th. A press for practising the method characterized by the foregoing claims, having two pairs of press-pieces arranged symmetrically at two opposite sides of the frame, the space between each pair being open at one side, substantially as and for the purpose hereinbefore set forth. 17th. A press for practising the method characterized by the foregoing claims, having two pairs of projecting press-pieces n^1, n^5 and n^2, n^4, arranged symmetrically at two opposite sides of the moving mechanism, the space between the superposed parts of each pair being open at one side, substantially as and for the purpose hereinbefore set forth. 18th. As an article of manufacture, wooden tube, vessel, barrel or other hollow wooden article, consisting of crossed veneers united by a watertight cementing medium, the opposite rims or edges of the rolled shell or mantel of the article being also united by said medium, substantially as and for the purpose hereinbefore set forth. 19th. As an article of manufacture, a wooden tube, vessel, barrel or other hollow wooden article, consisting of several layers of crossed veneers united by a watertight cementing medium, the opposite rims or edges of the rolled shell or mantel of the article being sloping and being also united by said medium, the outer line of junction being covered by a single, double or multiple strip of veneer, substantially as and for the purpose hereinbefore set forth.

No. 45,649. Match Racking Machine.

(Râtelier de trempage pour allumettes.)



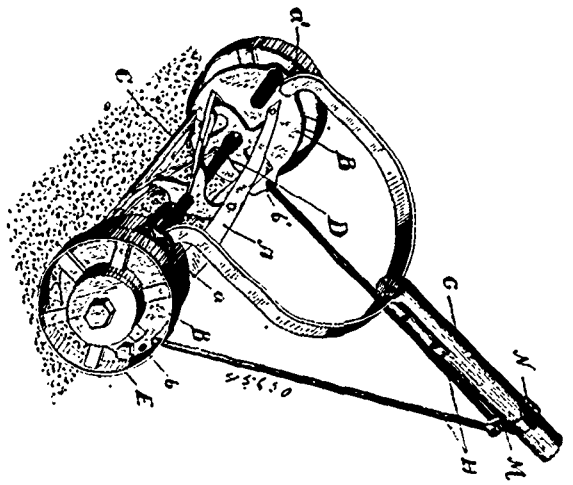
John D. Mantion, Hull, Quebec; Charles D. Chitty and Edwin S. Leetham, both of Ottawa, Ontario, all in Canada, 30th March, 1894; 6 years.

Claim.—1st. In a match racking machine, the combination of a plate B, having a series of transverse grooves having the margins between them bevelled to a knife edge at the top, a table or stand, suitably framed, to one edge of which said plate is secured, two bed-rails secured to the longitudinal margins of said plate, a hopper held slidingly on said rails, a shaft journalled opposite the end of said hopper and provided with a crank at the end connected to the end of the hopper by a pitman, a reciprocating carriage G, held slidingly to the table and moving in the direction of the grooves in the plate B, and provided with pins or fingers g, adapted to enter said grooves, a double lever, G^1, having slotted ends, one connected to said carriage and the other to a crank in the driving shaft, two vertical guide bars at the rear of the plate B, rigidly secured to the table, a frame H, adapted to slide in said guides provided with means of holding a rack removably and with rack teeth adapted to gear into pinions on a shaft, a shaft J^1, journalled below the table, and carrying pinions J, gearing into said racks and provided with ratchet wheels J^2, and keeper wheel J^3, a spring keeper J^4, engaging said keeper wheel, a pawl K, engaging said ratchet wheel, a cam K^1, actuating said pawl once for each double stroke of the carriage G, means for connecting said cam with the driving shaft, a driving shaft with crank actuating the lever moving the carriage, and suitable connections with the cam K^1, and shaker shaft E, and provided with starting and stopping motion and a rack I consisting of three parallel plates, of which the central one is adjustably and the external one rigidly connected, and all provided with a series of rows of perforations registering with the grooves in the plate B, substantially as set forth. 2nd. In a match-racking machine, the combination of a table or stand suitably framed, two plates B, secured to the margins of the top opposite each other, and provided with a series of transverse grooves b, having the margins between them bevelled off to a knife-edge, and having the lower part adapted to hold a match freely, a slide-bed on the top of each plate, a hopper held slidingly to each slide-bed, means of giving a rapid

shaking motion to each hopper, the carriage G, held slidingly to the table and made to travel between the said plates in the direction of the grooves and provided at each side with a series of fingers adapted to enter said grooves, means of giving a reciprocating motion to said carriage, a frame H, held vertically, sliding at the rear of each plate and hopper, provided with rack motion for raising and lowering the same, and with means for holding a rack removably in position, a rack adapted to receive and hold the matches as pushed out of the plate B, means for giving intermittent motion to the rack-frame and keeping the same steady in the interval, and a driving shaft for giving motion to the various movements provided with starting and stopping motion, substantially as set forth. 3rd. In a match-racking machine, the combination of a table or stand suitably framed, a plate B, secured thereto near the edge and provided with a series of transverse grooves, each capable of holding a match-splint, bed rails C, C^1, secured on the longitudinal margins of said plate, a hopper D held slidingly to said rails, a shaft E journalled to the stand at a right angle to the direction of the movement of said hopper, a crank at the end of said shaft, a pitman connecting said crank with the end of said hopper, and means of operating said shaft, substantially as set forth. 4th. In a match-racking machine, the combination of a plate B having a series of transverse grooves *b* with the margins between them bevelled off at the top to form a knife and the lower square portion capable of holding a match-splint freely, two bed-rails C and C^1 placed longitudinally at the margins of said plate and a hopper D held slidingly on said rails and provided with partitions at intervals, and means for giving a reciprocating motion to said hopper, substantially as set forth. 5th. In a match-racking machine, a plate having a series of transverse grooves having their upper edges bevelled off so that the margin between two of them forms a knife edge at the top and the lower square portion of each capable of holding a match-splint freely, substantially as set forth. 6th. In a match-racking machine, the combination of a table or stand suitably framed, a plate B secured thereto near the edge and provided with a series of transverse grooves capable of holding a match, a carriage G held slidingly to said table and having a reciprocating motion in the direction of the grooves of the plate and provided with pins or fingers adapted to enter said grooves, substantially as set forth. 7th. In a match-racking machine, the combination of a table or stand suitably framed, two bars A, extending upwards above the top from opposite corners and each having a vertical groove in the side facing the opposite bar, a frame H having its uprights *h* provided with pins h^{11}, engaging said grooves and provided with rack-teeth h^1, and provided with means of holding a frame removably, pinions J gearing into said racks, a shaft J^1 journalled below the table top and carrying said pinions and a ratchet wheel and keeper wheel, substantially as set forth. 8th. In a match-rack, the combination of three parallel plates each perforated with a registering series of rows of holes each capable of receiving a match and allowing it vertical play therein, frame pieces connecting the two external plates rigidly together and provided with grooves on their internal faces to hold the central plate slidingly, and a cam pivoted to the top piece engaging the central plate and adapted to raise the same and lock it in position, substantially as set forth.

No. 45,650. Lawn Mower.

(*Faucheuse pour pelouses.*)

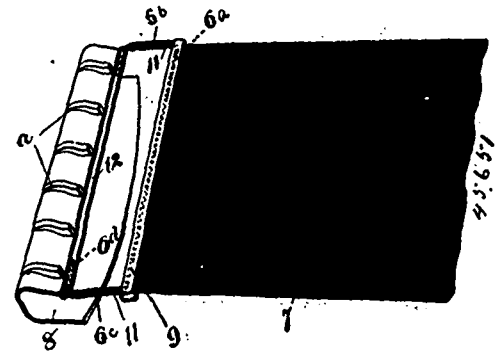


Robert D. Robbins, Port Perry, Ontario, Canada, 30th March, 1894; 6 years.

Claim.—1st. In a lawn mower, a rotary knife carried by and deriving motion from the spindle of the ground wheels, substantially as and for the purpose specified. 2nd. In a lawn mower, a rotary knife carried by and deriving motion from the spindle of the ground wheels, in combination with a frame carrying the throat piece or stationary knife, substantially as specified. 3rd. In a lawn mower, a rotary knife adapted to be revolved on a movable spindle, and in the same direction as the spindle, so as to minimize friction, substantially as specified. 4th. In a lawn mower, a rotary knife carried by and deriving motion from the spindle of the ground wheels, in combination with a frame carrying the throat piece or stationary knife, which frame is journalled on the said spindle and is rigidly connected with the handle, substantially as and for the purpose specified. 5th. In a lawn mower, a rotary knife carried by and deriving motion from the spindle of the ground wheels, in combination with a frame carrying the throat piece or stationary knife journalled on the said spindle and rigidly, but adjustably, connected with the handle, substantially as and for the purpose specified. 6th. In a lawn mower, the combination of the rotary knife A, carried by and deriving motion from the spindle F, of the ground wheels E, the frame B, journalled on the said spindle and carrying the throat piece or stationary knife C, the handle C, pivoted to the said frame, and the braces H, pivoted at one end to the frame B, and adjustably connected at the other to the said handle, substantially as and for the purpose specified. 7th. In a lawn mower, a ground wheel carrying the clutch ratchet, in combination with a nut holding the ground wheel on its spindle and carrying a dog to engage with the said ratchet, substantially as and for the purpose specified. 8th. In a lawn mower, the spindle D, on which is journalled the internally geared disc I, the cross-piece J, rigidly attached to the spindle D, a pinion K, journalled on the said cross-piece and meshing with the internally geared disc, in combination with the rotary knife A, having a pinion L, formed on its hub, which pinion meshes with the pinion K, substantially as and for the purpose specified. 9th. In a lawn mower, the spindle D, on which is journalled the internally geared disc I, the cross-piece J, rigidly attached to the spindle D, pinions K, K^1, journalled on the said cross-piece and meshing with the internally geared disc, in combination with the rotary knife A, having a pinion L, formed on its hub, which pinion meshes with the pinions K, K^1, substantially as and for the purpose specified. 10th. In a lawn mower, the combination of the spindle D, on which is journalled the internally geared disc I, forming part of the frame B, carrying the throat piece or stationary knife C, the cross-piece J, rigidly attached to the spindle D, a pinion K, journalled on the said cross-piece and meshing with the internally geared disc, the rotary knife A, having a pinion L, formed on its hub meshing with the pinion K, and the handle C, rigidly connected to the frame B, substantially as and for the purpose specified. 11th. In a lawn mower, the combination of the spindle D, on which is journalled the internally geared disc I, forming part of the frame B, carrying the throat piece or stationary knife C, the cross-piece J, rigidly attached to the spindle D, a pinion K, journalled on the said cross-piece and meshing with the internally geared disc, the rotary knife A, having a pinion L, formed on its hub meshing with the pinion K, and the handle C, rigidly, but adjustably connected to the frame B, substantially as and for the purpose specified. 12th. In a lawn mower, the combination of the frame B, pivoted handle G, braces N, spring band M, pivoted link N, hook O, and pivoted eccentric P, substantially as and for the purpose specified. 13th. In a lawn mower, the clip for connecting the braces to the handle, comprising the following elements:—the spring band M, pivoted link N, hook O, and pivoted eccentric P, substantially as and for the purpose specified.

No. 45,651. Duplicating Copying Book.

(*Livre à copier duplicata.*)

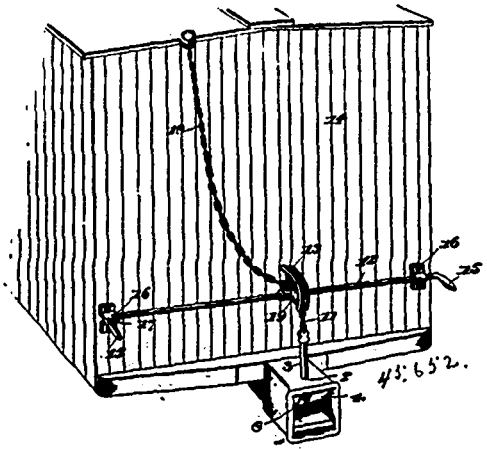


Hermon Henry Cook, assignee of William H. Rodden, both of Toronto, Ontario, Canada, 30th March, 1894; 6 years.

Claim.—1st. In a copying book, the combination of a series of originals and stubs, the stubs being suitably bound together, a swinging frame comprised of a substantially rectangular shaped piece of metal, having one of its sides partially cut away to form two points, which are adapted to detachably secure the said frame to the book, a transfer sheet secured to the said frame and adapted to be placed between the originals and duplicates, said frame arranged to carry the transfer sheet clear of the said stubs in order that the said transfer sheet will lie flat between the original and its

respective duplicate, substantially as described. 2nd. In a copying book, the combination of a series of originals and stubs, the stubs being suitably bound together, a swinging frame comprised of a substantially rectangular-shaped piece of metal, pivotally secured to the book, a clip sliding on the sides of the frame and adapted to bear against the front of the said frame, means for holding the clip against the front of the frame, a transfer sheet detachably secured *to the frame by means of the said clip, and adapted to be placed* between the originals and duplicates, said frame arranged to carry the transfer sheet clear of the said stubs, in order that the transfer sheet will lie flat between the original and its respective duplicate, substantially as described. 3rd. In a copying book, the combination of a series of originals and stubs, the stubs being suitably bound together, a temporary binder holding the head of the said book, said temporary binder having a rib formed along one of its edges adapted to bear upon the said book and prevent its withdrawal from the temporary binder, a swinging frame comprised of a substantially rectangular-shaped piece of metal, having one of its sides partially cut away to form two points which are adapted to enter recesses in the said temporary binder, and detachably secure the swinging frame to the temporary binder, a transfer sheet secured to the said frame, and adapted to be placed between the originals and duplicates, said frame arranged to carry the transfer sheet clear of the stubs in order that the transfer sheet will lie flat between the original and its respective duplicate, substantially as described. 4th. In a copying book, the combination of a series of originals and stubs, the stubs being suitably bound together, a temporary binder holding the head of said book, said temporary binder having a rib formed along one of its edges adapted to bear upon the said book and prevent its withdrawal from the temporary binder, a swinging frame comprised of a substantially rectangular shaped piece of metal, having one of its sides partially cut away to form two points which are adapted to enter recesses in the said temporary binder, and detachably secure the swinging frame to the temporary binder, a transfer sheet secured to the said frame and adapted to be placed between the originals and duplicates, said frame arranged to carry the transfer sheet clear of the stubs in order that the transfer sheet will lie flat between the original and its respective duplicate, a clip sliding upon the sides of and adapted to bear against the front of the said frame, springs coiled on each of the sides of the said frame and adapted to press the said clip against the front of the said frame to detachably secure the transfer sheet to the frame, substantially as described.

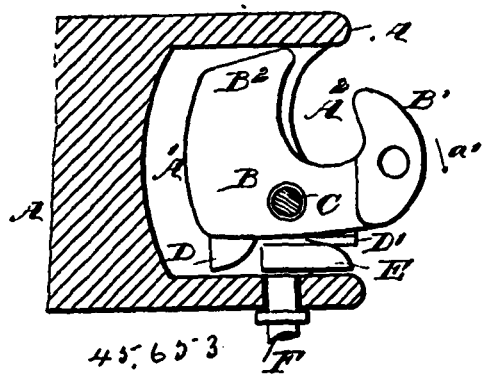
No. 45,652. Car Coupler. (*Attelage de chars.*)



Charles W. Patton, Ohio Falls, Indiana, J. Ramsey and Thomas J. Ramsey, both of Shelbyville, Kentucky, all in the U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In a car coupling, the combination of a draw-head having a coupling-pin perforation, and a combined pin support and link holder arranged within the draw-head and hinged to the top thereof and inclining downward from front to rear, and provided with an opening to receive a coupling-pin, and having adjacent to the opening a projecting support adapted to receive the lower end of a coupling-pin, substantially as described. 2nd. In a car coupling, the combination of a draw-head provided with a coupling-pin perforations, and a combined pin support and link holder arranged within the draw-head and inclining downward from front to rear and hinged to the top of the draw-head, and provided with an opening to permit the passage of a coupling-pin, and having at the bottom of the opening an upward extending projection, which is transversely curved and which is adapted to receive the lower end of a coupling-pin for supporting the same, substantially as described. 3rd. In a car coupling, the combination of a car, a draw-head having a coupling-pin perforation, a coupling-pin, a shaft journalled on the car and arranged horizontally, and provided at its ends with handles and capable of a limited longitudinal movement, a bearing 16 receiving the rock-shaft and having a notch or shoulder to be engaged by one of the handles thereof, a segment mounted on the rock-shaft and connected with the coupling-pin, and a chain extending upward and laterally from the segment to the top of the car to enable the segment to be swung upward, and the shaft to be moved longitudinally, substantially as and for the purpose described.

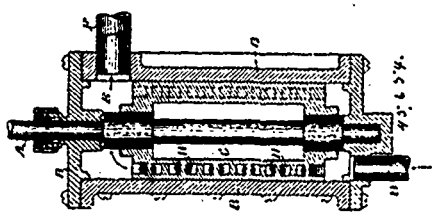
No. 45,653. Car Coupler. (*Attelage de chars.*)



John Jacob Schairer, Clint, Frank E. Hunter and John W. Duffus, both of El Paso, all of Texas, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. A car coupling, comprising a knuckle pivoted in the draw-head and provided with cam surfaces on opposite sides of its pivot, and an arm mounted to swing and adapted to engage the said cam surfaces, to open and close the knuckle and to lock the same in either an open or closed position, substantially as shown and described. 2nd. A car coupling provided with a draw-head formed in its front end with a pocket cut out at the front edge at top and bottom, to permit an up and down movement of the coupling parts, and to prevent accidental sidewise uncoupling, substantially as shown and described. 3rd. A car coupling, comprising a knuckle pivoted on a vertically disposed pivot and provided with a coupling-head and a curved back, cam surfaces formed on the front side of the said knuckle and on opposite sides of the pivot, and an arm mounted to swing and adapted to engage the said cam surfaces, to open and close the knuckle and to lock the same in either an open or closed position, substantially as shown and described. 4th. A car coupling, comprising a knuckle pivoted on a vertically-disposed pivot and provided with a coupling-head and a curved back, cam surfaces formed on the front side of of the said knuckle and on opposite sides of the pivot, an arm mounted to swing and adapted to engage the said cam surfaces, to open and close the kuuckle and to lock the same in either an open or closed position, and a handled shaft mounted to turn and carrying the said arm, substantially as shown and described. 5th. A car coupling provided with an approximately U-shaped knuckle mounted to turn and having one end formed with a coupling-head and the other end with a curved back, the front side of the said knuckle being provided with cam surfaces, substantially as shown and described.

No. 45,654. Rotary Engine. (*Machine rotative.*)

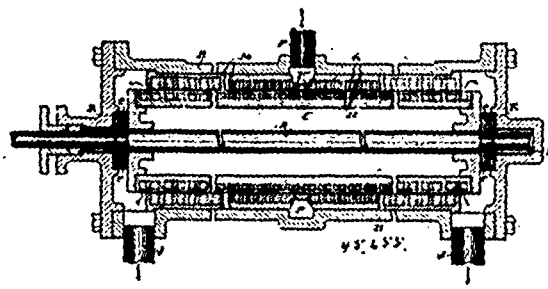


The Consolidated Car Heating Company, assignees of James F. McElroy, all of Albany, New York, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In a rotary engine, the combination with a shell provided with a steam inlet port, about midway between its ends, and a steam exhaust port at each end, of a driving shaft mounted to rotate in said shell, a cylinder keyed to said shaft within said shell, two or more series of steam passage ways cored out of said cylinder and extending from the centre of the circumference of said cylinder to each end, with a lining conforming to and secured in contact with the interior surface of said shell, with steam passage-ways cored out of said lining corresponding in width and direction to the passage-ways in said cylinder, substantially as described and for the purpose set forth. 2nd. In a rotary engine, the combination with a shell provided with a steam inlet port about midway between the ends of the shell, and a steam exhaust port at each end, a driving shaft mounted to rotate in said shell, a cylinder secured on said shaft in

said shell provided with two or more lateral series of U-shaped steam passage-ways cored out from the periphery of said cylinder, a lining conforming to and secured in contact with the interior surface of said shell, two or more lateral series of U-shaped steam passage-ways cored out of said lining, a recess cored out of said lining communicating with said steam inlet port, all arranged in such a manner that the steam passes in a continuous channel formed along the surface of the cylinder parallel to its axis from the point of its entrance toward each end of the cylinder, in which the curves in one direction of the channel lie in the revolving cylinder, and the curves in the opposite direction lie in the stationary lining and exhausting through the ports at each end of the engine, substantially as described and for the purpose set forth. 3rd. In a rotary engine, the combination of a shell provided with a steam inlet port about midway between the ends of the shell, a steam exhaust port at each end of the shell, a driving shaft mounted to rotate in said shell, a cylinder secured in said shaft in said shell, said cylinder provided with steam passage-ways cut into its periphery, said shell provided with steam passage-ways registering with the passage-ways in the cylinder, so arranged that a steam cushion may be formed for the purpose of supporting the weight of the revolving cylinder by restricting the flow of the steam, substantially as described and for the purpose set forth.

No. 45,655. Rotary Engine. (*Machine rotative.*)



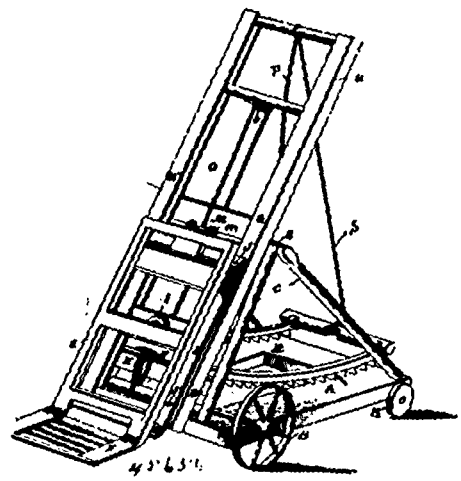
The Consolidated Car Heating Company, assignee of James F. McElroy, all of Albany, New York, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In a rotary engine, the combination, with a stationary shell, provided with a steam inlet chamber and a steam exhaust chamber, of a driving shaft mounted to rotate in said shell, a cylinder keyed to said shaft within said shell, two or more series of disconnected U-shaped steam passage-ways cored out of the interior wall of said shell corresponding in width and direction to the passage-ways in said cylinder, substantially as described and for the purpose set forth. 2nd. In a rotary engine, the combination, with a stationary shell provided with a steam inlet chamber and a steam exhaust chamber, a driving shaft mounted to rotate in said shell, a cylinder secured on said shaft in said shell and provided with two or more series of U-shaped steam passage-ways cored out from the periphery of said cylinder, the sides of each of said passage-ways being at right angles to a radius of the cylinder passing through the bottom of the U-shaped passage-ways, two or more lateral series of U-shaped steam passage-ways cored out of the interior wall of said shell, said passage-ways in the shell corresponding to and coinciding alternately with the passage-ways in the cylinder in such a manner that steam passes in a continuous channel formed along the surface of the cylinder parallel with its axis, substantially as described and for the purpose set forth. 3rd. In a rotary engine, the combination with a stationary shell, a steam inlet chamber, a steam exhaust chamber, a driving shaft mounted to rotate in said shell, a cylinder secured on said shaft in said shell, said cylinder provided with steam passage-ways cut into its periphery, said shell provided with steam passage-ways cut into its interior wall, arranged in such a manner at certain position of the cylinder continuous channels are formed along the surface of the cylinder parallel to its axis, in which the curves in one direction of the channel lie in the revolving cylinder, and the curves in the opposite direction lie in the stationary shell, substantially as described and for the purpose set forth.

No. 45,656. Hand Truck. (*Camion.*)

Emilio Cardarelli and George W. Dick, both of Sumter, South Carolina, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In a hand truck, a tilting rectangular frame having opposite guide sides, a sliding platform arranged on said frame and having rollers moving in the guides, means for automatically adjusting said sliding platform and a turning lifting table mounted on said sliding platform, substantially as set forth. 2nd. In a hand truck, the truck frame, a rectangular lifting frame pivoted on top of the truck frame, a platform mounted to slide on said lifting frame, a single adjusting cord attached at its extremities to the sliding platform and to one end of the lifting frame respectively, suitably arranged guide pulleys for said cord, and a turning lifting table mounted on the sliding platform, substantially as set forth. 3rd. In a hand truck, the truck platform, a rectangular tilting lifting frame pivoted on top of said platform, a platform mounted to slide on the lifting frame, a guide pulley arranged at one lower end of the truck frame, a corresponding guide pulley arranged on the lifting frame near one



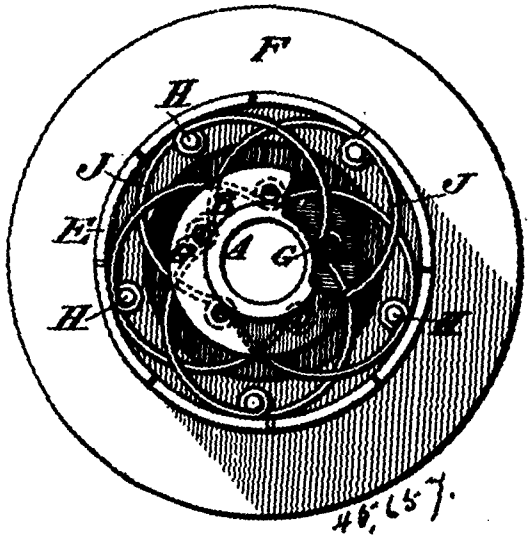
end, a single adjustable adjusting cord passing over said guide pulleys and attached at one end to one end of the sliding platform and at its other end to one end of the lifting frame, and a lifting table mounted on said sliding platform, substantially as set forth. 4th. In a hand truck, the truck platform, a rectangular tilting lifting frame pivoted on top of said platform and having opposite side guides, means for locking said frame in an elevated position, an automatically sliding platform arranged on the lifting frame and having supporting rollers moving in said guides, and a combined turning and tilting lifting-table mounted on the sliding-platform, substantially as set forth. 5th. In a hand-truck, the combination of a tilting lifting-frame, an automatically sliding-platform mounted on said lifting-frame and having raised end pieces, and a rectangular lifting-table centrally pivoted and swivelled to said sliding platform and adapted to tilt between the raised end pieces, substantially as set forth. 6th. In a hand truck, a tilting lifting frame, an automatically sliding platform mounted on said lifting frame, a turning and tilting lifting-table swivelled and pivoted centrally to the sliding platform and provided with an off-standing end board, and a lock arranged at one end of the table, substantially as set forth. 7th. The combination with a supporting frame and a platform mounted thereon, of a turning and side tilting table centrally swivelled and pivoted to said platform, substantially as set forth. 8th. In a hand-truck, the truck-platform, a lifting-frame pivotally mounted on the platform and having guides, a platform arranged to slide in said guides, an adjusting device for the sliding platform, and means for automatically locking the lifting-frame in a horizontal position, substantially as set forth. 9th. In a hand-truck, the truck platform, the standards, a transverse catch-bar connecting said standards, a lifting-frame pivotally mounted between said standards, a weighted ratchet-locking frame hinged at one end to the lifting end of the lifting-frame and engaging said catch-bar, and a lifting cord connected to the weighted end of the ratchet locking-frame to lift the same out of engagement with the catch-bar, substantially as set forth. 10th. In a hand-truck, the truck platform, the standards, a transverse catch-bar arranged above the platform, a tilting lifting-frame pivotally mounted between the standards and having a lifting-table, a weighted ratchet-locking frame hinged at one end to the lifting-end of the lifting-frame, and having opposite rows of ratchet-teeth engaging said catch-bar, and a lifting-cord connected to the weighted end of the ratchet-locking frame, substantially as set forth.

No. 45,657. Hub for Vehicle Wheels.
(*Moyeu de roue.*)

The Messer Elastic Rotator Company, Philadelphia, Pennsylvania, assignees of Walter Ladd Messer, Syracuse, New York, all the U.S.A., 30th March, 1894; 6 years.

Claim.—1st. A centre or body consisting of a hub with flanges, and .i encircling said flanges, and having a rim, bands on said rim, bolts connecting said flanges, bolts connecting said annuli, and springs having eyes at their ends on the bolts of said flanges, and intermediate eyes on the bolts of said annuli, said parts being combined, substantially as described. 2nd. A body or frame formed of separate parts which are connected by springs, the operation of the same being substantially as described. 3rd. A centre or body consisting of hub and peripheral portions, and springs which extend from one portion to the other, the peripheral portion being loosely mounted on the hub portion and connected by said springs, which are attached respectively to the bolts of said portions, substantially as described. 4th. A centre or body consisting of a hub having flanges thereon, annuli freely encircling said flanges, and provided

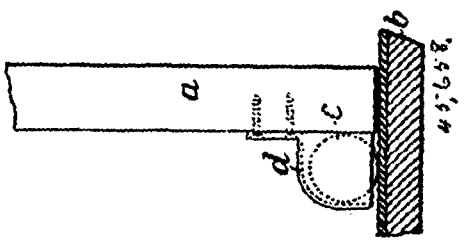
with a rim, and a spring or springs between said hub and rim, said parts being combined substantially as described. 5th. A centre or body consisting of a hub with radiating flanges, annuli encircling



said flanges having inwardly projecting flanges thereon, forming a rim, bands fitting on said rim, bolts connecting said hub flanges, bolts connecting said annuli, and springs connected with said bolts, said parts being combined substantially as described. 6th. A centre or body formed of annuli with a peripheral rim and a hub portion separate therefrom having a flange radiating therefrom, and springs having eyes at their ends and intermediate of their ends and extending from the bolts of the rim to the bolts of the hub, and connecting said peripheral rim and hub portion, substantially as described. 7th. A centre or body consisting of a hub having flanges thereon, annuli encircling said flanges and having inwardly projecting flanges forming a rim, bands on said rim, and a coiled spring having eyes on securing bolts for said hub, flanges and annuli, said parts being combined substantially as described. 8th. A hub with radial flanges having connecting bolts annuli encircling said flanges and having connecting bolts, bands on a rim formed by the flanges of said annuli, and springs having coils or eyes fitted alternately on the bolts of said flange and annuli, forming a yielding periphery, said parts being combined substantially as described.

No. 45,658. Draught Preventing Apparatus.

(Appareil pour empêcher les courants d'air.)



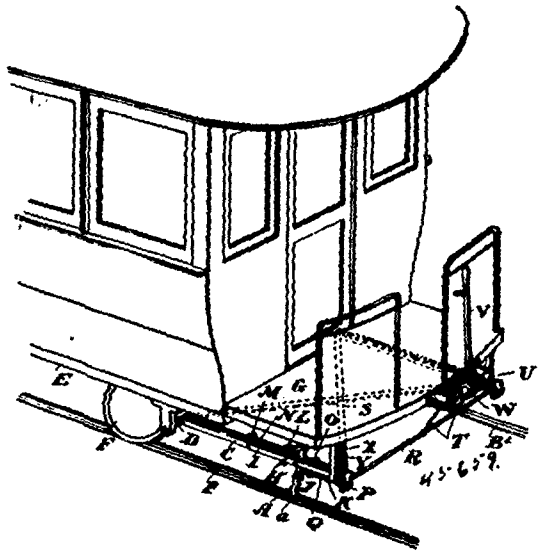
Norman Willis Russ, London, England, 30th March, 1894; 6 years.

Claim.—1st. A draught preventer for a door consisting of a roller held against the bottom of the door in such a manner that it will move with the door but will ride over any unevenness of the floor, the said roller being composed of a core of wood or the like covered with plushette or other soft material, a groove being formed in the said core, substantially as and for the purposes described. 2nd. The combination, with a draught including roller constructed as hereinbefore described, and adapted to be held against the bottom of a door, of brackets so constructed that the said roller can move vertically therein, substantially as and for the purpose described. 3rd. The manufacture and use of the improved draught excluding apparatus hereinbefore described and illustrated in the accompanying drawing.

No. 45,659. Track Cleaner. (*Nettoyeur de voies.*)

Lawrence Curtin, Toronto, Ontario, Canada, 30th March, 1894; 6 years.

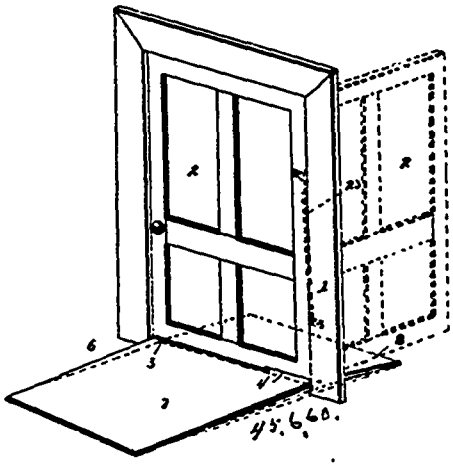
Claim.—1st. A track cleaner, consisting of a spud adapted to run in the rail groove pivotally connected to the car, and means for normally holding the toe of the spud in the proper position to clean the said groove, substantially as specified. 2nd. A track cleaner, consisting of a spud pivotally connected to the car, and adapted to run in the rail groove, means for normally holding the spud in the proper position to clean the said groove, said spud adapted to turn



on its pivotal part when meeting with an obstacle, and means for instantaneously returning the spud to its normal position, and holding the spud in its normal position after clearing an obstacle, substantially as specified. 3rd. In a track cleaner, the combination of a frame pivotally connected to the under side of the car, a spud pivotally connected to the frame, the toe of which is adapted to run in the rail groove, and a spring operated lever adapted to normally hold the spud in such a position that the toe of the spud will travel and clean the rail groove, substantially as specified. 4th. In a track cleaner, the combination of a supplemental frame pivotally connected to the under side of the car, a spud pivotally connected to the supplemental frame, means for holding the spud normally in position to clean the groove in the rail, and means for raising and lowering the supplemental frame, substantially as specified. 5th. In a track cleaner, the combination of a supplemental frame pivotally connected to the under side of the car, a spud A pivotally connected to the supplemental frame, a lever H, one end of which is pivotally connected to the spud A, and the other end pivotally connected to a spring operated pin I, a stationary guide connected to the supplemental frame, in which slides the pin I, a movable guide slidingly connected to the supplemental frame in which is mounted the pin I, and a spring coiled on the said pin between the two guides, substantially as specified. 6th. In a track cleaner the combination of a supplemental frame pivotally connected to the under side of the car, a spud A pivotally connected to the supplemental frame, a lever H, one end of which is pivotally connected to the spud A, and the other end pivotally connected to a spring operated pin I, a stationary guide connected to the supplemental frame in which slides the pin I, a movable guide slidingly connected to the supplemental frame in which is mounted the pin I, and a spring coiled on the said pin between the two guides, and means for raising and lowering the said supplemental frame, substantially as specified. 7th. In a track cleaner the combination of a supplemental frame pivotally connected to the under side of the car, a spud pivotally connected to the supplemental frame, a lever H, one end of which is pivotally connected to the top end of the spud A, the opposite end of the lever H being pivotally connected to a spring operated pin I, a stationary guide connected to the supplemental frame in which slides the spring operated pin I, a movable guide slidingly connected to the supplemental frame in which slides the spring operated pin I, a spring coiled upon the pin I between the said guides, a lever J, one end of which is pivotally connected to the spud A below the supplemental frame, whilst the opposite end of the lever J is pivotally connected to a spring operated pin K, a guide L slidingly connected to the supplemental frame, a guide M rigidly connected to the supplemental frame, the said pin K sliding in the guides L and M, a spring coiled on the pin K between the guides L and M, the tendency of the spring operated pins I and K and levers J and H is to normally hold the toe of the spud A to clean the groove in the rail, and means for raising and lowering the supplemental frame, substantially as specified. 8th. In a track cleaner the combination of a supplemental frame pivotally connected to the under side of the car, a spud pivotally connected to the supplemental frame, a lever H, one end of which is pivotally connected to the top end of the spud A, the opposite end of the lever H being pivotally connected to a spring operated pin I, a stationary guide connected to the supplemental frame in which slides the spring-operated pin I, a movable guide slidingly connected to the supplemental frame in which slides the spring operated pin I, a spring

operated pin I, a spring coiled upon the pin I between the said guides, a lever J, one end of which is pivotally connected to the spud A below the supplemental frame, whilst the opposite end of the lever J is pivotally connected to a spring operated pin K, a guide L slidingly connected to the supplemental frame, a guide M rigidly connected to the supplemental frame, the said pin K sliding in the guides L and M, the tendency of the spring operated pins I and K and levers J and H is to normally hold the toe of the spud A to clean the groove in the rail, means for raising and lowering the supplemental frame, and a guide frame connected to the under side of the car to normally hold the supplemental frame in its proper relation to the rails, spring operated pins provided with cushioned balls at their ends bearing upon the said supplemental frame, and connected to the guide frame, substantially as specified.

No. 45,660. Door Opener. (*Appareil à ouvrir les portes.*)



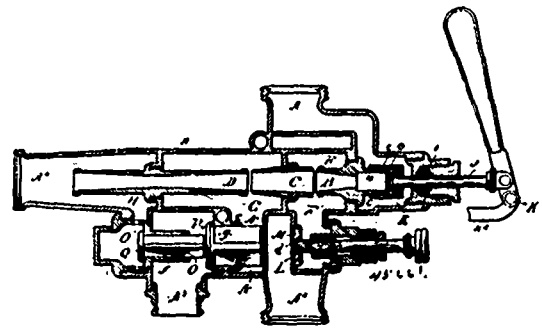
Micajah C. Plummer, and Orrin O. Dinsmore, both of Paralta, Iowa, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In a door-opening mechanism, the combination of a door having a headed stud or pin depending therefrom, an arm adapted to engage said headed stud or pin, a crank-shaft secured to said arm, a rod attached to the crank shaft, a pair of shouldered dogs connected to said rod and mounted upon shafts, and a platform comprising two hinged sections elevated at the centre, and one of which is supplied with depending arms removably engaging the said shouldered dogs, the said door being supplied with a closing spring, substantially as described. 2nd. In a door-opening mechanism, the combination of a door having a closing spring in connection therewith, and a depending headed stud or pin, a horizontally disposed arm engaging said headed stud or pin, a crank-shaft vertically disposed and having said arm secured to the upper end thereof, a rod connected to said crank-shaft, a pair of shafts extending transversely under the door upon which shouldered dogs are mounted that are connected to the said rod, a platform composed of two hinged sections elevated at their meeting connected ends, and a plate connected to one of said sections and having a pair of depending arms that are spaced apart and loosely engage the said shouldered dogs, substantially as described.

No. 45,661. Steam Injector. (*Injecteur à vapeur.*)

The Penberthy Injector Company, assignee of John Desmond, all of Detroit, Michigan, U.S.A., 30th March, 1894; 6 years.

Claim.—1st. In an injector, the combination with the casing, provided with separate chambers for the initial and secondary overflows of separate valves controlling the discharge of the overflow from said chambers and operating automatically, and in their turn one upon the other to unseat by the force of the initial overflow and to seat by the force of the secondary overflow, substantially as described. 2nd. In an injector, the combination with the casing, provided with separate chambers for the initial and secondary overflows, of separate valves controlling separate discharge openings from said chambers and operating automatically and in their turn one upon the other to unseat by the pressure of the initial overflow against the valves controlling said overflow, and to seat independently of each other by the pressure of the secondary overflow against each valve, substantially as described. 3rd. In an injector, the combination, with the casing provided with separate chambers for the initial and secondary overflows of separate valves controlling



separate discharge openings from said chambers and operating automatically and in their turn, one upon the other to unseat by the force of the initial overflow and to be seated by the force of the secondary overflow, the valve controlling the initial overflow being provided with a shoulder, substantially as described. 4th In an injector, the combination with the casing provided with separate chambers for the initial and secondary overflow, of two separate floating valves controlling the discharge of the overflow from said chambers, and operating automatically by the force of said overflow acting reciprocally upon said valves to unseat and seat the same at the proper time, said valves being adapted to unseat and seat one another, substantially as described. 5th. In an injector, the combination with the casing provided with separate chambers for the initial and secondary overflow, of two floating valves controlling the overflow from said chambers and operating automatically one upon the other and in their turn, to unseat by the pressure of the initial overflow against the valve controlling said overflow, and to be seated by the secondary overflow upon one or both of said valves, the valve controlling the initial overflow being of larger size and having a shoulder, substantially as described. 6th. In an injector, the combination with the casing, provided with separate overflow chambers for the initial and secondary overflow, of an overflow arm provided with lateral overflow openings on opposite sides through which said chambers communicate into said overflow arm, horizontally sliding wing valves of different area controlling said overflow opening, tubular guide bearings formed around said overflow openings in which the wings of said valves are slidingly supported, and valve chambers intermediate between the overflow openings and the overflow chambers in the casing, substantially as described. 7th. In an injector, the combination with the casing provided with separate chambers for the initial and secondary overflow, of an overflow arm having lateral openings on opposite sides through which said chambers communicate into the overflow arm, floating valves automatically controlling the discharge of the overflow from said openings into the overflow arm, and valve casings intermediate between the discharge openings and the overflow chambers, said valve casings, overflow openings and overflow arm located below the overflow chambers in the casings and adapted to carry off the leakage into the injector, substantially as described. 8th. In an injector, the combination with the casing provided with separate chambers for the initial and secondary overflow, of the horizontally sliding valves P and Q controlling separate overflow openings from said openings from said chambers, and adapted to operate automatically one upon the other to unseat and seat by the pressure of the initial and secondary overflow, and the tubular guide bearing *f* around the stem of the valve Q, extending in proximity to the valve P, substantially as described. 9th. In an injector, the combination with the casing provided with the overflow chamber G, and delivery chamber H, of the overflow arm A^2, the lateral openings N, O, through which said chambers discharge into the overflow, the horizontal sliding wing valves P, Q, of unequal area controlling the said openings and operating automatically one upon the other to unseat and seat by the pressure of the initial and secondary overflow respectively, the valve chamber N^1, O^1, intermediate between the openings N, O, and the overflow chambers respectively, the tubular guide bearings *e*, *f*, around the openings N, O, and the shoulder *g* on the valve P, extending into the tubular guide bearings *e*, all substantially as described. 10th. In an injector, the combination with a casing and water chamber formed therein, of a water inlet branch communicating with the chamber through a fixed part, and a valve interposed between the inlet branch and chamber for increasing the flow from the branch into the chamber, substantially as described.

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

3292. THE REND ROCK POWDER COMPANY, (assignees), 3rd five years of No. 18,810, from the 7th day of March, 1894. Improvements in Explosive Compounds, 6th March, 1894.

3293. THE REND ROCK POWDER COMPANY, (assignees), 3rd five years of No. 18,811, from the 7th day of March, 1894. Improvements in Explosive Compounds, 6th March, 1894.

3294. ARCHIBALD A. DICKSON, 2nd five years of No. 30,884, from the 7th day of March, 1894. Improved Apparatus for the Manufacture of Peat Fuel, 6th March, 1894.

3295. KIRKHAM, HULETT and CHANDLER, (assignees), 2nd five years of No. 30,921, from the 9th day of March, 1894. Improvements in Washing and Scrubbing Gas and Apparatus therefor, 6th March, 1894.

3296. CHARLES L. KLAUDER, 2nd five years of No. 31,024, from the 2nd day of April, 1894. Improvements in Dyeing or Scouring Machines, 8th March, 1894.

3297. HARVEY A. MOYER, 2nd five years of No. 31,375, from the 17th day of May, 1894. Improvements in Spring Vehicles, 13th March, 1894.

3298. ROUGHSEDGE WALLWORTH and ARTHUR C. WELLS, 2nd five years of No. 31,156, from the 16th day of April, 1894. Improvements in Apparatus for Illuminating and Heating Purposes, 16th March, 1894.

3299. THE FLINT ROAD CART COMPANY, (assignees), 2nd five years of No. 34,957, from the 2nd day of September, 1895. Improvements on Carriage Poles, 17th March, 1894.

3300. BURT E. TILDEN, 2nd five years of No. 31,417, from the 22nd day of May, 1894. Improvements in Car and Locomotive Engine Replacing Frogs, 17th March, 1894.

3301. CLARENCE L. BARNHART, 2nd five years of No. 31,004, from the 29th day of March, 1894. Improvements in car movers, 19th March, 1894.

3302. JAY S. CORBIN and ANDREW G. HILL, 3rd five years of No. 19,058, from the 4th day of April, 1894. Improvements in Combined Harrows and Seeders, 19th March, 1894.

3303. A. HARRIS, SON & COMPANY (assignees), 3rd five years of No. 18,971, from the 27th day of March, 1894. Improvements in Harvester Binders, 19th March, 1894.

3304. A. HARRIS, SON & CO. (assignees), 3rd five years of No. 19,090, from the 7th day of April, 1894. Improvements in Harvesters, 19th March, 1894.

3305. ALFRED S. TOMKINS, 2nd five years of No. 31,006, from the 29th day of March, 1894. Improvements in Portable Cooking Apparatus, 19th March, 1894.

3306. JAMES H. HUMMEL, 3rd five years of No. 18,924, from the 20th day of March, 1894. Improvements in Weather Strips, 19th March, 1894.

3307. JAMES W. PROVAN, 2nd five years of No. 31,036, from the 3rd day of April, 1894. Improved Load Lifting Sling Catch, 20th March, 1894.

3308. JULIA E. WRIGHT, 2nd five years of No. 31,369, from the 15th day of May, 1894. Improvements in Lubricators for Car Axles, 24th March, 1894.

3309. JOHN W. EVANS, 2nd five years of No. 31,164, from the 20th day of April, 1894. Improvements in Percolators, 24th March, 1894.

3310. ALFRED W. BLACK, 2nd five years of No. 31,252, from the 4th day of May, 1894. Improvements in Potato Planters, 27th March, 1894.

3311. JOHN R. CUMMINGS, 2nd five years of No. 31,501, from the 6th day of June, 1894. Improvements in Machines for Separating, Trimming and Grooving Stereotype Plates, 27th March, 1894.

3312. JAMES A. READ, 2nd five years of No. 31,020, from the 30th day of March, 1894. Improvements in the Art of Manufacturing Brushes, 27th March, 1894.

3313. ORVILLE M. MORSE and JOHN G. MUNDY, 2nd five years of No. 31,148, from the 16th day of April, 1894. Improvements in Bolting Reels, 27th March, 1894.

3314. W. M. MORSE, 3rd five years of No. 18,962, from the 25th day of March, 1894. Improvements in Fodder Cutters, 27th March, 1894.

3315. JOSEPH STOVEL and JOHN W. CORLEY, 2nd five years of No. 31,015, from the 30th day of March, 1894. Improved Card or Ticket Box, 29th March, 1894.

3316. WILLIAM CLENDENNENG & SON (assignees), 2nd five years of No. 31,240, from the 2nd day of May, 1894. Improvements in Hot Water Furnaces, 31st March, 1894.

3317. JOHN C. LIGHTHOUSE, 3rd five years of No. 19,003, from the 1st day of April, 1894. Improvements on Halters, 31st March, 1894.

TRADE MARKS

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

4875. HARDING & SMITH, of St. John, N.B. Flour, 5th March, 1894.

4876, 4877, 4878. THE AMERICAN CEREAL COMPANY, of Chicago, Illinois, U.S.A. Preparations of grain for human food, 5th March, 1894.

4879. LEON LARUE, junior, of Montreal, Que. Manufactured tobacco and goods manufactured therefrom, 6th March, 1894.

4880. GEORGE MILLIGAN, of Toronto, Ont. Cigars, 8th March, 1894.

4881. GEORGE T. BRYAN AND THOMAS LEE, of Winnipeg, Man., trading as BRYAN & CO. Cigars, March, 1894.

4882. FREDERICK HASELGROVE, of London, Ont. Cigars, 8th March, 1894.

4883. FREDERICK LEITCH, of Turtle Point, Pennsylvania, U.S.A. Medicine, 9th March, 1894.

4884. SILARKO JOHN TELLÉRY, trading as S. J. TELLÉRY & CO., at Delhi, Calcutta, Bombay and Simla, in the Empire of India. General Trade Mark, 12th March, 1894.

4885. J. RATTRAY & COMPANY, of Montreal, Que. Cigars, 12th March, 1894.

4886. THE HENRY CLAY & BOCK & COMPANY (Limited), of Havana, Cuba. Cigars and Cigarettes, 12th March, 1894.

4887. ROYAL PULP AND PAPER COMPANY, of East Angus, Compton Co., Que. Paper, 12th March, 1894.

4888. BRIGGS PRIESTLEY, CHARLES HENRY PRIESTLEY AND WM. EDWIN BRIGGS PRIESTLEY, trading as B. PRIESTLEY & CO., of 21 Swaine street, Bradford, England, Textile Fabrics, 12th March, 1894.

4889. TARR & WONSON (Limited), of Gloucester, Massachusetts, U.S.A. Paint for ships and vessels, 14th March, 1894.

4890. PHILIP GABLE, of Nanaimo, B.C. Cigars, 14th March, 1894.

4891. JAMES CARLYLE JOHNSTON, of Toronto, Ont. Patent Medicines, 14th March, 1894.

4892. GEORGE W. COOLEY, of Toronto, Ont., trading as THE LIQUEUR MANUFACTURING CO. Mixed Liquors, 14th March, 1894.

4893. WHITNEY GLASS WORKS, of Glasborough, Gloucester Co., New Jersey, U.S.A. Glass Bottles, Vials and other Glassware, 15th March, 1894.

4894. W. T. A. DONAHUE & CHARLES S. HALL, of Worcester, Massachusetts, U.S.A., trading as THE IMPERIAL MANUFACTURING CO. Harness Dressing Soap, 16th March, 1894.

4895, 4896, 4897. GEORGE B. BURLAND, of Montreal, Que. Playing Cards, 16th March, 1894.

4898. THE SABISTON LITHOGRAPHIC AND PUBLISHING COMPANY, of Montreal, Que. Playing Cards, 16th March, 1894.

4899. THE NORTHUMBRIAN CHEMICAL COMPANY (Limited), of No. 1, St. Nicholas Buildings, Newcastle-upon-Tyne, Northumberland Co., England. Bleaching Powder and Caustic Soda, 17th March, 1894.

4900. THE NORTHUMBRIAN CHEMICAL COMPANY (Limited), of No. 1, St. Nicholas Buildings, Newcastle-upon-Tyne, Northumberland Co., England. Caustic Soda, 17th March, 1894.

4901. DAY & MARTIN, of Borough Road, Southwark, London, England. A Cream, being a polish for all descriptions of leather, 17th March, 1894.

4902. HIRAM WALKER & SONS (Limited), of Walkerville, Ont. Whiskey, 17th March, 1894.

4903. D. RITCHIE & COMPANY, of Montreal, Que. Plug and Cut Tobaccos, Cigars and Cigarettes, 17th March, 1894.

4904. JOHN L. SPINK, of Toronto, Ont. Flour, 17th March, 1894.

4905. GEO. S. DE FOREST & SONS, of St. John, N.B. Tea, 22nd March, 1894.

4906. SPARHAM FIREPROOF ROOFING CEMENT COMPANY, of Montreal, Que. Roofing Material, 27th March, 1894.

4907. WILLIAM M'CABE, of St. Louis, Missouri, U.S.A. Corsets, Corset-waists, dress and garment stiffners, 27th March, 1894.

4908. THE CROMPTON CORSET COMPANY, of Toronto, Ont. Dress Shields, 29th March, 1894.

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7302. THE PRESBYTERIAN REVIEW ANNUAL AND CLERGY LIST, 1894. Thomas Robert Clougher, Toronto, Ont., 2nd March, 1894.

7303. A SYSTEM FOR TEACHING HARMONIC PROGRESSIONS. J. Humfrey Anger, Toronto, Ont., 2nd March, 1894.

7304. DICKSON'S MAP OF THE CITY OF BRANDON, MANITOBA. Compiled from the latest registered plans and surveys, 1894. Henry Godkin Dickson, Brandon, Man., 2nd March, 1894.

7305. SIR WILLIAM PHIPS DEVANT QUÉBEC, 1690. Histoire d'un Siège par Ernest Myrand. Joseph Dominique Ernest Myrand, Québec, Qué., 8 mars, 1894.

7306. PETITE PHARMACIE VÉTÉRINAIRE DU CULTIVATEUR. Bernard Lippens, Québec, Qué., 12 mars, 1894.

7307. THE DES BRISAY ANALYTICAL LATIN METHOD. LESSON XIV. Charles T. Des Brisay, Toronto, Ont., 13th March, 1894.

7308. CYCLING. By William Norrie Robertson, Stratford, Ont., 14th March, 1894.

7309. INSURANCE PLAN OF THE CITY OF MONTREAL. Volume IV, December, 1893. Charles Edward Goad, Montreal, Que., 16th March, 1894.

7310. THE SALT SEA FOAM. Words by Frank M. Field, B.A., (Sidney Sellers). Music by J. D. A. Tripp. The Anglo-Canadian Music Publishers Association, Ld., London, England, 16th March, 1894.

7311. THE CANADIAN HYMNAL. A collection of Hymns and Music Revised and enlarged with the addition of Topical Index and Index of Hymn Tunes. William Briggs, (Book-Steward of the Methodist Book and Publishing House) Toronto, Ont., 17th March, 1894.

7312. THE CANADIAN HYMNAL. Words only. Revised and Enlarged with the addition of a Topical Index. Wm. Briggs, (Book-Steward of the Methodist Book and Publishing House) Toronto, Ont., 17th March, 1894.

7313. YEAR BOOK AND CLERGY LIST OF THE CHURCH OF ENGLAND IN THE DOMINION OF CANADA, 1894. Joseph Perry Clougher, Toronto, Ont., 19th March, 1894.

7314. THE BUSINESS AND SYSTEM OF THE BIRKBECK INVESTMENT, SECURITY AND SAVINGS COMPANY. Revised Edition. The Birkbeck Investment, Security and Savings Co., Toronto, Ont., 19th March, 1894.

7315. SERIES OF DRAWINGS printed on each card of a pack of Playing Cards for the purpose of giving the signification of each card in the art of telling fortune. Called "Fortune Telling Cards." Joseph Roberge, Sherbrooke, Que., 19th March, 1894.

7316. DEACON'S MAP OF RAT PORTAGE, KEEWATIN AND PART OF THE LAKE OF THE WOODS. Thomas R. Deacon, Rat Portage, Ont., 22nd March, 1894.

7317. THE BIRDS OF ONTARIO. Revised and Enlarged Edition with Illustrations. By Thomas McIlwraith. William Briggs, (Book-Steward of the Methodist Book and Publishing House) Toronto, Ont., 27th March, 1894.

7318. ONTARIO PRACTICE REPORTS. Volume XV. By T. T. Rolph, Barrister-at-Law and Reporter to the Court. J. F. Smith, Q.C., Editor. The Law Society of Upper Canada, Toronto, Ont., 27th March, 1894.

7319. THE DES BRISAY ANALYTICAL LATIN METHOD. LESSON XV. Charles T. Des Brisay, Toronto, Ont., 27th March, 1894.

7320. MANUEL DE PREMIÈRE COMMUNION. Extrait des Meilleurs Auteurs. C. O. Beauchemin & Fils, Montréal, Qué., 28 mars, 1894.

7321. GUIDE DU JEUNE COMMUNIANT. C. O. Beauchemin & Fils, Montréal, Qué., 28 mars, 1894.

7322. MAP OF THE COUNTY OF GREY. Published by John Mitchell, Hanover, Ont., 29th March, 1894.

7323. LOVES DIVINE ALCHEMY. By E. A. McLennan, Vancouver, B. C., 29th March, 1894.

7324. RECONCILED. Words by Thomas Rowley. Music by Chas. Bohner. Thos. Rowley, Toronto, Ont., 31st March, 1894.

7325. INSURANCE PLANS OF ALTON, BRAMPTON, CANNINGTON, COLLINGWOOD, CREEMORE, MARKHAM, MOUNT ALBERT AND PETERBOROUGH, ONT. Charles Edward Goad, Montreal, Que., 31st March, 1894.

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