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INVENTIONS PATENTED.

No. 2059. WILLIAM L. BRAGG, Bridgewater, Ont., 12th February, 1873, for 5 years: "An Adjustable Coultter." (Un coudre mobile.)

Relates to the method of attaching the coultter to the beam, imparting a sliding motion, and rendering it adjustable.

Claim.—1st. The combination and arrangement of the catch B, arm C, eccentric pin D, band F, centre K, and key L; 2nd. The combination and arrangement of the eccentric-pin D, cam E, hand-screw G, concaves I, convexes J, and centre K.

No. 2060. JAMES F. KELLOGG, Oshawa, Ont., 12th February, 1873, for 5 years: "Improvements in Sewing Machines." (Perfectionnements aux machines à coudre.)

Claim.—1st. The base-plate A, formed with a raised portion C, and projecting-arm B, to allow of the cloth passing under such raised portion and to be retained flexibly by a spring device on the arm B; 2nd. The employment of a feed-bar D, operating over the plate A, and on the upper surface of the cloth to bring the gathers to the needle; 3rd. The adaptation to the feed-bar D, of a spiral-spring F, and lever G, for its operation; 4th. The application to the feed-bar D, of the thumb-screw I, for adjusting the stroke of the feed-bar to any required extent; 5th. The application to the base A, of a guide M, having spring-bars L, to seize the cloth, as described, and direct it in its course to the needle.

No. 2061. DAVID A. RITCHIE, Charlestown, Mass., U. S., 12th February, 1873, for 5 years: "Improvements in Metallic Pipes." (Perfectionnements aux tuyaux en métal.)

Claim.—A pipe or tube A, made by spirally winding a strip of metal and uniting its edges by a grooved or flanged seam or joint C.

No. 2062. WILLIAM S. JENKS & ORRIN L. JENKS, Port Huron, Mich., U. S., 12th February, 1873, for 15 years: "A Head-Block for Saw Mill." (Moufle de moulin à scies.)

This invention has for its object an improvement in the construction of the set works for circular saw mills, whereby a more rapid and nearly continuous rotary motion is imparted to the set shaft which moves the head-block in setting.

Claim.—1st. The construction and arrangement of the frame A, A', bearing B, B', shafts D, D, bevel-gear wheels E, E', pinion F, lever G, and pawls J, for rotating the set-shaft C; 2nd. Combination with the above named elements, the perforated quadrant H, provided with the movable stop L.

No. 2063. GEORGE MERRICK, Gananoque, Ont., 12th February, 1873, for 5 years: "Machine for Wringing Clothes." (Machine à tordre le linge.)

Claim.—1st. The springs D, of spring steel, and formed of horse-shoe or other suitable shape, to exert their unaided and combined

influence for the compression of the rollers B, C, by their journals 2nd. The metal frame A, formed with projecting cams, and fixed rolls F, to act as guides for preventing the clothes from being pinched between the ends of the rollers and frame A.

No. 2064. JUDSON W. WARNER, Oneida, N. Y., U. S., 12th February, 1873, for 5 years: "Fire-proof Safe." (Salamandre.)

Consists in the introduction of a running supply of water through hollow spaces provided for in the top, bottom, sides, and door of the safe.

Claim.—The water-tight compartments, A, B, C, D, in the top, bottom, back, and sides, and E, in the door E, with the hollow hinges H, R, and staples T, with the grooves a, a, holes b, b, inlet-pipe G, outlet-pipe H, lead or composition joint d, rods e, e, and h, valves I, and i, springs f and k, valve-seats g and j, and lever u, in combination with the safe S.

No. 2065. WILLIAM W. HUNTLEY, ABEL P. HOLCOMB & AUGUST HEINE, Silver Creek, N. Y., U. S., 14th February, 1873, for 15 years: "Machine for Purifying Middlings." (Machine à purifier les gruaux.)

Claim.—1st. The disintegrator consisting of a shaft, a cone or disc and a series of pins or beaters; 2nd. A machine for purifying middlings, the combination of a disintegrating head, an exhaust fan, and a wind trunk; 3rd. The combination in a machine for purifying middlings of a disintegrator and a series of interchangeable sieves the parts being constructed and arranged to operate with reference to each other; 4th. The combination and arrangement of the hood D, the feed-hopper C, wind trunk B, and the fan F.

No. 2066. BENJAMIN F. BAKER, Detroit, Mich., Assignee of Kellogg H. Loomis, New York, U. S., 14th February, 1873, for 5 years: "Improvements in Nut-Locks and Washers." (Perfectionnements aux écrous et rondelles.)

Relates to a washer adapted to hold a nut in position on a bolt whilst subject to constant vibratory motion.

Claim.—1st. The washer A, in combination with cut A', as described or formed in any other manner so as to produce equivalent effects acting in combination with nut B, and bolt C; 2nd. The washer A, made with a flat surface instead of a bent one as described in combination with cut A', acting in combination with nut B, and bolt C; 3rd. The washer A, in combination with A', in further combination with the corners of the washer bent so as to form points by which to fasten the washer to wooden or other substances.

No. 2067. BENJAMIN F. BAKER, Detroit, Mich., Assignee of Kellogg H. Loomis, New York, U. S., 14th February, 1873, for 5 years: "Improvements in Nut-Locks and Washers." (Perfectionnements aux écrous et rondelles.)

Claim.—1st. The steel-spring washer A, provided with a series of curved cuts and outward projections, around the central orifice G, acting in combination with a nut B, and bolt C; 2nd. The steel spring washer A, provided as described and acting in combination with nut B, and bolt C, but having a flat surface instead of a bent one as described; 3rd. The steel spring washer A, in either of the forms flat or bent in combination with the corners of the washer bent downwards so as to form points to fasten into the material upon which it is placed; 4th. The steel spring washer A, in either of the forms flat or bent, in combination with spikes applied either outside of the steel plate or driven through the plate itself to retain it in its position.

No. 2068. JOHN W. GARDNER, Cleveland, Ohio, U. S., 14th February, 1873, for 15 years: "Steam and Air Car-brakes." (Freins de wagons mis en opération par la vapeur ou l'air.)

Claim.—1st. The method of applying either steam or compressed air to "force off" brakes under every car in a railway train; 2nd. The combination of the four way cock C, the pipes E, F, T, and L, and the brake cylinders D, so that brakes are instantly "set" and "forced off" from the wheels of every car in a railway train by the use either of compressed air or steam; 3rd. The four-way cock C, for changing the air or steam current into either end of the brake cylinder D, under every car for the purpose of "setting" and "forcing off" brakes.

No. 2069. FREDERICK PROUDFOOT, Toronto, Ont., 14th February, 1873, for 5 years: "Adjustable Fire Grate and Heat Intensifier." (Grille de foyer mobile donnant une chaleur plus intense.)

Adapted to consume coal, wood, petroleum or other liquid fuel on a raised central fire-basket or lamp

Claim.—1st. An open fire-place of clay, terra cotta, iron or other metal for insertion in partition walls having two fronts and one fire-basket constructed to serve two apartments from either of which the fire may be viewed, fed and formed as set forth; 2nd. Providing the double fire-place with a close fitting removable back, to convert such fire-place to suit for one room only, and having a movable fire-back Y; 3rd. A double-faced open fire-place having a tubular shank D, centrally located upon which to elevate the fire-basket E, or lamp F; 4th. A double-faced open fire-place having a water tank B, for the generation of steam and pipes C, G, suitably arranged to convey the steam to the fire-basket or lamp and to the chimney; 5th. The heating drum H, damper M, and ventilator K, arranged as set forth.

No. 2070. EDMUND A. DAY, Oberlin, Ohio, U. S., 14th February, 1873, for 5 years: "Clasps for Elastic Tubes." (Clapet de lance de boyau.)

So constructed that by hand pressure they come into contact with the hose and regulate or cut off the supply of water.

Claim.—In combination with the metallic nozzle A, the ears E, and E, lever-handles C, and D, cross-bearings J, and J, and intermediate elastic tube L, constructed and operating as set forth.

No. 2071. JULIUS BAUR, Hamilton, Ont., 14th February, 1873, for 15 years: "Manufacture of Steel." (Fabrication de l'acier.)

Claim.—1st. The process of making steel by combining or alloying metallic chromium and manganese with metallic iron so that the metallic chromium and manganese shall be present in the finished product; 2nd. The process of making steel, or what may be termed a substitute for steel, by combining or alloying metallic chromium and manganese with metallic iron in such a manner that the metallic chromium and manganese shall be present in the finished product and shall be the only agents which impart to such product the qualities of steel.

No. 2072. JUDSON W. WARNER, Oneida, N. Y., U. S., 14th February, 1873, for 5 years: "Fire-proof Vaults." (Voutes à l'épreuve du feu.)

Consists in lining the inside of the vault with independent metallic water compartments communicating with each other and exterior supply and exit pipes.

Claim.—An inner vault V, consisting of a number of water-tight compartments connected by pipes a, with the door J, hollow hinges K, and L, with grooves b, and holes c, inlet-pipe M, with check-valve d, and exit-pipe N, in combination with the outer vault A.

No. 2073. VINCENT BROUSSEAU, St. Sébastien, Que., 14th February, 1873, for 5 years: "Dyspepsia Compound." (Composition médicinale pour la dyspepsie.)

Consists of the juice of the elder berry, water, sugar and ginger mixed together in certain proportions.

Claim.—Une composition formée de jus de baies du sureau blanc, d'eau, de sucre et de gingembre dans les proportions sus décrites.

No. 2074. FRANKLIN KERSTING, CARL RUDOW, & BENJAMIN F. BROADWELL, Grand Rapids, Mich., U. S., 14th February, 1873, for 15 years: "Art of Clarifying and Settling Varnishes and Oils." (Art de clarifier les vernis et les huiles.)

Claim.—1st. The method of clarifying and improving the lustre of varnishes and clarifying all manufactured liquids; 2nd. The method of employing burnt, ground or powdered oyster shells; 3rd. The method of combining pulverized marble and ground burnt oyster shell; 4th. A new article of manufacture and trade, in the varnish rendered clear and of improved gloss and elasticity.

No. 2075. JOSEPH GRAY, Toronto, Ont., 14th February, 1873, for 5 years: "A Heating Stove." (Un calorifère.)

Claim.—1st. The combination of the fire chamber A, having internal pipes B, intermediate air-chamber D, and smoke-chamber I; 2nd. The arrangement of the smoke-pipes E, and plates F, in combination with the air-chamber D; 3rd. The arrangement of the smoke-chamber I, and plates J, in combination with the air-chamber D, and pipes E, H; 4th. The jacket M, provided with outlet apertures H, in combination with a stove having a perforated base P.

No. 2076. JAMES H. CURRAN, Rochester, N. Y., U. S., 14th February, 1873, for 5 years: "A Harvesting Machine Sickle Grinder." (Rémoleur des couteaux des moissonneuses.)

For sharpening the harvester sickle without removing the latter from the cutting apparatus or guard fingers. The grinder can be moved longitudinally over the surface of the sickle as it rotates.

Claim.—1st. The swivelled arm C, and curved arm B, with extension B, when combined with the crank-wheel E, pulley I, and grinder H, in such a manner that the machine may be used as a stationary or movable grinder; 2nd. The combination with the grinder H, of the cross-head G, provided with the stem I, and of the socket A, the whole so arranged as to produce longitudinal and axial adjustment; 3rd. The combination of a sickle-grinder with a bed-plate and its hinged connections B, B', C, arranged in such a manner as to be made either stationary or movable for grinding, and having a straight forward and backward movement on its joints, as described.

No. 2077. WILLIAM H. DUNNING, Detroit, Mich., U. S., 14th February, 1873, for 5 years: "Process of Removing Incrustations of Lime from Steam Boilers." (Procédé pour enlever les incrustations de chaux des chaudières à vapeur.)

Claim.—The process of removing incrustations of lime from steam-boilers, and preventing the latter from foaming in subsequent use by the employment of water, sal-soda, muriatic acid, simple-syrup, kerosene oil, linseed oil, gum arabic and powdered chalk in the proportions and in the manner described.

No. 2078. THOS. STEERS, Jr., Ottawa, Ont., 18th February, 1873, for 5 years: "Apparatus for Manufacturing Dye and Saccharine Salts." (Appareil pour la fabrication de la teinture et de l'acide oxalique.)

Claim.—The pumps B, pipes A, A', and shield X, S, constructed and arranged as described.

No. 2079. JACOB HEBERLEIN, Munich, Bavaria, 20th February, 1873, for 5 years: "A Railway Car-Brake." (Un frein de char de chemin de fer.)

Claim.—1st. The wooden periphery for the friction drum B, or D, with the fibres of the wood arranged radially or nearly so and secured between metal checks or in mortises; 2nd. The lever E, with adjustable weight operating in combination with the friction drum D, pulleys D', chains F, and lever G; 3rd. The arrangement of the chains F, in connection with the brake-drum and brake-lever so that their tension in applying the brakes increases the frictional pressure of the drums; 4th. The lever E, operating in combination with the suspending rod K, and tumbler K'; 5th. The cords, chains or rods i, j, and k, and pulley z, or their equivalents operating in combination with the rods K, and tumblers K', for bringing the brake apparatus into action from any part of the train; 6th. The cord or chain m, lever m', and rod m', or their equivalents operating in combination with the levers E, the rods K, and tumblers K', for putting the brake apparatus out of action from any part of the train; 7th. The combination of the rod l, and levers l', l', and l', with the lever E, and weight E', for adjusting the brake-power with reference to fig. 10, sheet V; 8th. The lever h, operating in combination with the coupling of the brake-rods with reference to fig. 2, sheet I, and figs. 3 and 3rd sheet II; 9th. Combining the friction brake apparatus with the ordinary screw-brake gear, the holes in the connections of the screw-brake apparatus being slotted so that the brakes can be worked by the friction apparatus or by hand or by both; 10th. The use of an adjustable weight on the lever E, for adjusting the frictional pressure of the drums; 11th. The friction drum brake apparatus combining the chains F, with a lever G, and rods G', G', or H, H, whereby their tension is distributed among the several brakes; 12th. The combination of two sets of friction drums on one lever with one axle drum and chains conveying the brake-power forwards and backwards with reference to figs. 6 and 7, sheet IV; 13th. The connection of the brake-chains F, to the pulleys D', in such a manner that the pulleys wind up the chains so as to put on the brakes in whichever direction the friction drums may rotate; 14th. The apparatus as described with reference to fig. 12, sheet VI, whereby the friction drum apparatus can be brought into action and taken out of action by alternate pulls of the line of communication; 15th. The arrangement of the line of communication i, in such a manner that the brake apparatus is brought into action automatically when a train becomes divided or when a carriage runs off the line or when an axle breaks; 16th. The arrangement of the friction brake apparatus on a tramway car and its combination with the hand screw brake gear with reference to figs. 8 and 9, sheet IV.

No. 2080. JAMES H. BLESSING & FREDERICK TOWNSEND, Albany, N. Y., U. S., 20th Feby., 1873, for 5 years: "A Steam Trap." (Boite à retour de vapeur.)

Used in connection with apparatuses for warming buildings with steam and which return back, automatically, the condensed water into the boiler.

Claim.—1st. A steam trap which is sustained upon one arm of a lever B, and counterbalanced by a weight H, on the opposite arm of such lever in combination with pipes G, G¹, and J, and an automatic tripping device for the valve ρ^2 ; 2nd. The trap cylinder C, suspended upon knife-edges α , α , on lever B, and guided below by a pivoted rod T; 3rd. In the gravitating trap-cylinder C, valve-box D, and a valve-tripping device which is connected by a rod h , to a fixed arm d , whereby the rising and descending movements of the trap will actuate the said valve; 4th. Combination with the trap described the distributing plate V, inside of the cylinder C; 5th. In a gravitating receiver C, of a steam-trap to return the water to the boiler.

No. 2081. THOMAS H. WHITE, & EDGAR KNIGHT, Cleveland, Ohio, U. S., 20th Feby., 1873, for 5 years: "A Lamp." (Une lampe.)

Claim.—1st. The chamber D, oil-tube E, and skirt H, in combination with the fount C, and a burner; 2nd. Supporting the burner by securing the same to the oil-tube E, and depending the skirt H, from said burner down into the chamber over the tube E; 3rd. A lamp having a recess or chamber D, in combination with the depending skirt H.

No. 2082. ANDREW HUNTER, & EGBERT H. OSBORNE, Quincy, Ill., U. S., 20th February, 1873, (Extension of Patent 1941 for a second period of 5 years): "A Grain Cleaner." (Une machine à nettoyer les grains.)

No. 2083. JOHN EWING, JR., Coaticook, Que., 20th February, 1873, for 5 years: "A Washing and Wringing Machine." (Machine à laver et tordre le linge.)

Claim.—1st. The combination with a frame A, of corrugated rollers B, and roller F, having movable bearings and roller H, whereby the roller F, can be brought to engagement with the rollers B, and H, independently as set forth, for the purpose of washing and wringing; 2nd. The arrangement of the springs E, for compressing the rollers and bars D, receiving the journals of the rollers B, adjustably as set forth; 3rd. The frame G, receiving the journals of the roller F, and having eccentric ends and cam-notches J, to engage with the bars D, and protecting journals or pins for bringing the rollers together; 4th. The flap-table I, hinged or journalled to the frame A, and bearing on the frame G; 5th. The endless bands C, applied to the rollers B, to carry the cloth as set forth.

No. 2084. LORENZO FORREST, Belleville, Ont., 20th February, 1873, for 10 years: "A Car-Coupler." (Un attache-char.)

Made self-acting by means of a weight and lever and without the use of springs or other contrivances.

Claim.—1st. The combination and arrangement of the swivel-plate bearers B, swivel-plate C, draw-bar D, and suspending loop I; 2nd. The combination and arrangement of the throat F, shoulder K, weight J, and lever L; 3rd. The combination and arrangement of the lifting-rod Q, and lever R.

No. 2085. GEORGE W. PUTNAM, South Glens Falls, N. Y., U. S., 20th February, 1873, for 5 years: "A Car-Coupler." (Maille d'attache-char.)

Consists in a plate or bar arranged in the centre of an ordinary coupling-link with a rod extending on both sides, each end of said rod being surrounded by a spiral spring acting upon a slide moving in the link and having a projecting flange around its inner end.

Claim.—The combination of the centro-plate or bar B, rod A, springs δ , δ , and slides C, C, with flanges d , d , all constructed as described and arranged in a coupling-link α .

No. 2086. FRANKLIN S. SMITH, Geneva, Ohio, U. S., 20th February, 1873, for 5 years: "A Lifting Jack." (Un cric.)

Claim.—It consists in the link or swing-fulcrum E, lever F, having a curved or hooked end F¹, arranged to operate in combination with the slide C, and pins δ .

No. 2087. FREDERICK E. B. BEAUMONT & CHARLES J. APPLEBY, London, Eng., 20th February, 1873, for 10 years: "A Rock or Stone Drilling and Tunnelling Apparatus." (Appareil à percer le roc ou la pierre et pour les tunnels.)

Consists of an apparatus wherein cutters consisting of diamonds or gems set around a tubular holder are pressed against the rock

or stone and rotated, the gems being thereby caused to cut an annular groove leaving a cylindrical core which is broken away from time to time.

Claim.—1st. A rock or stone drilling apparatus the driving axis B, in combination with the toothed wheels F, D, clutch C, friction discs E, E¹, compressing gear T, and brake blocks K, P, all arranged and operating as described with reference to Figs. 1 to 7, of the drawings; 2nd. In combination with the screwed hollow drill bar I, spur wheel and tube J, J, spur-wheel and tube K, K, driver L, brake-strap M, nut N, and anti-friction rollers α , all arranged and operating as described with reference to Figs. 1 to 7 of the drawings; 3rd. A tunnelling machinery the transom K, with horizontal shafts i , i , driven by bevel gearing i^1 , i^1 , shaft h , and bevel-wheel A¹, from the crank shaft ρ , of the motive power-engine f , on carriage α , the screw spindles σ , on transom k , for traversing saddles n , carrying standards m ; the vertical shafts l , driven by bevel gearing from the shaft i , and having bevel gearing for driving the drilling apparatus fixed on face plates p , and the vertical screws q , in standards m , with nuts for traversing face plates p , all combined and operating as described with reference to Figs. 8 to 10 of the drawings; 4th. Combination with the transom k , and standards m , the axle and wheels e , e , connected to the transom k , by links s , with joints and stops s , the ties t , connected to standards m , and to nuts l^1 , on screw spindles l^1 ; carried by carriage α , and the shaft Y, driven by gearing h^1 , from shaft h , and imparting motion to screw spindles l^1 , by means of bevel gearing V¹, W¹, W¹, clutch x , shaft W, and bevel pinions W², and t , all combined and operating as described with reference to Figs. 8 to 10, of the drawings; 5th. Diamond or gem-cutters the enlarged head b , into which the gems α , are sunk and which is cut away at b^1 , b^1 , to leave the cutting sides of the gems exposed as described with reference to Figs. 11 to 13 of the drawings.

No. 2088. FREDERICK E. B. BEAUMONT & CHARLES J. APPLEBY, London, Eng., 20th February, 1873, for 10 years: "A Hydrostatic Rock or Stone boring or Prospecting Machine." (Appareil hydrostatique pour percer le roc ou la pierre ou sondage des mines.)

For sinking deep bore holes to serve as wells, or to give indication of the strata, wherein the pressure on the boring-tool is controlled and the boring-rod is raised and lowered by hydrostatic apparatus.

Claim.—1st. The cylinder b , with piston c , and tubular piston rod e , fitting over the fixed tube d , and attached at its lower end to the sliding cross head e , with tube g , carrying the boring-rod and rotated by toothed gearing h , h^1 , from the shaft h^2 ; 2nd. Combination with the cylinder b , the accumulators m and α , pumps n and p , pipes l , s , p^1 , p^2 , and reservoir r , in framing α ; 3rd. The provision of steam and exhaust passages, and a slide valve to the cylinder b , for actuating the piston c , by steam-power in order to adapt the machine for working a pumping boring tool.

No. 2089. FREDERICK E. B. BEAUMONT & CHARLES J. APPLEBY, London, Eng., 20th February, 1873, for 10 years: "Rock or Stone boring or Prospecting Machinery." (Machine à percer le roc ou la pierre, ou sondage des mines.)

Relates to the arrangement of machinery for applying tubular diamond, gem, or other boring tools or drills, to the production of deep bore holes to serve as wells or to give indication of the strata through which the hole is sunk.

Claim.—1st. In the slotted tube f , f^1 , passing through the hollow axis e , receiving rotary motion from the shaft d , through gearing d^2 , in combination with the sliding bearing g , clutch f , and hollow boring-rod h ; 2nd. Combination with the tube f , f^1 , and bearing g , the weight carriers n , n , chains ρ^1 , ρ^2 , chain-wheel α , spur wheel α^2 , pinion p^1 , and rope pulley p^2 ; 3rd. Combination with the hollow boring-rod h , the plug and shell h^1 , flexible water-pipe k^2 , with sluicing block k^2 , and force-pump k .

No. 2090. EDWIN H. GIBBS, New York, U. S., 20th February, 1873, for 5 years: "Apparatus for Manufacturing Soap." (Appareil pour la fabrication du savon.)

Claim.—The agitator composed of spirally arranged concave blades F, on a horizontal shaft D, in combination with the close mixing chamber C, for stirring, lifting and forwarding the materials and mixture within the said chamber, while acted on further by heat and pressure.

No. 2091. CHARLES G. C. SIMPSON, Montreal, Que., 20th February, 1873, for 5 years: "Improvements on Truss Bridges." (Perfectionnements dans la structure des ponts.)

Claim.—1st. The combination of the bottom chords α , with recessed prism d , and covers s ; 2nd. Prism d , having flanges f , and h ; 3rd. Prism d , having flanges t , and u , and entablature v ; 4th. Prism d , with recessed s , and covers s , in combination with the chord or chords α , and india rubber cover r ; 5th. The top chord when composed of wrought or cast iron plates, with web a , arranged horizontally as described; 6th. The manner of securing the ends of the chord α , when composed of iron wire.

No. 2092. HENRY B. CORNER, ALFRED D. WARREN & WILLIAM WARREN, Worcester, Mass., U. S., 21st February, 1873, for 10 years: "A Washing Apparatus." (Appareil de buanderie.)

Claim.—1st. Combination with the internal steam generating chamber B, having an inlet opening L of the stop-valve E, actuated by a spring I, 2nd. Combination with the chamber-plate or case B, and boiler A, in a washing apparatus of the bar K, and loop L, for securing the parts in position; 3rd. Combination with a wash-boiler A, of the internal steam generating chamber B, constructed with inclined sides.

No. 2093. ALBERT H. EMERY, New York, U.S., 21st February, 1873, for 5 years: "Anti-Friction Weighing Machine." (Appareil de pesage à anti-friction.)

Claim.—1st. The combination and arrangement of the thin plates 10, 10, etc., with the platform A, and frame around it. 2nd. The combination and arrangement in weighing machines of two or more hydraulic-pressure supports, which support the load to be weighed either in whole or in part whenever the chambers containing the liquids in the different pressure supports are not connected with those of the other supports, but each hydraulic pressure support receives its load and transmits its pressure to the weighing beam or beams independently of the others; 3rd. The combination and arrangement of the pressure column 28, ring 30, and thin diaphragms 37, and 27; 4th. The arrangement and combination of the cup-shaped diaphragm 38, with the case 31; 5th. The combination and arrangement of the two liquid pressure chambers in piece 26, separated by diaphragm 40, pressure column 41, and diaphragm 42; 6th. The combination and arrangement of the sealed pressure chambers in 26, and contained liquid, pipes 30, and contained liquid and the sealed pressure chamber and the contained liquid in piece 20, with the thin diaphragms 44, and pressure column 47; 7th. The combination and arrangement of two or more pressure chambers and contained liquid in piece or pieces 0, acting through diaphragms 44, against a single pressure column 47; 8th. The combination and arrangement of the thin diaphragms 44, pieces 45, nuts 46, and pressure column 47; 9th. The combination and arrangement of the pressure column 47, ring or plate 62, pressure chamber in 68, the contained liquid and the diaphragms 63, and 64, with the pressure column 65; 10th. The index 190, in combination with a suitable guide 181, and two or more levers arranged to operate in any manner described; 11th. The combination and arrangement with the levers or scale beams of weighing machines of thin plates to fix or connect their fulcrums in place of the knife edges and links or struts heretofore used.

No. 2094. JAMES E. EMERSON, Beaver Falls, Pa., U. S., CHAS. H. WATEROUS & GEORGE H. WILKES, Brantford, Ont., 21st February, 1873, for 5 years: "Improvements on Saws." (Perfectionnements aux scies.)

Relate to saws having removable teeth and to the adaptation of the teeth to the saw plate.

Claim.—1st. The removable saw tooth c, triangular in cross-section constructed in the form described; 2nd. The triangular formed tooth c, having the planing edges c', c', and angular back in combination with the angular groove c, in saw-plate A, and clamping-piece B; 3rd. The removable mouth-piece B, B; 4th. The mouth-piece B, B, in combination with the wedge B, or its equivalent; 5th. The notched tooth c, fig. 3, notched mouth-piece B, b, c', and b', and wedge b, fig. 1.

No. 2095. JOHN STARR, Halifax, N. S., 21st February, 1873, for 5 years: "Railway Rail Scabbard and Fish-Plate Slice." (Manchon et éclisse de rails des chemins de fer.)

The object of the invention is to prevent deflection of the rail ends between the ties by giving increased strength to the scabbard in a vertical direction.

Claim.—A railway rail-joint splice composed of the scabbard portion A, and outward lapped fish-plate portion c, bent from one piece of wrought metal plate constructed and applied as set forth.

No. 2096. WILLIAM GLEN, Toronto, Ont., 21st February, 1873, for 5 years. "Reversing Valve and Steam Chest." (Soupape de machine à vapeur à double action et boîte à vapeur.)

Claim.—The combination of the steam pipe-hole F; outside steam chamber H, and inside steam chamber J, connected together by the steam ports G and I, with the valve B, operated as described for the purpose of admitting steam into the cylinder or cylinders of an engine in such a manner that the best pressure may be exerted on whichever side of the piston the engineer may desire, producing by the aforesaid combination a reversible engine as described.

No. 2097. ALEXANDER F. YARWOOD, Guelph, Ont., 21st February, 1873, for 5 years: "Improvements in Melodeons." (Perfectionnements aux mélodéons.)

Claim.—1st. The placing of the pump A, beneath the reed-board and operating it through the combination of the treadle G, lever E,

rod D, and stay F, 2nd. The combination of the hand-stop H, lever I, and system of levers J, arranged for the purpose of operating the "swells" as described.

No. 2098. GEORGE STEPHENS & FRANK G. BECHER, Ottawa, Ont., 21st February, 1873, for 5 years: "Improvements on Trusses." (Perfectionnements aux bandages herniaires.)

To ensure freedom of motion on the part of the wearer without danger of displacing the pad.

Claim.—The pad A, working on the swivel B, the padded belt C, with the elastic insertion D, to which the truss E, is attached by means of the loops E.

No. 2099. ADAM CANT, Galt, Ont., 21st February, 1873, for 5 years: "Blind Slat Tenoning Machine." (Machine à faire les tenons des lames de persiennes.)

Claim.—The combination of the treadle G, bolt tightener H, and bolt D, arranged and operated as specified.

No. 2100. WILLIAM M. HOWLAND, Topsham, Me., & STEPHEN C. TAFT, Milford, Mass., U. S., 21st February, 1873, for 5 years: "Machine for reducing Wood to Pulp." (Machine à décortiquer le bois.)

Claim.—1st. The combination of the grinding stone bound with metal tire and clamped between the plates a, c, with the frame F, divided into partitions; 2nd. The projections of the plate C, to fit the recesses in the lower surface of the stone; 3rd. The combination of the frame F, weights G, stone D, the bevel-wheels b, b', on the sleeve around the shaft with pinions, worm-scrows, cog-wheels, drums and chains; 4th. Combination with the weights G, and frame F, the tipping carriage with the downward projecting-arm, the pin f, the latch and spring; and 5th. The revolving sieve, supported by rings, which form its ends and combined with the wood-grinding machine as set forth.

No. 2101. CARLOS D. MEIGS, Pierreville Mills, Que., 21st February, 1873, for 5 years: "An Oscillating Saw Gate." (Un porte-scie oscillant.)

The gate is attached to the sliding frame in the ordinary manner and the upper ends of the slide rods are arranged to retire at the up-and-down action of the saws.

Claim.—1st. The guide rods f, caused to recede at their upper ends in combination with the gate and saws attached thereto; 2nd. The guide rods f, pivoted at g, with gate and saws k, attached as described, in combination with the parts e and d, forming the toggle joint operating as described.

No. 2102. JOHN A. FORDON, Bay City, Mich., U. S., 21st February, 1873, for 5 years: "Dogs for Circular Saw Mills." (Clameaux à pointes pour les moulins à scies circulaires.)

The invention consists in a standard bolted to the side of the knee, carrying a vertical bar moving in diagonal guides, with downward inclined studs or spurs projecting from its face, said bar and its studs being operated by an eccentric lever and link.

Claim.—1st. A saw mill dog, provided with inwardly and downwardly projecting spurs c, for the purpose of securing the log to the carriage; 2nd. The standard B, B, slides a, a, the bar C, carrying the spurs c, and cross heads b, b, moving in said slides the friction rollers d, the eccentric lever D, and link E, for moving said bar C.

No. 2103. SAMUEL RAYNOR, New York, Assignee of Adolphine Cuppers, widow of Gustavus Cuppers, Brooklyn, N. Y., U. S., 25th February, 1873, for 5 years: "A Gas Illuminator." (Un réverbère à gaz.)

Claim.—1st. The combination of a cup and a burner so arranged that the light from the flame may pass downward through the cup, without being obstructed by any part thereof; 2nd. The bracket A, supporting the suspended cup C, in combination with a burner c, above the cup; 3rd. The slotted arm a, on the bracket in combination with the cup C, and burner c.

No. 2104. JAMES F. GORDON, Rochester, N. Y., U. S., JOSEPH M. CURRIER, Ottawa, Ont., & CHARLES C. COLBY, Stanstead Plain, Que., 25th February, 1873, for 15 years: "A Self Binding Harvester." (Une moissonneuse faisant les gerbes.)

Claim.—1st. An intermittently rotating gaveler in combination with balancing fingers operating conjointly; 2nd. The picker I, or its equivalent in combination with the endless belt of rakes F, 3rd. The ribs h, on apron G, in combination with the gaveler arms; 4th. The grain dividing teeth i, 5th. The rock-shaft P, with its fingers Q, in combination with the slats C, 6th. The clearers r, in combination with the picker; 7th. The combination of cam K, yoke L,

with its pitman Q, and the wheel J; 8th. The combination of wheel J, chain K, and ratchet wheel A; 9th. The combination of cam K, yoke M, with its pitman C¹, and lever A¹, 10th. The wire-clamping mechanism consisting of the fixed and movable jaws and their actuating devices, in combination with the binding arm; 11th. Combination with the wire clamping jaws and binding arm the sliding-plate S, with its finger e; 12th. The slotted cam sector A¹, operated as described for the purpose of imparting to the twister head an intermittently rotating movement; 13th. The gaveler arm H, extending laterally on each side of their shaft of sufficient width to form an unobstructed space for the passage of the binding arm; 14th. The finger r², or its equivalent in combination with the head of the binding arm; 15th. The slotted entrance h¹, for the binding arm having one or more of its sides made angular for the purpose of bringing the wire in position to ensure its being clamped by the jaws and to render the twisting operation certain; 16th. The double lipped wire clamping jaws K², provided with an opening of, between them arranged to operate conjointly with a sliding jaw S; 17th. A wire-twister head in combination with a clearer e¹, or its equivalent arranged to operate conjointly; 18th. A cutter-blade z¹, encircling the twister-head shaft A¹, in combination with the twister-head; 19th. Combination with the right and left hand threaded shaft A¹, the wire-twister and retaining nut; 20th. The chute board c, and hinged bar d, with slats C, in combination with the elevating bolts F. 21st. The automatic stop arranged to operate conjointly with the gaveler. 2nd. An automatic binding device in combination with a harvester so arranged as to be capable of adjustment for the purpose of binding the gavels contrarily.

No. 2105. JAMES O. STACKHOUSE, St. John, N. B., 28th February, 1873, for 5 years: "A Snow Plough." (Une charrue à neige.)

Claim.—A snow plough, the sides of which are parallel horizontally, and splay outward, vertically, having a raised central ridge A, and edge-ridges B, to form an intermediate concave or hollow rising floor or inclined and meeting the curvature of the mould-board D, to constitute a continuous sweep curving outward, and of increasing breadth or capacity ascendingly to the outlet for casting off the snow.

No. 2106. ALGERNON S. WHITING, Cedar Dale, Assignee of Francis S. Gilbert, Oshawa, Ont., 28th February, 1873, for 5 years: "Mode of Attaching a Mowing Seythe to the Snaith." (Manière d'emmancher les faux.)

Claim.—1st. The double toothed or plain joint A, B, B', Figs. 1, 2 and 5, (toothed for the horizontal and plain for the vertical motion by preference), giving a vertical and horizontal motion to the seythe and enabling it to be closed up to the snath I, r transport; 2nd. The bending of the heel F, Figs. 3 and 4, so as to form a vertical joint with the hanging B², also the prolongation of the back of the seythe G², Fig. 5, so as to form the joint in lieu of bending the heel F, Figs. 3 and 4, and securing it thereto.

No. 2107. GEORGE W. HUNTER, Montreal, Que., & ARCHIBALD MCD. FORSTER, Hamilton, Ont., 28th February, 1873, for 5 years: "Tobacco Box and Cutter." (Boite hache-tabac.)

Claim.—The box A, with concave top C, knife D, and slot or slots E, arranged as and for the purposes set forth.

No. 2108. JOHN W. STANTON, Barnsville, Ohio, U. S., 28th February, 1873, for 5 years: "A Grate Bar." (Une barre de grille.)

Claim.—1st. A grate-bar having the lateral projections a, a, set alternately upon the two sides of the wedge shaped top; 2nd. The combination of the grate-bars C, C, having the lateral projections a, a, and the pivoted-bar D, with projections b, b, and d, d, and lever E.

No. 2109. GEORGE W. VERRALL, Chatham, Ont., 28th February, 1873, for 5 years: "Machine for Adjusting Cards, etc., on the Planers of Printing-Presses." (Machine pour ajuster les cartes, etc., sur les platines des presses d'imprimerie.)

Claim.—1st. The guide A, with the slot B, the lip and pin holes C, C, C; 2nd. The slide D, and the combination of said slide and guide.

No. 2110. WILLIAM HARPER & WILLIAM SMITH, Montreal, Que., 28th February, 1873, for 5 years: "Spinning Bait for Fishing." (Appât-hélice pour la pêche.)

Claim.—1st. The combination of the wire c, spinners d, and f, and beads e and g; 2nd. The combination of the spinner d, with the spinner f.

No. 2111. MICHAEL COOKERLY, Baxter Springs, Ka., U. S., 28th February, 1873, for 15 years: "Improvement on Hoes." (Perfectionnements aux houes.)

Consists in the peculiar shape of the hoc blade and in the manner of its attachment to the handle.

Claim.—The hoc as described as a new article of manufacture, consisting of the rhomboidal blade a, and shank c, applied and secured thereto as set forth to receive a suitable handle.

No. 2112. FREDERICK G. BELL, New York, U. S., 28th February, 1873, for 5 years: "Dressing for Leather." (Corroyage des peaux.)

Claim.—The process of preparing dressing for leather with the following ingredients, viz. castile soap, soda, bowery tallow, carbonate of ammonia, borax, gum tragacanth, lamp-black, neat's-foot oil and water mixed in the proportions described.

No. 2113. WOODARD THOMPSON, Gardiner, Me., U. S., 28th February, 1873, for 5 years: "A Road Scraper." (Appareil à nettoyer les chemins.)

Claim.—1st. The inclined beam and scraper A, a rounded face-shoe T, runner C, cross bars B, B, and tongue E, the several parts being constructed and arranged for operation as set forth; 2nd. The combination of the slotted bar J, lever K, wheel L, forked standard P, and houldered standard R all constructed and arranged with a road-scraper; 3rd. The rudder c, and scraper f, combined with the beam A, and arranged to operate as set forth.

No. 2114. MALCOLM F. MCINTYRE, Girard, Pa., U. S., 28th February, 1873, for 5 years: "Rail-road Rail and Fastening." (Rail et ajustage de rails de chemin de fer.)

Claim.—1st. A railway rail composed of the portions A, and B, constructed and fitted together in the manner set forth; 2nd. A railway rail having an inserted cable C. 3rd. The twin bolts D, constructed and applied as set forth for fastening the fish-plate to the rail. 4th. The washer F, having the recesses e, e, in combination with the bolt G, nut G, and bent wire I.

No. 2115. JOHN GOLDIE & DANIEL CAMERON, Galt, Ont., 28th February, 1873, for 5 years: "A Shingle Machine." (Une machine à bardeau.)

Consists in the application to the carriage of a friction-bar and interposed elastic cushions which are operated by a friction-wheel on a continuous rotary shaft.

Claim.—The adaptation and application to the carriage B, and saw table C, of the friction-bar F, interposed elastic cushions G, and friction-wheel H, to carry forward the carriage to the saw.

No. 2116. JOHN GRANTHAM, London, England, 1st March, 1873, for 5 years: "Steam Carriages for Tramways." (Voitures à vapeur pour les chemins à rails de bois.)

Claim.—1st. The combination with a tramway carriage of a chamber or chambers A, so arranged as to leave a clear passage through the carriage, such chamber or chambers containing a boiler B, and steam engine J. 2nd. The combination with the platforms of a tramway carriage of the starting and reversing handles S, and R, and the rods E, and K; 3rd. Combination with a tramway-carriage of the rising and falling wheels A, and B.

No. 2117. PERRY G. GARDINER, New York, U. S., 1st March, 1873, for 15 years: "A Railroad Car Spring." (Un ressort de voiture de chemin de fer.)

Claim.—1st. The separate bars 2, 1, 2, 3, 2, 5, 2, forming the elliptical portion of a spring suitable for rail-road cars and other purposes, hinged or set alternately one upper-bar 2, next to a lower bar 1, and vice versa; 2nd. The arrangement of the bars 2, 1, 2, 3, 2, 5, 2, which constitute the two sides or upper and lower parts in such a ratio, to each other that the one part shall be composed of an even number of bars, and an uneven number on the other part preserving at the same time an equal strength and elastic action in the upper and lower parts; 3rd. The clamps A, A, for holding the bars 2, 2, 2, 2, and 1, 3, 5, and affording them a suitable central bearing, constructed, arranged and operating in the manner described. 4th. The combination of the clamps A, A, having the sectional guides b, b, and bolt b¹, with the spiral spring B, the whole arranged and operating as set forth.

No. 2118. HORATIO P. ALLEN, New York, U. S., 1st March, 1873, for 15 years: "Hydrogen Gas Generator." (Générateur à gaz hydrogène.)

Relates to improvements in arranging and setting retorts vertically around a furnace or fire-place, concentrically, in combination with suitable flues or passages, built within the thickness of the outer-wall, through which the steam pipes pass on their way to the distributors, in such a manner that the steam is superheated before it enters the retort whereby its effect on the incandescent coal in the retorts is increased.

Claim.—1st. The use of several vertical retorts A, arranged around one fire-chamber C, for the decomposition of steam into permanent gases; 2nd. The arrangement of lateral delivery-pipes N, converging to a central-vertical main pipe P, from a circle of vertical retorts A, in which steam is decomposed; 3rd. The combination with the bottom mouth-piece E, of a vertical retort used

for decomposing steam into permanent gases, of an annular chamber G, perforated with holes, for the delivery of steam in jets, into such retorts; 4th. The arrangement for superheating steam to be decomposed into permanent gases, of passages H, II, constructed in the wall W, V, of the oven which heats the retorts on the outside of the fire-brick lining K, through which the steam-pipes F, pass, constructed, arranged and operating as set forth.

No. 2119. THOMAS C. TILLINGHAST, Belleville, Ont., 1st March, 1873, for 5 years: "Machine for Ironing the Bottoms of Trouser Legs." (Machine à repasser le bas des jambes des pantalons.)

Claim.—The block A, the hinge C, the wedge D, the iron E, the foot of the block F, the pin-hole G, the pin in the foot and H, the pin below the hinge connecting the two pieces of the block.

No. 2120. LEONARD D. HOWARD, St. Johnsbury, Vt., U. S., 1st March, 1873, for 5 years: "A Reim-Holder." (Un porte-guide.)

Constructed of brass or other metal and attached to the dasher of a carriage. It consists of a pair of serrated jaws pivoted to a plate and geared together so as to operate in unison and combined with springs which cause them to grip the reins.

Claim.—The plate G, serrated jaws A, with cams I, cases L, L, pins C, C, B, B, and springs J, J, in the slotted spur K, button M, with button-screw N, clasp O, with clamping-screw P, and clasp-screws R, R.

No. 2121. OEL B. AUSTIN, Potsdam Junction, N. Y., U. S., 1st March, 1873, for 5 years: "A Horse Rake." (Un rateau à cheval.)

Consists in the construction and arrangement of the thimbles holding the teeth and the mode of securing the same thereto; the devices for raising and lowering the teeth to adapt them to different surfaces; the dumping apparatus, and the gauge-bar for keeping the teeth in proper position.

Claim.—1st. The thimbles D, having the shank A, with oblique grooves a, communicating with openings a', in the sockets a'; 2nd. The weighted lever G, link H, and I, shaped lever e, in combination with the flexible connection F, bar F, and teeth E; 3rd. The adjustable connection F, in combination with the adjustable teeth E, bar F, and weighted lever G, 4th. The combination of the rod A, thimble D, adjustable standard C, teeth E, arms I, and adjustable gauge K.

No. 2122. PITT W. STRONG, Farmersville, Ont., 1st March, 1873, for 5 years: "Milk Weighing Can and Conveying Spout." (Boite à peser le lait, avec siphon.)

Claim.—1st. A milk-chamber or can A, when constructed with a concave or funnel-shaped bottom B, converging towards the outer edge and having a cylindrical discharge pipe C, or its equivalent; 2nd. The application to the discharge pipe C, of a stop-valve D, within the can A, and operated by a rod and handle G; 3rd. The conductor pipe E, when constructed with an inwardly tapering elbow to receive the discharge pipe C, in combination with the can A; 4th. The arrangement and application of the hook H, and spring I, for securing the pipe E, in the discharge pipe C.

No. 2123. EBENEZER B. COLBY, Franklin, N. H., U. S., 1st March, 1873, for 5 years: "An Ice Creeper." (Grappin à glace.)

Claim.—The combination of the box or case A, the serrated spur D, and the cam b, and arbor c; in the combination of either or both the lips B, C, with the box or case A, and the serrated spur D, provided with mechanism for operating it as described.

No. 2124. DAVID G. CONGER, Chicago, Ill., U. S., 1st March, 1873, for 5 years: "Machine for the Manufacture of Artificial Roofing." (Appareil pour la fabrication d'une composition à toiture.)

Claim.—1st. A bed A, having parallel side rails E, in combination with a carriage H, adapted to run on said rails and to distribute cement and a sheet of paper or other similar material; 2nd. Combination with the above rollers K, for pressing and uniting through the cement the sheets of paper to the sand; 3rd. The combination with the carriage H, of two or more cement distributing hoppers and a corresponding delivery of paper or other sheets; 4th. The roller K, grooved as shown at o; 5th. The roller K, provided with a flange o, to bear outside of the rails E; 6th. The rails E, having cutting edges and secured by slot and set-screw to and along the sides of the bed; 7th. The hooks a, or their equivalent arranged in combination with the bed for securing the ends of the paper sheets from dragging; 8th. The transverse cutting edges R; 9th. The hoppers L, made of the shape described and provided with a closing slide M.

No. 2125. JULIUS S. SHAILER, Boston, Mass., U. S., & JOHN C. FORD, Montreal, Que., 3rd March, 1873, for 5 years: "A Knitting Machine." (Une machine à tricoter.)

Consists of an adjustable guard arranged to keep the loops formed by the machine close down upon the top of the cylinder and clear of the latch, which by this means is free to form the next loop, thus ensuring with certainty the formation of the stitch.

Claim.—1st. The guard i, with bevelled edge; 2nd. The combination of the flange g, arm p, curved rod h, guard i, and set screw k; 3rd. The cam groove m, in combination with the diagonal sliding die n; 4th. The plate r, with two notches s and t.

No. 2126. JOHN F. WEBSTER, Hamilton, Ont., 7th March, 1873, for 5 years: "A Sewing Machine Treadle." (Une marche de machine à coudre.)

It consists of an oscillating walking-beam pivoted at the point to a brace which projects from the treadle-bar.

Claim.—1st. The treadles a, a, having projections or points b, at the toe; 2nd. The arrangement of the universal joint c, in combination with the walking-beam f, connecting rod h, and treadles a, a.

No. 2127. AARON VAN GUYSLING, West Albany, N. Y., U. S., 7th March, 1873, for 10 years: "Railroad Chair." (Coussinet de rail de chemin de fer.)

Claim.—The railroad-chair A, having the fixed lip B, the detachable lip c, and the key-bolt or pin D, as described.

No. 2128. AARON VAN GUYSLING, West Albany, N. Y., U. S., 7th March, 1873, for 10 years: "Railroad Chair and Support." (Coussinet et support de rail de chemin de fer.)

Claim.—1st. The railroad chair-support, consisting of the supports A, both separate and connected by the tube B, the chair C, having the fixed lip C, and the detachable lip C', the key-bolt or pin D, the rubber or wooden block G, the wooden or rubber block F, and the connecting bar E, said chairs being slotted to receive the bent ends of the connecting bar and for the passage of the wooden blocks; 2nd. The chair C, fitting over the hollow supports A, having the fixed lip C, detachable lip C', and the key-bolt or pin D, and provided with an opening in its side for the introduction of the rubber block G, which is kept in place by the sliding door H; 3rd. The combination of the horizontal metallic bar or tie B, with the vertical hollow supports A.

No. 2129. JACOB P. TIRRELL, Charlestown, Mass., U. S., 7th March, 1873, for 5 years: "Gas Electrical Lighting Apparatus." (Appareil électrique pour allumer le gaz.)

Claim.—1st. The combination with a burner of an electro-magnet and an armature which carries the circuit-breaker, and is otherwise constructed, disposed and arranged to turn the gas on and off, and to automatically break and establish the circuit; 2nd. The combination with a burner of an electro-magnet and an armature which carries the circuit-breaker to automatically establish and break the circuit and has the circuit-breaker so located as to emit its spark at the burning point of the burner; 3rd. The combination in one apparatus of all the features of the two preceding claims; 4th. The arms o, Q, sector-wheels f, n, pins l, l, m, m', wires M, magnet E, lever H, carrying armatures G, circuit-breaker J, pawl S, and ratchet-wheel R, all combined, arranged and applied to a burner for operation.

No. 2130. MICHAEL J. STEIN, New York, U. S., 7th March, 1873, for 5 years: "Boot and Shoe Sewing Machine." (Machine à coudre les chaussures.)

Relates to the feeding of the work, to the presenting of the work to the needle, to the combined operation of the awl and needle in punching and making the stitch and to the method of using it with a last of ordinary construction even where a straight needle is employed.

Claim.—1st. The combination with a vertically reciprocating straight awl A, of a vibratory rotary curved needle h, supported on a stock i, having a reciprocating sliding movement towards and away from the awl in a path at an angle to the path of movement of the latter, so that the awl shall enter the work from one side, and the needle shall then be caused by the sliding movement of its stock to penetrate the same from the opposite side until it meets or nearly meets the awl and then to complete its course by its rotating movement, following the aperture made by the awl which with the awl as the needle advances; 2nd. The combination of the awl A, and needle h, constructed and operated as specified in the preceding clause, with the looper as described; 3rd. The combination of the awl A, and edge-bender I, moving together laterally to and fro and operating to grasp the work and effect the feed; 4th. In combination with the awl A, and edge bender I, operating together as described, the channel guide W, moving to and fro laterally with the same during the feed movement and pressed alternately tightly and with a yielding pressure on the work; 5th. The combination for the purpose of bending the edge or outside

champer or the sole of the awl A, and edge-bender I, under the arrangement described, so that the awl shall first penetrate the sole from the inner channel to the proper depth and the edge-bender shall then bend over the point of the awl that portion of the sole between the said point and the edge of the sole, 6th. In combination with the needle h, awl A, and edge-bender I, operating together as described, the yielding last support b, having an up and down movement and locked rigidly in place at proper intervals; 7th. The combination with the sliding stock i, which carries the rotary needle h, of the means herein described or their substantial equivalent for varying the length of movement of said stock in order to obtain loops of different sizes as required for light or heavy work; 8th. The combination of the awl A, edge-bender I, and channel-guide W, all supported in and moving with a laterally sliding reciprocating head K, arranged in the frame of the machine above the needle stock, said parts being actuated and operating together as set forth; 9th. In the combination with the reciprocating sliding head K, which carries the awl A, and edge-bender I, of the means described, or their substantial equivalents for varying the length of movement of said head and consequently regulating the feed; 10th. The combination, in a machine for sewing boots and shoes, with awl A, and edge-bender I, operating together, to bend the edge over the point of the awl of an opener or separator g, arranged to operate in connection with said parts and between the sole and the last whether said combination be used in connection with a straight or curved needle.

No. 2131. BRADLEY S. BRYANT, Hanson, Mass., U. S., 7th March, 1873, for 5 years: "Mode of Finishing the soles of Boots and Shoes." (Manière de finir les semelles de chaussures.)

Claim.—A boot or shoe-sole having its outer or treading surface either in whole or in part covered or coated with a flock or disintegrated material as described.

No. 2132. DAVID G. CONGER, Chicago, Ill., U. S., 7th March, 1873, for 5 years: "A Roofing Compound." (Une composition de toiture.)

Claim.—A roofing compound made of the following materials: reduced or paving coal, tar or asphaltum, resin, Akron or Newark cement, sand and field-plaster, or gypsum, the whole mixed together in the proportions described.

No. 2133. A. HUNTER & EGBERT H. OSBORNE, Quincey, Ill., U. S., 8th March, 1873, (Extension of Patent No. 2082) for 5 years: "A Grain Cleaner." (Un nettoyeur à grain.)

No. 2134. ALONZO HITCHCOCK, New York, U. S., 10th March, 1873, for 5 years: "Process for Covering or Incorporating any Vegetable Substance with Graphite." (Procédé pour enduire ou incorporer les substances végétales avec de la plombagine.)

Consists in incorporating earth and metals, but more especially graphite with parchment during the transformation of vegetable fibre into the material known as parchment, or analogous substance.

Claim.—1st. Any vegetable material incorporated or covered with graphite by means substantially as set forth in the specification; 2nd. The process described for combining graphite or suitable materials with vegetable fibre or matter, the same consisting in treatment with acids or chemicals so as to form a gelatinous substance and applying the graphite or other material thereto as set forth.

No. 2135. WILLIAM P. SCOTT, Chatham, Ont., 10th March, 1873, for 5 years: "A Car-Coupler." (Un attache-char.)

A self-coupler, which is actuated by the pressure of the cars when they come together.

Claim.—1st. An improved slide C, actuated either by the front of the car or by a sleeved buffer when said improved slide passes under the guide or guide-tube F, and has a slot in it for the purpose described; 2nd. The altered guide-tube F; 3rd. A spiral spring or springs, whenever said form of spring is used for supporting or keeping any pivoted link E, in a horizontal position each separately or combined for the purposes specified.

No. 2136. FREDERICK G. FORD, Bridgeton, N. J., U. S., 10th March, 1873, for 5 years: "A Furniture Castor." (Une roulette de meuble.)

Claim.—The annular flange or ferrule a, provided with pins or teeth i, on its upper edge, and formed on the upper side of the plate D, of the castor described to fit in a corresponding groove b, on the end of the leg and the pins or teeth to penetrate into the wood.

No. 2137. WILLIAM H. RODDEN, Toronto, Ont., 10th March, 1873, for 5 years: "A Metallic Blind." (Une persienne en métal.)

The shutter is so constructed as to possess the properties of a Venetian blind or sun shade and to be ordinarily fire and burglar proof.

Claim.—1st. A shutter composed of an angle iron or steel frame A, eccentric movable metallic slats B, hinged at the ends to form bearings d, d, and pivoted there to the frame A, on shouldered rivets and wired at one edge to connect them with the upright or transverse working rod or bar C; 2nd. Combination with the movable slats B, B, and working bar or rod c, the stat lock or fastener composed of the screw G, and worm wheel H, with its crank-pin g, and the cross-bar or brace E, which carries the lock.

No. 2138. RUSSELL HAWKES & HENRY J. PAINE, Providence, R. I., U. S., 10th March, 1873, for 15 years: "A Spark and Smoke Consumer for Locomotives." (Un appareil fumeur pour les locomotives.)

Claim.—1st. The combination of the pipes or conductors K, I, with the o. or and inner shells c, c, and one or more guides e; 2nd. The combination of the conductors K, and spark return tubes I, with the outer and inner shells c, c, and deflecting cone G, and the flanges e, and d, and guides e; 3rd. The combination with the fire-box and boiler in a locomotive of one or more air and spark pipes or conductors I, and deflecting arch J, M; 4th. The combination with the interior of the boiler and smoke-stack in a locomotive of one or more pipes I, and one or more spark conductors K, so arranged in relation to each other that the sparks will descend or pass down through the spark conductor or conductors and be returned through the pipe or pipes, flues or flues passing through the boiler, on a line or nearly so with the pipe or pipes admitting air from the front of the engine; 5th. The combination with the smoke-chamber and boiler of a locomotive of a draft passage open and extending from front to rear of the engine and a spark conductor for directing or conducting the sparks down through the inside of the smoke-stack so that they will be impinged upon and be mixed with and pass back to the fire-box with the air received at the front of the boiler as it is forced back by the forward movement of the locomotive; 6th. The combination with the smoke-stack of a locomotive boiler of one or more spark conductors, the lower open end or ends of which intersect a draft passage or passages leading from the front of the smoke-chamber back to the fire-box.

No. 2139. THOMAS J. O'SULLIVAN, Hamilton, Ont., 10th March, 1873, for 5 years: "A Nutmeg Grater." (Une râpe à muscade.)

Claim.—1st. The stationary bed or bottom K, in combination with the sliding grater A, A'; 2nd. The sliding grater consisting of the plates A, A', sliding in the grooved bed K, and provided with the handle B; 3rd. In combination with the bed K, and sliding grater A, A', the tube or feed E, and spring H; 4th. In the arrangement of the hole F₁ in the bed K, to receive the nutmeg; 5th. The arrangement of the socket e, marker D, rod e₁, in combination with the bed K, grater A, A', tube F.

No. 2140. JOHN D. FITCH, Ancaster, Ont., 10th March, 1873, for 5 years: "A Truss." (Un bandage herniaire.)

Claim.—1st. A wide belt truss A, constructed as shown, with movable pads B, elastic gussets c, c, d, d, perineal straps d, d, in combination with the straps g, and buckles f; 2nd. In the movable pads B, in combination with the belt A.

No. 2041. PITT W. STRONG, Farmersville, & JAMES MANUAL, Morton, Ont., 10th March, 1873, for 5 years: "A Cheese Box." (Une boîte à fromage.)

Claim.—1st. A cheese-box composed of sections A, telescoping together to receive two or more cheeses for transportation; 2nd. The slats B, and cord C, applied as set forth for holding the sections A, together in the manner described.

No. 2142. ROBERT W. PARK, Philadelphia, Pa., U. S., 10th March, 1873, for 5 years: "A Vapour Burner." (Un bec à gaz.)

Relates to the effective vaporizing of the hydro-carbon from which the ignitable gas is generated.

Claim.—1st. The combination, in a burner of the tip D, the opening d, through which issues a supplemental jet of gas, and a plate heated by the said jet, and having a tongue, extending into the supply-pipe; 2nd. The combination of a hood or shield K, with the heating-plate or wing H; 3d. The combination of the ring and tongue H, h, heated by a supplemental flame, the shield K, and the sleeve K₁, encircling the supply pipe; 4th. The combination of the hood K, heating-plate H, sleeve K₁, tube or passage G, and tail-piece K₂, projecting from the said sleeve.

No. 2143. THOMAS ARMSTRONG, Hamilton, Ont., 10th March, 1873, for 5 years: "A Horse Hoof-Spreader." (Machine pour étendre les sabots des chevaux.)

For the treatment of contracted feet in horses. It consists of jointed levers with variable centres, a screw and other minor appliances for operating the levers.

Claim.—1st. The combination and arrangement of the levers *b*, *b*, middle-piece *c*, tightening-screw *d*, spiral-spring *C*, grooved-washer *f*, nut *p*, and thumb-screws *h*, *h*; 2nd. The levers *b*, *b*, in connection with the screw *d*, of whatever form when used for the purposes set forth.

No. 2144. LINUS A. PADDOCK, Peconica, Ill., U. S., 12th March, 1873, for 5 years: "A Horse Rake." (Un râtelier à cheval.)

This invention applies to that class of rakes in which the curved wire tooth is used and known as the "dump rake," and consists more particularly in an improved foot lever and in the manner of securing the teeth to the axle-tree.

Claim.—1st. In combination with axle or rake-head and the tooth of a hay-rake, the saddle or clamp *C*, and fastening devices for securing the tooth to the axle or head; 2nd. The combination of the tooth *D*, with its upper part encircling or nearly encircling the head or axle *A*, and the staple or loop *D*, with fastening devices; 3rd. The combination of the crooked foot lever *E*, with its foot-pieces *E*, *E*, elbow attachment *E*, socket *f*, and cross-piece *g*; 4th. The combination of foot-lever *E*, connecting-lever *F*, stud *F*, and axle or head *A*, with or without the hand-lever *f*; 5th. The combination of axle or head *A*, saddle or clamp *C*, staple *D*, tooth *D*, foot-lever *E*, stud *F*, socket *f*, attached to cross-piece *g*, all those parts constructed, arranged and operated as set forth.

No. 2145. JAMES E. FRAZER, Brantford, Ont., 12th March, 1873, for 5 years: "A Balance Farm Gate." (Une barrière à contrepoids.)

Claim.—1st. The upright *f*, having foot *G*, working in stop *D*, and guide-rod *H*, working in cup *B* also the box *O*, fastened on upright *f*; 2nd. The application of wide mortises in uprights *I*, *F*, *K*, *L*, through which cross-bars *M*, pass, and also the pins *N*, which keep bars in position, and allow the front of the gate to be elevated.

No. 2146. THOMAS HENDERSON & WILLIAM G. WRIGHT, Hamilton, Ont., 12th March, 1873, for 5 years: "A Sewing Machine." (Une machine à coudre.)

Consists in giving the shuttle a continuous rotatory movement and in arranging the thread from the spool to the needle without passing through the top of the needle bar.

Claim.—1st. A continuous rotary movement of the shuttle *H*, in the circular race *G*, in combination with the gears *N*, *O*, cam *L*, thread-shifter *J*, spring *S*, bar *K*; 2nd. The arrangement of the needle-thread passing from the loop *I*, to washers *S*, projection *R*; 3rd. The arrangement for securing the cloth-plate by the screws *c* and *d*; 4th. The construction of the shuttle in the same radius as the circular race, to fit it as shown in sheet *I*; 5th. The combination with the thread-shifter *J*, cam *L*, and gears *N*, *O*, race *G*, threading and taking the shuttle-thread from the bottom of the shuttle.

No. 2147. JOHN V. HOUGH, Sterling, Ont., 12th March, 1873, for 5 years: "A Harrow." (Une Herse.)

Claim.—The combination of the slotted-lugs *D*, anti-friction rollers *F*, pins *E*, and rings *G*, arranged and operating as set forth, for connecting the several sections of the harrow in the manner described.

No. 2148. HENRY PAGIUBLO, Dunham Flats, Que., 12th March, 1873, for 5 years: "Maple Sap Clarifying and Evaporating Apparatus" (Appareil à clarifier et vaporiser la sève d'érable.)

Claim.—Elle consiste dans la combinaison du clarificateur *D*, on toile de cuivre, ou en fer-blanc perforé ou en toile de fil-de-fer, avec la division transversale *C*, du bassin tel que décrit.

No. 2149. CHAUNCEY BUCKLEY & LODOWICK L. SAWYER, Meriden, Ct., U. S., 12th March, 1873, for 15 years: "A Curtain Fixture." (Un rouleau de rideau.)

Designed for rolling the curtain from the top down or from the bottom up as occasion may require

Claim.—1st. A grooved pulley for curtain fixtures formed from two discs of sheet metal secured together at their centre, one half the groove formed in each part and corrugated in the process of striking up; 2nd. The arrangement of the friction-plate *G*, between the roll and the mechanism of the fixture, made adjustable by the screw *H*, passing through the fixture and friction plate into the roll; 3rd. The combination of the friction plate *G*, the pulley and its ratchet with the square or angular-shaped sleeve *d*; 4th. The ratchet *c*, within the pulley and so as to form the bearing upon which the pulley revolves freely in one direction and engaged in the reverse direction; 5th. The halyard-plate *F*, combined with the ratchet *c*, within the said halyard-plate and turning freely therein in one direction and engaging in the other direction.

No. 2150. LEVI K. FULLER, Brattleborough, Vt., U. S., 12th March, 1873, for 10 years: "Improvement on Reed Organs." (Perfectionnement des orgues à jeux d'anches.)

Consists in the stop mechanism whereby the motion of the fan can be instantly arrested by the interposition of a resisting medium to overcome the rotation

Claim.—The combination of the stop-lever *J*, connecting rod *h*, and slide *E*, with the spur *b*, or its equivalent, for controlling the motion of the fan-shaft *D*, in parlor organs.

No. 2151. GEORGE A. KENNEDY, Compton, Que., 12th March, 1873, for 5 years: "A Clothes Rack." (Un séchoir à linge.)

Consists of an open elastic band or hoop of sheet iron with sockets formed on the outside to receive double wire arms of various shapes on which the clothes may be suspended.

Claim.—The band *A*, set screws *B*, lugs *C*, *C*, sockets *D*, *D*, arms *E*, *E*, with bond *F*, *F*, and hook *G*; 2nd. The plate warner *H*, fig. 2; 3rd. The coiled arms *K*, fig. 3.

No. 2152. THOMAS MACBETH, Blenheim, Ont., 12th March, 1873, for 5 years: "Carriage Pole and Thill Shifter." (Ajustage des limons et limonnières de voitures.)

Consists in substituting spring-bolts in lieu of the ordinary nuts and bolts now in use.

Claim.—The combination of the spiral spring *F*, casing *E*, heads or washers *D*, and rods *C*, working in conjunction with the clips *B*.

No. 2153. ROBERT HITCHCOCK, Watertown, N. Y., U. S., 12th March, 1873, for 5 years: "Improvements on Lamps." (Perfectionnements aux lampes.)

Relates to the burning of heavy oils in lamps in such manner that a brilliant flame without smoke may be produced without the use of a chimney.

Claim.—1st. A lamp for burning heavy oils, in which the wick-tube *a*, or holder and oil-reservoir *A*, are combined with conduits or passages *f*, for conducting air both to the exterior and to the interior of the flame, mechanism for forcibly impelling air through said passages, and a deflector or cone *g*. 2nd. The combination of the auxiliary reservoir *C*, and the main reservoir *A*; 3rd. A lamp of the kind specified, the employment of heat-conducting rods or wires *l*, to conduct heat to the oil both from the external casing *D*, and other shell *E*, of the oil reservoir; 4th. The employment of ash shields *h*, and *F*, or boxes; 5th. The construction and arrangement of the wick-raising mechanism consisting mainly of screw rod *n*, coupling sleeve *o*, thimble *p*, button *q*, pin *r* and *s*, rod *t*, and sleeve, or their equivalents as described.

No. 2154. JOHN MILLER, Perth, Ont., 12th March, 1873, for 5 years: "Sewing Machine Hemmer." (Lames à ourler, des machines à coudre.)

Claim.—A hemmer composed of the base plate *A*, formed with a guide-edge *C*, and sheath *D*, and of an adjustable bar *E*, sliding thereon, carrying on its end within the sheath, the hem-folder *G*, the several parts arranged to operate in the manner set forth.

No. 2155. THOMAS H. HICKS, Chatham, Ont., 17th March, 1873, for 5 years: "Process and Machine for Making Gas." (Procédé et appareil pour faire le gaz.)

Claim.—The process of forcing the gas generated in the tank *A*, through the oil, in the tank *B*, and the combination of the tanks *A*, *B*, *C*, with the pipes *1*, *2*, *3* and *4*.

No. 2156. JOHN H. STONE, Hamilton, Ont., 17th March, 1873, for 5 years: "A Kerosene Lantern." (Une lanterne à kérosène.)

Claim.—1st. The flat circular air-chamber *d*, and opening *d*, in combination with the tubes *c*, *c*; 2nd. Combining the oil-cup and bottom *a*, of the lantern; 3rd. The arrangement of the holes *l*, in the collar *b*

No. 2157. LEVI K. FULLER, Brattleborough, Vt., U. S., 17th March, 1873, for 10 years: "A Parlor Organ." (Un orgue de salon.)

Claim.—1st. The combination with the frontal columns *D*, *D*, consoles *C*, *C*, and body front *B*, of the concave columnar members *f*, *f*; 2nd. The pilasters *G*, *G*, in combination with the ends of the case; 3rd. The pilasters *G*, *G*, of the ends, in combination with the frontal columnar projections *D*, *D*, consoles *C*, *C*, and concave columnar members *f*, *f*, forming the front and ends of an organ case.

No. 2158. CYPRIEN M. TESSIÉ DU MOTAY, Paris, France, 17th March, 1873, for 5 years: "Process for Treating Lyes Resulting from the Preparation of Woody and other Fibres and Waste Waters after the Cleansing of Fabrics." *Procédé de traitement des lessives résultant de la préparation des ligneux et des eaux sales après le lavage des tissus.*

Claim.—1st. The process described for recovering for re-use the lyes and waters after the boiling down of woody fibres and the washing of fabrics and filaments; 2nd. The boiling of spent lyes or wash waters after their impregnation with a gas or a bicarbonate and a sulphuret for producing a precipitation of the impurities contained in such lyes and wash-waters; 3rd. The precipitation of the resinates or the ulmats after they or one of them, have been acted upon by a gas or a sulphuret in the manner described, whether the precipitation be assisted by the adding of sulphydric-acid to the heated liquor or not.

No. 2159. WILLIAM A. COGSWELL, Rochester, N. Y., U. S., 20th March, 1873, for 5 years: "Improvement on the 'Judson Governor' for Steam Engines." (*Perfectionnement au régulateur dit "de Judson" pour les machines à vapeur.*)

Consists in the employment of a hardened seat in the casing and of a hardened removable piston head.

Claim.—1st. The governor valve described, the hardened seat *b*, when arranged and applied as and for the purpose set forth; 2nd. The hardened piston-head *B*, when arranged and applied as described.

No. 2160. JOSEPH GILLESPIE, Hamilton, Ont., 20th March, 1873, for 5 years: "A Grain Threshing Machine." (*Machine à battre les grains.*)

Claim.—The shoe *C*, fixed in the threshing machine (immovable) having the screen frame *F*, and screen *A*, working on it with an end to end (or lengthwise) motion by means of the crank *B*; In the combination of the crank *B*, with the screen *A*, and frame *F*, also the revolving screw *G*, for carrying the grain, etc., to elevator, also in the adjustable wind-board *E*, with the ratchet *N*, and handle *O*, together with the combination and arrangement of the several parts, all operating as and for the purposes set forth.

No. 2161. THOMAS WHITWELL, Stockton-on-Tees, Eng., 20th March, 1873, for 5 years: "Apparatus for Heating Air and Gases." (*Appareil à chauffer l'air et les gaz.*)

Consists of two furnaces, ovens, or chambers, each enclosed by walls contained in an iron case and divided by other walls into several narrow compartments.

Claim.—1st. The oven or heating chamber, constructed with partition and stay-walls and having openings fitted with plugs and doors *D*, *D*1; 2nd. The oven or heating chamber constructed with partition and stay-walls and having air-passages *M*, *N*.

No. 2162. JOHN LAWRENCE, Philadelphia, Pa., U. S., 20th March, 1873, for 15 years: "Cut Nail Machine." (*Machine à clou taillé.*)

Claim.—1st. The box *J*, constructed as described for the receptor and retention of a pile of nail plates, and for feeding the same successively to the cutters of a nail machine; 2nd. A nail plate box *J*, to which the desired vibrating and lateral motion is imparted by a vibrating lever through the medium of links *T*, *T*1; 3rd. The said links *T*, *T*1, rendered adjustable on the nail box, or on the vibrating arm or on both; 4th. A nail box to which the combined lateral and vibrating motion is imparted in combination with the radial link *S*, for controlling the box longitudinally; 5th. The combination of a nail box pivoted to a transverse slide *V*, as shown in fig. 10, with the vibrating arm *Y*, and the adjustable links *T*, *T*1; 6th. The feed box connected to the links *T*, *T*1, and *S*, by pins *r*, *r*1, and a bolt *q*, so as to permit the said links to be instantly detached when it is necessary to remove the latter from the machine; 7th. The combination with the feed box and cutters of a plate or block *R*, secured to the fixed frame in respect to said cutters and feed box substantially as described; 8th. The combination of the overlying plate or block *R*, and the springs *m*, and *m*1, which form the bottom and sides of the nose of the feed box; 9th. The feeding rolls *L*, *L*, cut spirally in opposite directions as shown in fig. 7; 10th. The combination with the geared feed rolls and their ratchet wheels *f*, of the pawl *M*, connecting lever *M*1, and rod *M*2, operated from the cutter head (see fig. 6.); 11th. The combination of the ratchet wheels *f*, of the feed rolls the alternately operating pawls *M*1, and *M*2, their connecting lever *M*, hung to the feed box and the inclined groove *k*, in the fixed bracket as shown in figs. 4 and 5; 12th. The combination of the cam lever *P*, with the pawl or pawls which act upon the ratchet wheel of the feed rolls; 13th. The combination with the feed rolls of the supplemental feed *N*, *N*1, acting in conjunction with and operated by the said feed rolls (see figs. 1, 2 and 3).

No. 2163. ALMER H. LIGHTHALL & ROBERT PALEN, Buffalo, N. Y., U. S., 20th March, 1873, for 5 years: "Wood Screw and Screw Driver." (*Vis à bois et tourne-vis.*)

Claim.—The screw *A*, with the head *B*, having the peculiarly shaped slot *a*, *b*, formed in it and in combination with the screw-driver *c*, having the bent edge *d*, both constructed as described and for the purpose specified.

No. 2164. GEORGE L. KITSON & GEORGE W. CAIR, Philadelphia, Pa., U. S., 20th March, 1873, for 5 years: "An Automatic Regulating Valve." (*Soupape-régulatrice automatique*)

Claim.—A valve chest forming part of a passage for the conveyance of steam from the boiler to the engine and weighted or loaded and exposed to the action of the steam so that any alteration in the speed of the engine or any change in the pressure of steam in the boiler causing differences of pressure on opposite sides of the valve will induce the latter to obstruct or expose the passage in the chest to an extent proportionate to any increase or decrease in the speed of the engine or in the pressure of the boiler as specified.

No. 2165. WALTER C. CHURCH, London, Eng., 20th March, 1873, for 5 years: "Improvements on Steam Engines, partly applicable to Hydraulic Rams and Pumps." (*Perfectionnements aux machines à vapeur, partiellement applicables aux béliers hydrauliques et aux pompes.*)

Relating more particularly to the pistons, packing-rings and slide valves of steam engines and so improving the same as to increase the power of the engine, prevent waste of steam, balance or remove the back pressure on the slide valve, reduce the cost of manufacture and diminish the length and width of the steam passages in the cylinder.

Claim.—1st. The use of the recessed or rebated metallic packing rings *c*, in combination with the segmental joint-pieces *e*, for pistons of steam engines, and other like purposes, such as for plungers of hydraulic rams, etc., when constructed, arranged and operating as described and illustrated in the drawings annexed; 2nd. In the peculiar construction and arrangement of the equilibrium circular-slide valve *C*, and its combination with the peculiar curvilinear steam and exhaust ports *a* and *b*, as described; 3rd. The peculiar construction of curvilinear steam and exhaust ports *a* and *b*, as and for the purposes described and illustrated more particularly by fig. 7 in the drawings; 4th. The combination with a circular or with a rectangular slide valve of the jun ring or rings *F*, the cap or caps *H*, the metallic packing-rings *a*, and the springs *I*, such as are above described, all arranged and operating together as and for the purposes set forth and as illustrated in the drawings annexed.

No. 2166. ELIJAH F. PRENTISS & HENRY F. HOWELL, Sarnia, Ont., 20th March, 1873, for 5 years: "Apparatus for Distilling and Refining Petroleum, etc." (*Appareil à distiller et raffiner le pétrole, etc.*)

Has for its object the distillation and separation of crude petroleum and other hydro-carbon oils, decolorising, and rendering them non-explosive; imparting also a high degree of illuminating power without the use of acids, alkalis or other chemicals.

Claim.—1st. The combination with the still *A*, the perforated coiled-pipe *j*, arranged above the level of the overflow pipe *2*, to allow the vapors or lighter portions of such oils as flow through this pipe to escape through the perforations without mixing with the body of the oil in still *A*, for preventing the carbonization of such vapors; 2nd. The arrangement of the atomizer *D*, with relation to the still *A*, and combined still and condenser *B*, to facilitate the separation of the impurities (which arise from the contents) of still *A*, from the lighter illuminating gas; 3rd. The still and condenser *B*, with its crude oil inlet pipe *c*, overflow pipe *d*, steam-pipe *S*, and condensing worms *3* and *3*1, all constructed, arranged and operating as set forth; 4th. Atomizing and decolorizing the vapors generated by distillation and rectification of crude petroleum or other oils by passing them through broken pumice stone, or its equivalent as set forth or any mere modification of the same; 5th. The arrangement of the atomizer *E*, with relation to the vessel *B*, and the worm *4*, in the final condenser *C*, to facilitate the separation of the impurities which arise from the contents of vessels *B*, from the lighter products condensed in worm *4*; 6th. The combination of the still *A*, combining still and condenser *B*, condenser *C*, with their several parts, and atomizer *D* and *E*, all constructed, arranged and operating in the manner and for the purpose set forth.

No. 2167. ALGERNON S. WHITING, Cedar Dale, Assignee of Francis S. Gilbert, Oshawa, Ont., 20th March, 1873, for 5 years: "A Wrench." (*Une clef à vis.*)

Self adjustable and self tightening.

Claim.—The adaptation of the motion of the lower jaw *E*, to the purposes of a wrench by means of the segment of a pinion *D*1, attached to the lever *D*, (the latter serving as handle), the fulcrum

of which is fixed in the chaps B, B, of the upper jaw A, and which segment of a pinion gears into a rack F, attached to the lower jaw E, the lower jaw by its motion in convenient guides B¹¹, B¹², formed in the chaps, serving to open or close and tighten the wrench upon the lever-handle D, being moved in a lateral direction, and also the arrangement of the guides and grooves B¹¹, B¹², in connection with the other parts of the invention giving a parallel motion to the lower jaw E, and also the adaptation of the invention as a shoe or other pinces.

No. 2168. GEORGE NOBLE, Woodford Bridge, Essex, Eng., 20th March, 1873, for 5 years: "Mode of Treating Fibrous Materials for the Manufacture of Paper." (Mode de traitement des ligneux pour la fabrication du papier.)

Claim.—1st. The method of preparing and treating fibrous materials including vegetable plants in the green or unripe condition, as also in their brown or ripe state to obtain therefrom a fibre suitable for making pulp for the manufacture of paper as described; 2nd. The steeping in a warm alkaline solution and subsequent boiling of the enumerated fibrous plants in the green or unripe condition or at any per od of their growth, between the time of the ripe and unripe state as also in their brown or ripe state.

No. 2169. JONES A. JOHNSTON, Montreal, Que., 20th March, 1873, for 5 years: "Art of Cutting Clothes and Apparatus therefor." (Mode et appareil de tailage des hardes.)

Claim.—1st. The novel art of applying the horizontal straight line F, and vertical straight line U, to the human figure as datum lines from which short straight measures may be taken whereby to cut out garments; 2nd. The square A, with straight edge B, and strap C, whereby the datum lines F, and G, are applied to the figure constructed as described; 3rd. The square D, and measure strap E used for obtaining the centre and width of the back as described.

No. 2170. ALFRED D. FOX, Prescott, Ont., 20th March, 1873, for 5 years: "Spring Power Transmitting Motion to Sewing and other Machines." (Ressort de transmission du mouvement pour les machines à coudre et autres.)

Claim.—1st. The arrangement of the winding shaft I, and the employment thereon of loose cog pinions J, and sieves K, in combination with the shafts B, and cog-wheels G. 2nd. The combination of a series of independent shafts B, with a driving shaft I, and winding shaft I, whereby each spring H, can exert an undivided action; 3rd. The combination of a governor O, and brake R, applied as set forth for arresting the speed of the machine.

No. 2171. HENRY F. KNAPP, New York, U. S., 20th March, 1873, for 5 years: "Apparatus for Raising Wrecks." (Appareil pour relever les naufrages.)

Claim.—1st. The process of passing raising chains or cables under wrecks or sunken vessels by means of the pipe C, the air or water pump F, and the carrier float G, with its attached string or cord H; 2nd. The flexible tube or hose E, in combination with the pipe C, the air or water pump F, and the carrier float G, with its attached cord H; 3rd. The torpedo I, in combination with the pipe C; 4th. The combination with the lifting chain or chains K, of the camels L, arranged externally alongside or over the wreck and open below for operation in connection with an air blast-pipe C; 5th. The combination of one or more slotted beams N, with the clamps or opening and closing jaws O, of the lifting chain or chains K, and the pontoons or barges M, M.

No. 2172. GEORGE B. KIRKHAM, New York, U. S., 20th March, 1873, for 15 years: "A Machine Treadle." (Une marche de machine.)

A foot power applicable to sewing machines, jig-saws, hand lathes and other light machinery.

Claim.—1st. The arrangement of the wheel A, A¹, and bearing arms B, B¹, the latter being set at an angle to the pitman C, and formed with grooved bevelled circular or flat surfaces for action on or in the wheel; 2nd. The arrangement of the friction clutches or devices and springs E, F, G, and H, I, J, K; 3rd. The arrangement of the set screws a, a, b, b, c, c, c, c, disks O, O, and double pitman C, C¹, for setting and tightening the wheel A, A¹; 4th. The strap L, in combination with the bearing arms B, B¹, the wheel A, or A¹, one or more pitmen C, C¹, and the treadle D.

No. 2173. GEORGE C. HODGE, North Danville, Vt., U. S., 20th March, 1873, for 5 years: "Improved Endless Chain Horse Power." (Chaîne sans fin de manège force de cheval.)

Consists of strings on rollers made so short that they cannot deviate sufficiently to crowd on either side of their channels.

Claim.—Endless chain horse powers and the arrangement of the rollers in sectional strings d, e, in the manner specified

No. 2174. OLIVER W. KETCHUM, Toronto, Ont., 20th March, 1873, for 5 years: "A Steam and Air Car Brake." (Un frein de voiture mis en opération par la vapeur et l'air.)

Claim.—1st. The arrangement of the beams c, c¹, c², c³, suspended from the truck frame and rods I, I¹, I², I³, in combination with the cylinder F, and piston rod G, whereby the brake blocks B, are operated simultaneously against the wheels A, when steam or air is admitted; 2nd. Providing the couplings with cages P, balls J, projections Q, 3rd. The nuts R, applied to the coupling-sections and operating in the manner set forth.

No. 2175. THOMAS R. EVANS, Philadelphia, Pa., U. S., 20th March, 1873, for 5 years: "An Improved Shoe." (Un soulier perfectionné.)

Claim.—1st. The combination of the perforated tongue or vamp A, with the loose gaiter-flap B, 2nd. A loose gaiter-flap secured to the body of a shoe by rubber-cloth gussets E.

No. 2176. HARRY A. WILLS, Chicago, Ill., U. S., 22nd March, 1873, for 5 years: "A Horse Shoe Nail Machine." (Machine à clou à cheval.)

Claim.—1st. The combination of the scroll-shaped or approximately scroll-shaped guide B, C, with the feed-screw; 2nd. The combination of the pusher G, with the roller and bed dies, the said pusher and roller die and the operating devices therefor being arranged in such relation that the nail will be pushed forward when the roller die is over the bed die, 3rd. The combination of the head holder with the bed die.

No. 2177. HENRY HIGHTON, Putney, Surrey, England, 22nd March, 1873, for 5 years: "Improvements on Electric Telegraphs." (Perfectionnements aux télégraphes électriques.)

The object of this invention is to convey intelligence by means of submarine and other lines which from injury or defect are so imperfectly insulated that the instruments ordinarily employed are not readily available or where in consequence of imperfect construction it is desirable in order to prevent mischief to a cable to use currents of smaller intensity than are suitable for other instruments.

Claim.—The combination of the parts a, b, c, d, e, and f, also in the combination of the parts a, b, c, d, e, f, g, and h, as described.

No. 2178. ALVAN H. MOORE, Magog, Que., 22nd March, 1873, for 5 years: "A Cheese Box." (Une boîte à fromage.)

Claim.—1st. The combination of bottom a, bands b, and c, top e, and band d, constructed and operating as set forth; 2nd. The bottom a, bands b, and c, combined and forming half section of box represented by fig. 1, in the drawings in connection with top e, and band or hoop a, combined and forming the other half section represented in the drawings by fig. 2, which on being adjusted as shown by fig. 3, produces a box in two nearly equal parts and having the upper section supported by shoulder s, of band b, shown in the drawings by fig. 1.

No. 2179. CHARLES W. HARRISON & ALFRED H. HARRISON, London, Eng., 22nd March, 1873, for 5 years: "Manufacture of Lighting and Heating Gas and Apparatus therefor." (Fabrication et appareil pour la fabrication du gaz pour l'éclairage et le chauffage.)

Claim.—1st. Charging or impregnating atmospheric air with the vapour of hydro carbon liquids treated or prepared in combination with oxidized essences or resins, tar, or the products of distillation of either resin, wood-tar, coal-tar, bituminous coal, bog-head, asphalt, peat or waste oil, or any combination of these as and for the purpose set forth; 2nd. Carburetted or increasing the proportions of carbon in hydro-carbon liquids by the mixture therewith or addition thereto of oxidized essences or resins, tar or the products of distillation of either resins, wood-tar, coal-tar, bituminous coal, bog-head, asphalt, peat or waste oil, or any combination of these as and for the purpose set forth; 3rd. Charging or impregnating atmospheric air with the vapour of hydro-carbon liquids by drawing air through or in contact with such liquids or through the vapour thereof by means of a complete or partial vacuum used or applied as described; 4th. The combination of the bellows A, rigid air chests C, and G, with collapsible chambers D, and H, side-passage F, valves L, and pins M, connecting pipe K, in combination with generating vessel J, tube O, pipes P, and ring Q, with perforated compartments Q¹, and air tight ditto Q², all arranged and working together as and for the purposes set forth; 5th. In the tube S, chamber T, and outer chamber U, in combination with the pipes P, ring Q, and generating vessel J, and other parts of the apparatus; 6th. The diaphragms V, in combination with inlet pipe K, and generating vessel J; 7th. Combination with the generating vessel J, and any suitable blowing machine the tube W, tube X, (carried on brackets Y), or its equivalent flexible tube Z, float e, and pipe f; 8th. The generating vessel J, with an inlet K, flexible

tube O, pipes P, and ring Q, in combination with pipe R, vertical column A, cistern I, and pipe J, chamber L, outlet pipes M, and N, and partition O; 9th. The combination of the tank R, bolt I, hung with chains P, and weights X, with pipes O, and I', in combination with generating vessel J, inlet pipe S, chamber T, second chamber U, or their equivalents and ring Q and other parts of the apparatus; 10th. The combination of the bell of any gasometer with inlet pipe A, outlet pipe I', water pipe K', and rain H, and any suitable water forcing apparatus with one or more generating vessels J; 11th. The combination of the holder M, reservoir O', placed as described between tide levels and pipes P', O', R', S', T', U', and W, in combination with generating vessels J,

No. 2180. HIRAM J. WATTLES, Rockford, Ill., U. S., & AUSTIN D. CABLE, Montreal, Que., 22nd March, 1873, for 5 years: "A Churn." (Une baratte.)

Claim.—1st. The cylinder M, with paddle N, and frame L, with paddles N', revolving in opposite directions; 2nd. The tubes I, and K, in combination with pinion G, and frame L.

No. 2181. WILLIAM P. SCOTT, Chatham, Ont., 22nd March, 1873, (Re-issue of Patent No. 1964), for 5 years: "A Car-Coupler and Buffer." (Un attache-char avec tampon.)

Claim.—1st. A link E, pivoted at its rear extremity, whether said link be a whole link pivoted and permanently fastened in any draw-head or draw-bar by any piece or bolt I, whether said piece or bolt I be placed in a vertical or horizontal position in the jaw or draw-head for the purpose of pivoting the link E, or whether said link be a part of a link having two eyes or slots through which any bolt I, may be run for the purpose of pivoting and permanently fastening said link E, for the purposes specified; 2nd. A leaf-spring E', or flat spring for the purpose of keeping said pivoted link in a horizontal position or plane, whether said spring be straight or curved or whether it be welded on to the said link or detached whenever a flat spring is used for the purpose specified; 3rd. A buffer B, when said buffer is cleaved on any draw-head or draw-bar, and is actuated directly by the draw-spring on the shank of the draw-head and has lips or flanges B', and slots in its sides M and for the purposes specified; 4th. A combination of a draw-head A, draw-spring J, link E, pivoted by a bolt or piece I, and kept in a horizontal plane by any leaf-spring E', guide-tube F, coupling-pin D, dog H, and dog-spring G, and slide C, all arranged and operating as and for the purposes described; 5th. A draw-head A, draw-spring J, pivoted link E, kept in position by a leaf-spring E', bolt I, guide-tube F, pin D, dog H, dog-spring G, slide C, and elevated buffer B, all arranged and operating as and for the purposes described.

No. 2182. PETER M. BAWTINHIMER, Woodstock, Ont., 22nd March, 1873, for 5 years: "A Potato-Digger." (Un extracteur de patates.)

Claim.—1st. The combination of the four radiating arms A, A, A, the teeth B, and the cylindrical grato D, with the spur-wheels F, F, pinion-wheels H, H, and pinion-wheels K, K; 2nd. The combination of the arms A, A, A, the teeth B, and the cylindrical grato D, with the shaker E, and the crank M.

No. 2183. GEORGE V. SHEFFIELD, Providence, & GODFREY K. MELLOR, Woonsocket, R. I., U. S., 22nd March, 1873, for 15 years: "Machine for Sewing Leather." (Machine à coudre le cuir.)

Claim.—1st. The double tapering thread made as described and employed in the sewing of leather or other fabrics; 2nd. The method described of sewing leather and other fabrics by means of a double tapering thread—wedging into the leather; 3rd. The perforating of the leather with a prismatic grooved-awl for the reception of the thread; 4th. The awl I, made of prismatic form pointed and grooved at the sides; 5th. The needle M, shaped like the awl I, and provided with barbs Z; 6th. The rotary tube d, having the concentric aperture n, and the eccentric aperture o, at the upper end; 7th. The oscillating tube e, having the overlapping notched-riding at the upper end to constitute an automatic feed for the thread; 8th. The combination of the tubes d and e, with each other; 9th. The awl I, connected with the reciprocating vibrating and sliding-shaft J, for the purpose of piercing and feeding the leather; 10th. The rock-shaft J, fitted through the blocks V, V, and combined with the bell-crank Z, pin A, and disk L, 11th. The disk L, provided with the cam-profile G, and with the pins V and C, whereby it serves to impart the three different kinds of motion to the awl; 12th. The combination in one machine of the tubes d, e, reciprocating needle H, and reciprocating vibrating awl I, all arranged to operate as described; 13th. The angular supporter S, provided with the sectional tubes d, e, and the connecting gearing; 14th. The construction generally of a machine for sewing leather and other fabrics upon the principles and in the manner described.

No. 2184. WILLIAM D. RUCK, Greenwich, Eng., 22nd March, 1873, for 10 years: "Manufacture of Gas." (Fabrication du gaz.)

Claim.—1st. The manufacture of gas, to be employed for heating purposes by heating coke or other carbonaceous matters,

in combination with iron, steel or other metals and superheated steam in heated retorts constructed and arranged as described; 2nd. The manufacture of illuminating gas by the improved process described which consists in passing through the hydrocarbon spirit currents of hydrogen gas prepared in the manner set forth; 3rd. In the use for the purposes described or for analogous purposes of apparatus constructed and arranged as set forth.

No. 2185. JOHN COLLICOTT, West Roxbury, Mass., U. S., 22nd March, 1873, for 5 years: "Machine for Cleaning Boiler Tubes." (Machine à nettoyer les bouilleurs des chaudières à vapeur.)

Consists of a scraper or flue-cleaner on which the arms having the scraping edges are spread apart by means of spiral springs set over and upon spurs and the said arms which are of a peculiar shape are prevented from spreading too much by means of a stop and ledge upon each.

Claim.—1st. The novel combination of the arms a, a, spurs c, c, spiral-springs b, b, and stop or ledge d, all working together in the manner and for the purpose described; 2nd. The hinged arms a, a, made in the peculiar manner described and operating as and for the purposes set forth; 3rd. The stop or ledge d, constructed as described in combination with a hinged-arm a, operating and arranged as and for the purpose specified.

No. 2186. EDWARD GRASER, Union City, Pa., U. S., 22nd March, 1873, for 10 years: "Improvements in Pumps." (Perfectionnements dans les pompes.)

The object of this invention is to provide a pump from which the lower valve may be removed without taking up the pump.

Claim.—The cylinder C, constructed as described and provided with the screw E, and tip D, or their equivalents in combination with the piston J, and plunger rod L.

No. 2187. PARKER WELLS, Lynn, Mass., U. S., 22nd March, 1873, for 15 years: "Spring Bottoms for Bedsteads and Seats." (Fonds à ressort pour les lits et les sièges.)

Claim.—1st. A spring-bed bottom having the upper slats D, arranged transversely and bearing on the broad-end of conoidal springs C, interposed, and resting on longitudinal slats B; 2nd. The conoidal spiral-springs C, constructed with an enlarged base bent rectangularly at the tapering end, to form a seat to be secured to the slat B.

No. 2188. FERDINAND GROSS, Assignee of W. Hurlstone, Montreal, Que., 26th March, 1873, for 5 years: "Composition of Matter for Covering Trusses and Surgical Instruments." (Composition pour couvrir les bandages et les instruments de chirurgie.)

Claim.—A compound composed of 1. litharge, or of white lead, 2. of sulphate of zinc, or of alum, or of sugar of lead, 3. of red nitric acid, or of nitric acid in which mercury has been dissolved, and 4. of linseed oil, or of olive oil, the whole mixed in the proportions and for the purposes set forth.

No. 2189. WILLIAM T. BUNNELL, Topeka, Ka., U. S., Assignee of W. Jackson Freeman, of Liberty, Me., U. S., 26th March, 1873, for 5 years: "A Washing Machine." (Une machine à laver.)

Claim.—The construction and arrangement of the diagonal bars G and H, shaft F, with the upright journal boxes E, connecting bars D, in combination with the frame and box and lever X, cross-bar C, all as shown and described.

No. 2190. JOHN BURGE, Circleville, Ohio, U. S., 26th March, 1873, for 5 years: "A Time Lock." (Une serrure à échappement d'horlogerie.)

Claim.—1st. The crank-wheel H, the connecting-bar G, the tumbler B, the bolt E, when the same are constructed and arranged to operate as described; 2nd. The slot D, in the tumbler B, in combination with the bolt E.

No. 2191. JOHN H. JOHNSTON, Dresden, Ont., 26th March, 1873, for 5 years: "A Ship Plank and Roller Gauge." (Une jauge pour le sciage de bordages de vaisseaux.)

The object of the invention is to prevent the tendency to spring or bend outwards which the log has after the first slat has been taken off.

Claim.—1st. The method of using the roller C, by pressing it in an upright position against the log to be sawed; 2nd. The method of placing the roller against the log and drawing it back when not in use by means of the screw G; 3rd. The combination of the horizontal bars A, and B, the screw G, and the roller C.

No. 2192. HENRY COX, Peterborough, Ont., 26th March, 1873, for 5 years: "Compound Friction Pulley Hub." (Coussinet de poulie à friction combinée.)

Claim.—The lug K, and the wedge E, E, forming a self-acting fastening for securing the pulley B, to the shaft A.

No. 2193. HOMER T. FOWLER, Rome, N. Y., Assignee of Elliott Metcalf, U. S., 26th March, 1873, for 5 years: "A Venetian Window Shade." (Une jalousie vénitienne.)

Claim.—The improved window shade formed of the slats A, provided with transverse oblong slots H, cords B, C, F, and G, arranged on pulleys and other suspending devices for the purpose specified.

No. 2194. HAMLET E. FORREST, Boston, Mass., U. S., 26th March, 1873, for 5 years: "An Axle Blank Finishing Tool." (Un outil pour finir les essieux en métal.)

Claim.—1st. The improved lathe tool C, for finishing metallic axle blanks as made with its cutting edge so formed as to give the desired size and shape to the journal end of the axle at one operation of the tool; 2nd. The arrangement of two or more tools (C, C', etc.) formed as described with respect to each other to operate in manner and for the purpose stated.

No. 2195. ALBIN WARTH, Stapleton, N. Y., U. S., 26th March, 1873, for 5 years: "Machine for Cutting Textile Materials." (Machine à couper les matières textiles.)

Claim.—1st. The combination of a cutter bar, a revolving platform and an upper and lower feed wheel all constructed and operating in the manner described; 2nd. The lever Q, and pulleys t, u, in combination with the presser slide and with the belt which transmits motion from the lower to the upper feed wheel; 3rd. The spring stop P, in combination with the lifter of the presser slide and with the handle which serves to operate the platform B; 4th. The protector O, in combination with the knife o, and with the presser slide constructed and operating as described; 5th. The arrangement of an index on the protector to indicate the end of the knife; 6th. The hollow column M, forming a passage for the belt T, which connects the upper and the lower feed wheels; 7th. The regulating screw K, in combination with the lifter V, and feed wheels D, and S; 8th. The arrangement of a cog-wheel d₁, on the side of the feed wheel D, to transmit the motion of said feed wheel to the upper feed wheel S; 9th. The adjustable pin h, and screw A, in combination with pinion e, cog-wheel d₁, and feed wheel D; 10th. The tappet rod c, passing through the hollow guide rod d, extending from the bracket C, in combination with the feed wheel D; 11th. The lever E, having a transverse motion on its pivot e, in combination with the star-shaped cam v, tappet rod c, and feed wheel D; 12th. The screw J, provided with a circular flange and connected to the eccentric pin h, in combination with the notched cutter bar L.

No. 2196. JOHN NEWHALL, Toronto, Ont., 26th March, 1873, for 5 years: "A Kitchen Steam and Smell Conductor." (Un appareil-conducteur des vapeurs et des odeurs de cuisine.)

Claim.—The combination of the tubes A, B, C, E, F, G, H, made to slide into each other as described with the elbow D, and the conical lid I, with orifice and tube K, on top to be attached to a stove-pipe or chimney-flue for the purposes described.

No. 2197. SAMUEL W. EMERY, ERASMUS P. DOYEN & WARREN SPARROW, Portland, Me., U. S., 26th March, 1873, for 5 years: "A Safety Shoe for Railway Cars." (Une semelle de sûreté pour les voitures de chemins de fer.)

Acting as a brake, holding the wheels in place and preventing their escape from the track in the event of an axle becoming broken.

Claim.—1st. The safety shoe constructed as described with the parallel side flanges, the opening for the wheels and the berelled or inclined ends in front and rear of the wheels; 2nd. The combination with the safety shoes, the guide rods J, and chains K.

No. 2198. JOHN T. WARING, Yonkers, N. Y., U. S., 26th March, 1873, for 5 years: "A Felt Hat." (Un chapeau de feutre.)

Claim.—A felt hat or cap body composed of a layer of dead-stock combined with a layer or layers of felting material or materials on the outside.

No. 2199. ALFRED P. SPROUL & GEORGE H. COFFIN, Cherryfield, Me., U. S., 26th March, 1873 for 5 years: "An Improved Saw." (Une scie perfectionnée.)

Claim.—A saw having a transverse slot B, at each end combined with strap-bars held thereto by bolts passing through said slots and allowing the saw to be shifted and clamped at different points in the manner described.

No. 2200. JOSEPH E. HOLMES & WALTER PAYTON, London, Eng., 1st April, 1873, for 5 years: "Machine for Dressing Stone." (Machine à tailler la pierre.)

The stone to be dressed is mounted upon a reciprocating table. At the sides of the table are uprights carrying sliding blocks which can be raised and lowered simultaneously by screws. The blocks carry two horizontal axes. The lower axis having recesses in which chisels or cutters are fitted.

Claim.—The construction of machinery for dressing stone substantially as described.

No. 2201. GEORGE W. RIDER, Springwells, Mich., U. S., 1st April 1873, for 5 years: "Machine for Making Barrel Hoops." (Machine à faire des cercles de futaille.)

Claim.—1st. The combination of the cutters E, E', and the feeding rollers i, j, k, l; 2nd. The combination with the cutters E, E', and the feeding rollers i, j, k, l, of the inclined plane P, and the rollers N', and O; 3rd. The main feed-rollers i, j, k, l, on vertical shafts N, O, P, Q, acting on the side-faces of the hoop-bolts O, and Q, having side motion at the top by means of yokes Q and O₁, by which the force of the feed is adjusted; 4th. The combination of the rollers N' and O₁, driven upon the upper and lower faces of the hoop-bolt N, and having the vertical motion by connection of the end of L, with L', and L'', required by the varying depth of the hoop-bolts, the rollers being made with flanges, and operating as and for the purposes set forth.

No. 2202. WILLIAM P. KILGORE, Hampden, Me., U. S., 1st April, 1873, for 5 years: "Cant-Hook Machine." (Machine à fabriquer des renards.)

Claim.—The standards A, A, the jaws for upsetting B, B, the lever C, the clasp D, the base L, and the polisher F.

No. 2203. JOSEPH GARDNER & WILLIAM F. BEASLEY, Louisville, Ky., U. S., 1st April, 1873, for 5 years: "A Fire Extinguisher." (Appareil à éteindre les incendies.)

Claim.—1st. A fire extinguisher provided with two or more separate receptacles or chambers (having suitable cocks or valves) for keeping separate an acid in solution and an alkali in solution with water or any other suitable fluid and which has all its ventages above the fluid line when the machine is inverted and set aside, but which ventages are all below the fluid when the device is placed in position for operation; 2nd. The equalizing pipes G, G₁, in combination with cocks D and D₁, capable of being opened and closed at the same time and by the same operation as the openings I and I₁.

No. 2204. JOHN MAGEE, Chelsea, Mass., U. S., 1st April, 1873, for 5 years: "A Portable Cooking Range." (Un fourneau de cuisine portable.)

Claim.—A portable cooking range, provided with an elevated hot closet having a cast iron top and front, constructed and arranged as set forth.

No. 2205. THOMAS NUGENT, Whippany, N. J., U. S., 1st April, 1873, for 15 years: "A Paper Pulp Propeller." (Rouleau pour le raffinage de la pâte à papier.)

Claim.—1st. In combination with a machine for reducing paper stock to pulp, the propeller A; 2nd. The propeller A, made of tapering form and with curved and diagonal blades C.

No. 2206. JOHN F. L. HOLMAN & EDWIN HENWOOD, Hamilton, Ont., 1st April, 1873, for 5 years: "A Car-Coupler." (Un attache-char.)

Being automatic in its action.

Claim.—1st. The weighted movable tooth or pin C, operated as shown in combination with the bumper-head B; 2nd. The recess D₁ in the bumper head. 3rd. The arrangement of the opening M for the tooth or pin to play in; 4th. The arrangement of the bell-crank F, operated by the rod H; 5th. The arrangement of the chain L, from the ball to pulleys I, I.

No. 2207. JOHN GRANT, Gananoque, Ont., 1st April, 1873, for 5 years: "Combined Pot Tilter and Cover Holder." (Machine à pencher les ustensiles de cuisine et en maintenir les couvercles.)

Claim.—1st. The combination of the pot-tilter and cover-holder, hammer, tack-puller, and stove-cover-lifter in one tool. 2nd. The crank-pin C, or its equivalent for entering the ear of the pot and for holding the pot in place while in the act of tilting the pot; 3rd. The crank D, (or set-off); 4th. The application of the arm F, or its equivalents, for holding the cover of the pot in place while tilting the pot.

No. 2208. ISAAC GALIPO, Montreal, Que., 1st April, 1873, for 5 years: "A Horse Shoe." (Un fer à cheval.)

Consists in the construction of a shoe that can be attached or removed at will without the aid of a farrier.

Claim.—The shoe A, with side pieces c, e, and front piece g, for holding the hoof; in the side pieces C, with serrations d; in the links E and E', pin f, and eye g, of piece g, in the shoe A, in combination with caulks b.

No. 2209. JASPER BATES & THOMAS MCKENNY, Thornbury, Ont., 1st April, 1873, for 5 years: "Churn Operating Attachment." (Appareil à faire mouvoir les barrattes.)

Consists of a frame removably secured to the outside of the churn in which to operate the dasher shaft by means of a pitman and lever.

Claim.—1st. The combination and arrangement of the standard C, brackets E, guide-pieces F, dasher-shaft I, pitman G, and lever H, applied to a churn A, and operating as set forth; 2nd. The slats J, arranged inclinedly in the beam K, of the dasher.

No. 2210. PETER JACOB & JAMES JOLLIFFE, Toronto, Ont., 1st April, 1873, for 5 years: "A Flask for Moulding Stove-Pipe Stones." (Châssis pour le moulage des pierres à trous de tuyaux.)

Consists in hinging all the sides together so that each will open or close separately like the lid of a box and when closed they are secured by clamps. The core is made of metal, or other suitable material, tapered so that it can be readily withdrawn when the casting has been made.

Claim.—1st. In hinging the sides A, B, C, D, and E, of a moulding flask as described and binding the same together by the clamps L. 2nd In the combination of the core G, with one or more core supporters F.

No. 2211. PIERRE E. JAY, St. Jean Baptiste, Que., 1st April, 1873, for 5 years: "Process of Smelting Iron Ore." (Procédé pour fondre le minéral de fer.)

Claim.—The treatment of iron ore before being placed in the cupola or furnace by wetting it with a solution composed of sugar, nitrate of soda, carbonate of lime and water in the proportions specified.

No. 2212. WILLIAM WILMINGTON, Toledo Ohio, U. S., 1st April, 1873, for 5 years: "A Car Wheel." (Une roue de voiture de chemin de fer.)

Consists in making the wheel with a chull extending only over a portion of the tread of the wheel and over the inner portion of the flange where the latter is curved to unite with the tread.

Claim.—A car wheel having the portion A, chilled, and the portions B, and C, homogeneous with the rest of the wheel.

No. 2213. ARTHUR C. KENT, Janesville, Wis., U. S., 1st April, 1873, for 5 years: "A Corn Planter." (Un semoir à blé-d'Inde.)

Claim.—1st. The spiral or operating rod I. 2nd. The conical stud or agitator M, secured upon and combined with the dropper H. 3rd. The revolving dropper H, on which the conical stud G, is secured.

No. 2214. JOSEPH A. FOURNIER, Ottawa, Ont., 1st April, 1873, for 5 years: "A Hand Propelling Carriage." (Une voiture à bras.)

Claim.—1st. The arrangement of the wheel E, shaft D, cog-wheels K, and pinions L, shafts M, chain-wheels N, chains O, and chain-wheels P, in combination with the hubs of the wheels A, carriage-body B, and axles C; 2nd. The arms H, sleeves I, and standards J, in combination with the shaft D, for maintaining the same as specified; 3rd. The arrangement and combination of the curved spring-bar V, bifurcated pivot-shaft P₁, tiller R, tiller-ropes S, and treadles T, in combination with the guide-wheel Q, for directing the course of the carriage.

No. 2215. GEORGE WIGHTMAN, Elksley Notts, Eng., 1st April, 1873, for 5 years: "Improvements in the Pumps of Hydraulic, Steam, and other Engines." (Perfectionnements aux pompes et aux machines à vapeur, hydrauliques et autres.)

Consists in the construction and arrangement of the pumps and cylinders of engines in such manner as to render the valves ordinarily employed in, or applied to same unnecessary.

Claim.—1st. The sliding barrel A, with its ports a¹, and plunger B, also the crank C, outer cylinder E, pipes D₁, D₂, and d, flanges e, eccentrics F, eccentric-rods f, connecting-rods g, cross-head a², and stuffing-box a³, constructed, arranged, combined and operating as and for the purpose set forth and illustrated by figures 1 and 2, of the drawings; 2nd. The cylinder A, with its ports a¹, a, sliding within the flanges E, F, of the outer cylinder E, so as to develop the said ports for the passage of water or other fluid into and from the said cylinder A; 3rd. The inner sliding cylinder or barrel A, with its ports a¹, plunger B, outer cylinder E, induction passage G, nozzle h, dished-covers i, stuffing boxes l¹, and a, discharge-nozzle c, discharge-pipe D₁, and air-vessel D₂, arranged, constructed and combined as described and illustrated by figures 3, 4, and 5; 4th. The open ended sliding-barrel A, outer cylinder E, covers b¹, stuffing-boxes a², and a³, cross-head a¹, and nozzles e, c, and c², constructed, arranged and combined as described and illustrated by figures 6, and 7.

No. 2216. WILLIAM PAINTER & LEWIS R. KEIZER, Baltimore, Md., U. S., 7th April, 1873, for 5 years: "A Gauge Cock for Steam Boilers." (Un robinet-jauge de machine à vapeur.)

Relates to the use of a hollow sliding sleeve fitting the barrel of the cock and provided with a gasket of rubber or other material held against the valve seat by means of a weight.

Claim.—The sliding-sleeve D, with its nozzle E, and gasket F, in combination with the barrel G, having an annular groove L, and the weight H. 2nd. The lugs K, K, and cam grooves J, J, for actuating the sliding-sleeve, all constructed and operating as described.

No. 2217. CHARLES E. PATRIC, Springfield, Ohio, U. S., 7th April, 1873, for 5 years: "A Seeding Machine." (Un semoir.)

Claim.—1st. In combination with the rocking bars C, C', and drag-bars D₁, of a grain drill a right and left hand-screw for shifting the position of the hoes; 2nd. The combination with the seeding devices of a grain drill and adjustable cone of sprecket-wheels or pulleys for varying the delivery of the grain; 3rd. Combination with the gearing for driving the seeding devices of a grain drill the angular or curved sliding-bar N, and sliding-bar O; 4th. The combination of the cone F, disc G, bar Q, plate or fork O₁, bar N, plate M, and wheel A, provided with a pin a; 5th. The combination of the cones F, and F₁, chain I, shaft P, provided with grooves p, p₁, and latch h; 6th. Combination of the cones F, F₁, chain I, pulley P, vibrating-arm I₁, provided with the return-arm v, spring J, and bracket J₁, arranged and operating as described; 7th. The divided distributor casing R, provided with the outlet-funnel or spout R₁, in combination with a vertical distributor-wheel Q, adapted to deliver the grain on either side from the hopper into the said outlet funnel; 8th. The divided distributor casing R, in which the distributor wheel Q, has its bearings provided with lugs r, having the tubular interlocking spurs s, and sockets S; 9th. In the pivoted lifting-lever L₁, provided with the tripper-arm L₂, in combination with the lifting-roller L; 10th. The rocking-shaft or lever T, in combination with the grass-seed agitator slide T₁, and the wave-cam V, and spring V₁, for operating the said slide T₁; 11th. The open loop or staple stirrers T₂, in combination with the agitator-slide T₁; 12th. The inclined delivery board X, in combination with the grass-seed hopper H₁, for regulating the delivery of the seed; 13th. The peculiar arrangement and construction of the hoe D; 14th. The link or spring R₂, arranged and constructed as specified.

No. 2218. CHAUNCEY O. CROSBY & NATHAN A. BALDWIN, Milford, Conn., U. S., 7th April, 1873, for 10 years: "Machine for Sewing the Soles of Boots and Shoes." (Machine à coudre les semelles de chaussures.)

The invention consists in the peculiar construction of what is termed the work plate whereby a shuttle carrying a second thread to make the lock-stitch in welted work is employed

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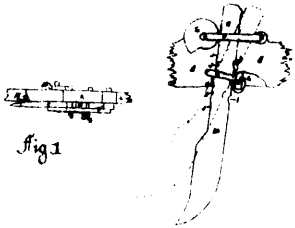
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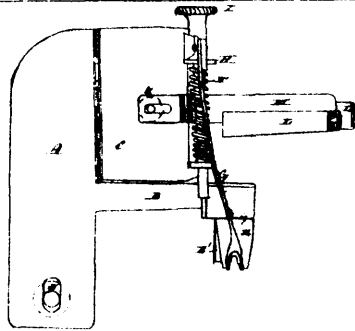
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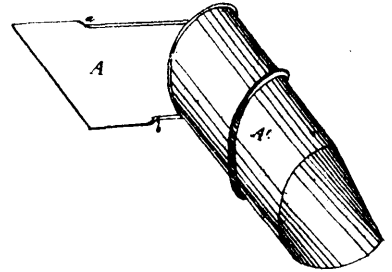
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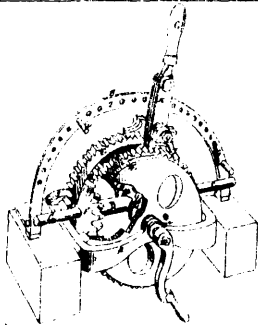
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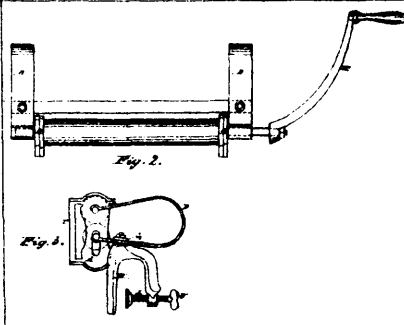
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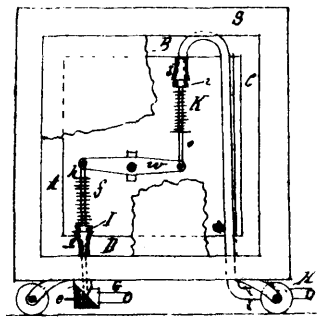
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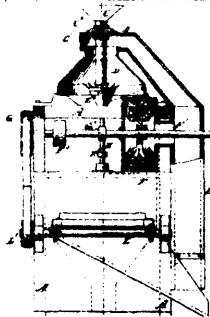
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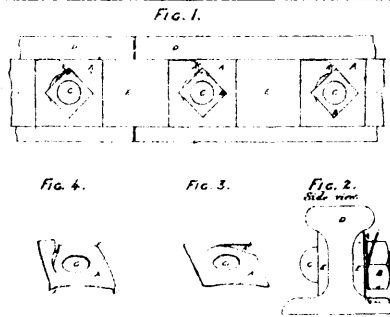
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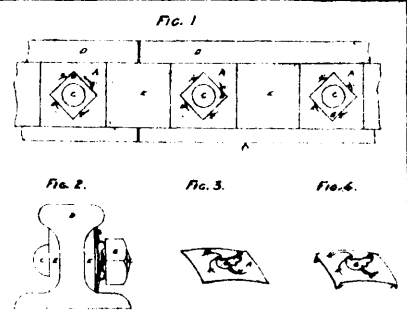
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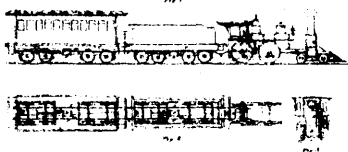
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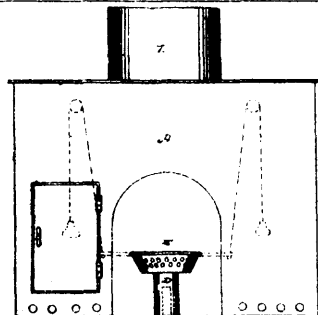
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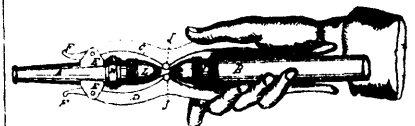
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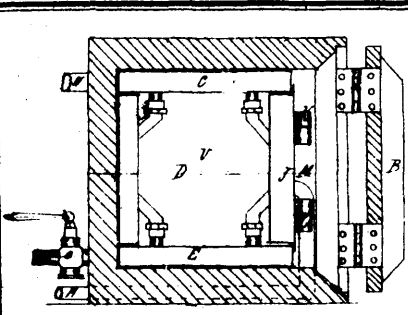
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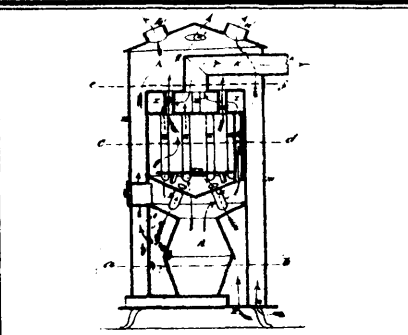
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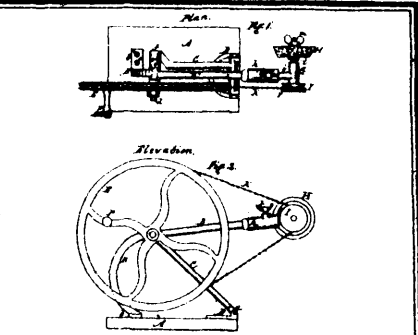
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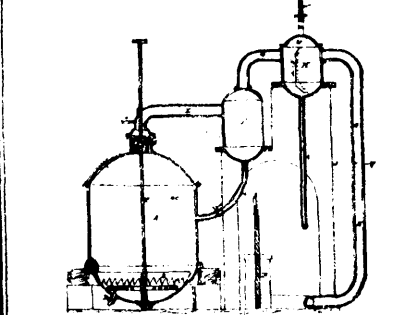
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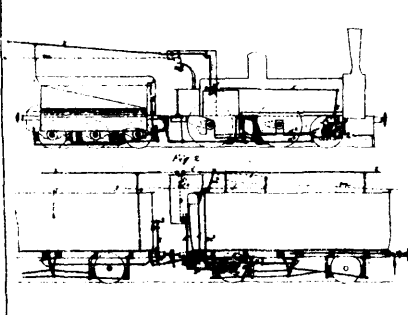
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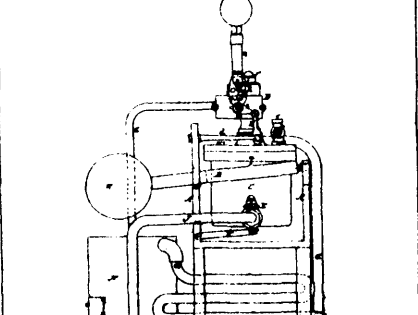
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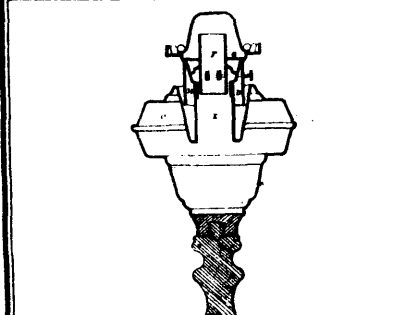
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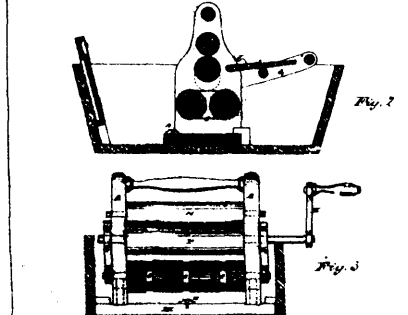
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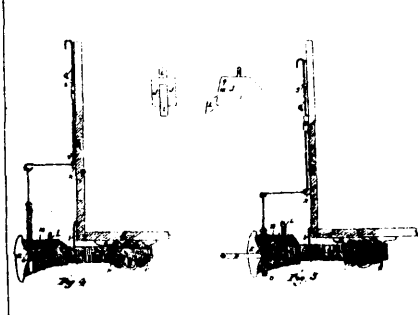
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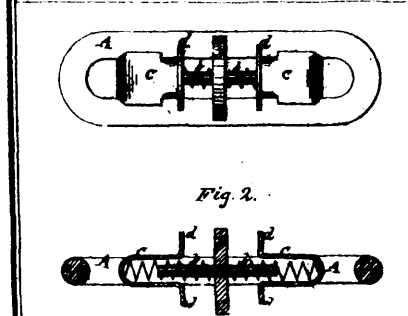
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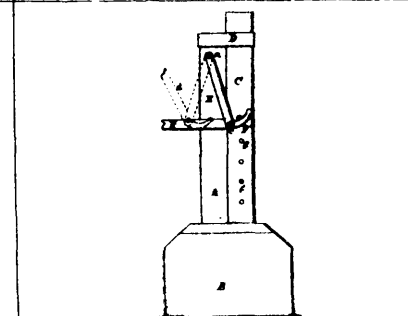
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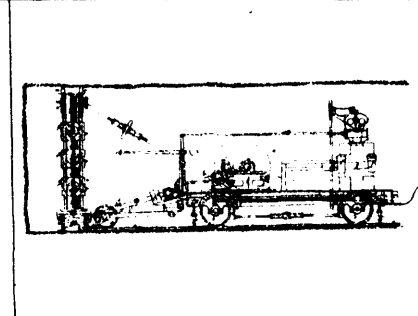
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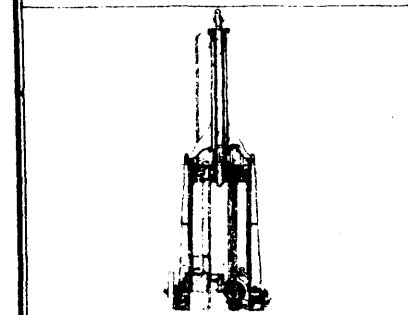
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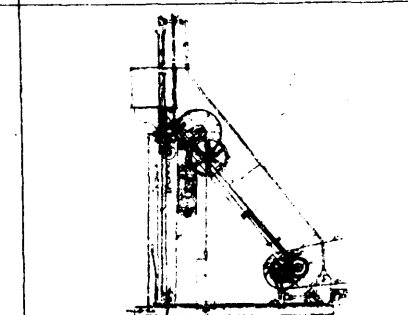
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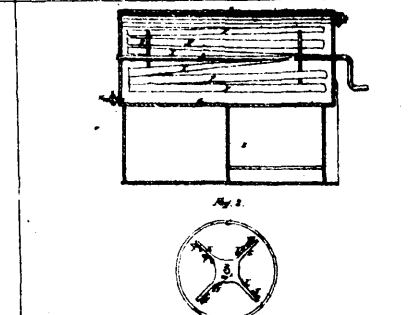
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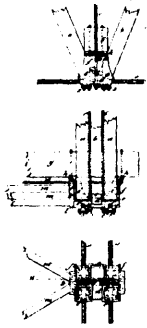
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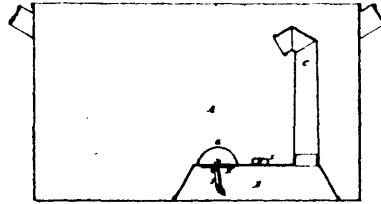
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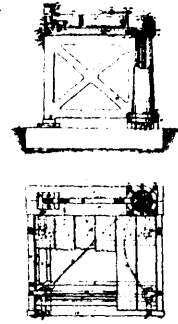
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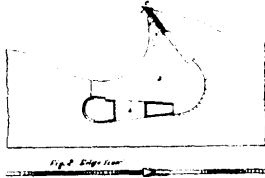
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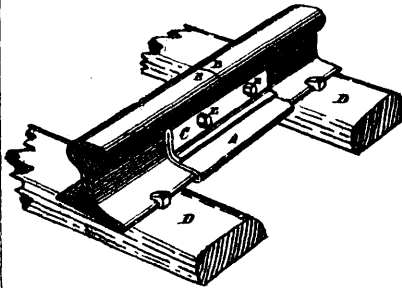
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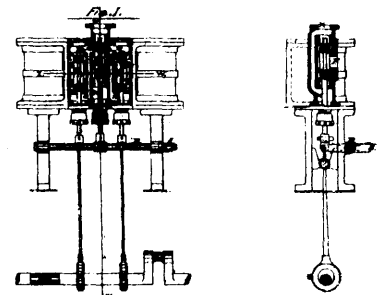
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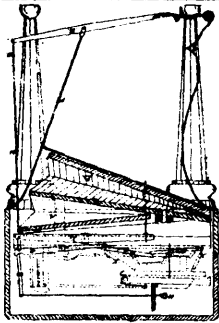
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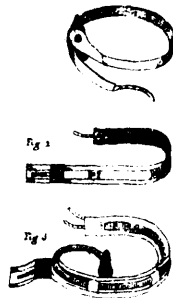
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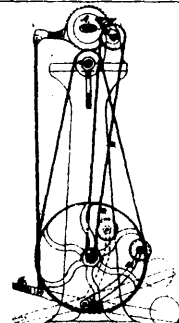
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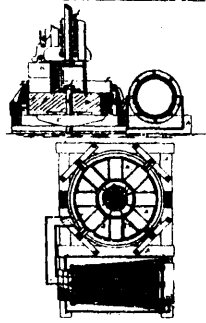
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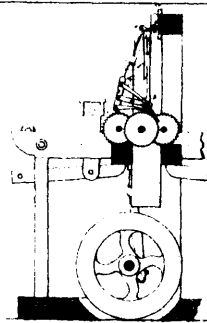
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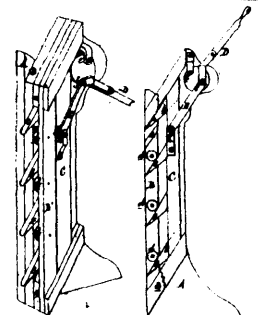
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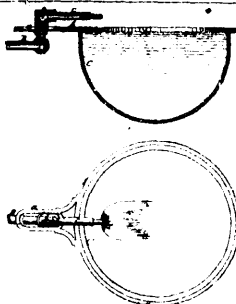
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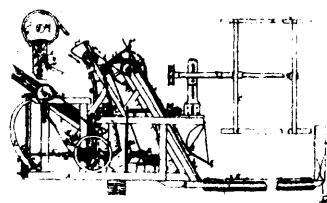
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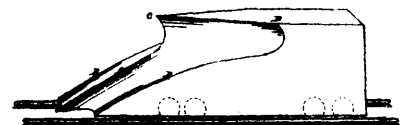
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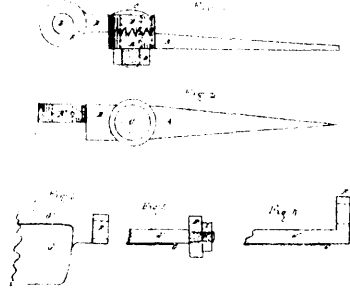
2103 Reynor's Gas Illuminator.



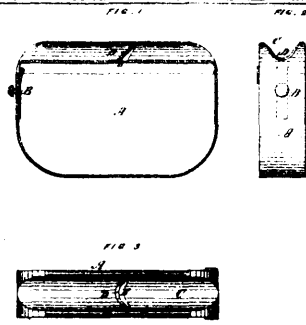
2104 Gordon, Currier & Colby's Self-Binding Harvester.



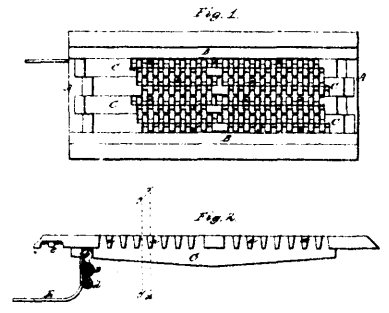
2105 Stackhouse's Snow Plough.



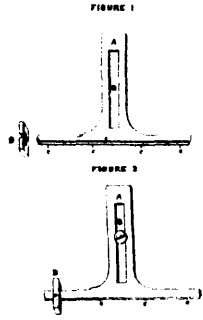
2106 Gilbert's Mode of Attaching a Mowing Scythe to the Snath.



2107 Hunter & Foster's Tobacco Box and Cutter.



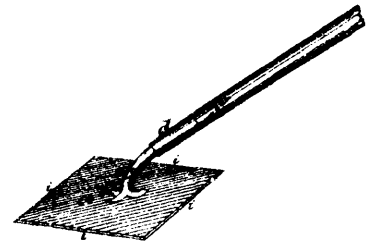
2108 Stanton's Grate Bar.



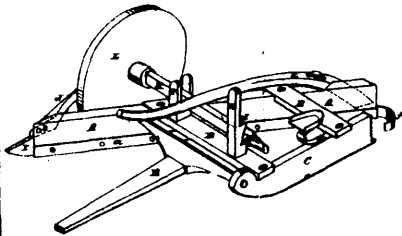
2109 Verrall's Machine for Adjusting Cards, etc., on the Planers of Printing-Presses.



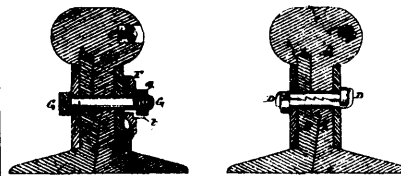
2110 Harper & Smith's Spinning Bait for Fishing.



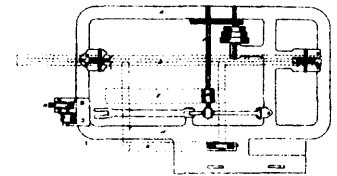
2111 Cooker's Improvement on Hoes.



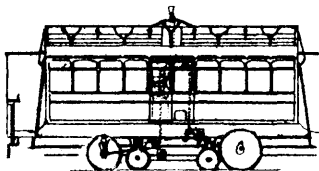
2113 Thompson's Road Scraper.



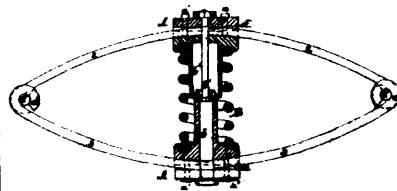
2114 McIntyre's Railroad Rail and Fastening.



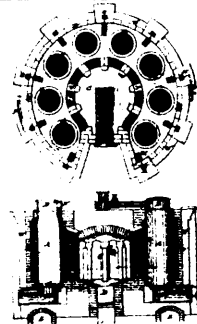
2115 Goldie & Cameron's Shingle Machine.



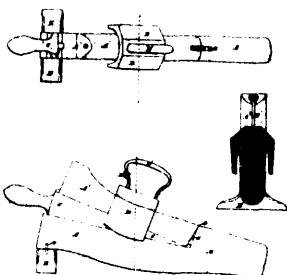
2116 Grantham's Steam Carriages for Tramways.



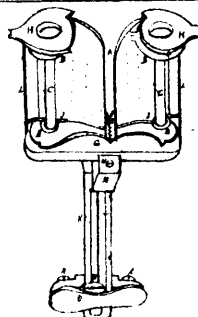
2117 Gardiner's Railroad Car Spring.



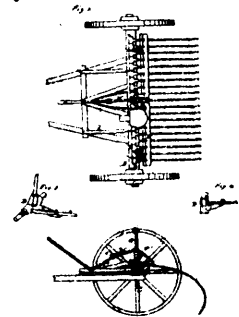
2118 Allen's Hydrogen Gas Generator.



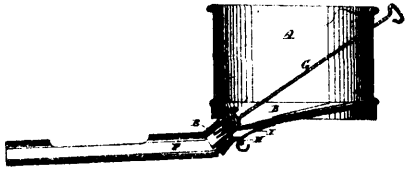
2119 Tillinghast's Machine for Ironing the Bottoms of Trousers Legs.



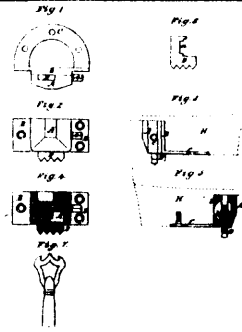
2120 Howard's Rein-Holder.



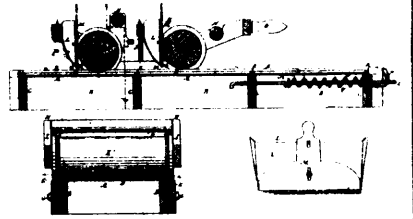
2121 Austin's Horse Rake.



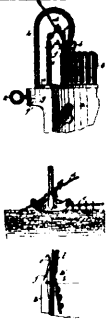
2122 Strong's Milk Weighing Can and Conveying Spout.



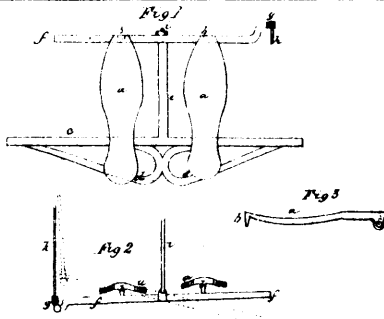
2123 Colby's Ice Creeper.



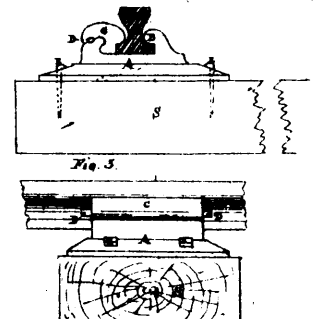
2124 Conger's Machine for the Manufacture of Artificial Roofing.



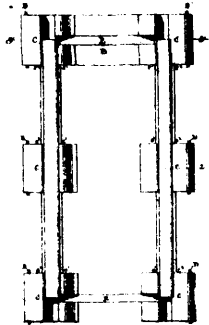
2125 Shailer & Ford's Knitting Machine.



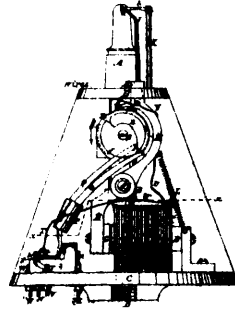
2126 Webster's Sewing Machine Treadle.



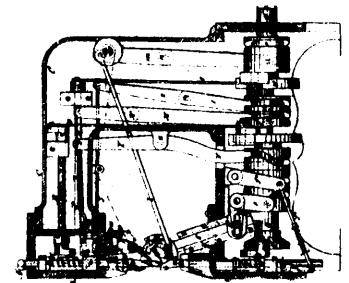
2127 Van Guysling's Railroad Chair.



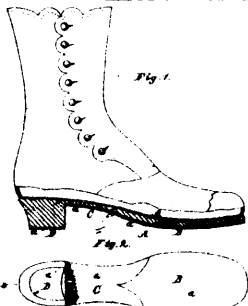
2128 Van Guysling's Railroad Chair and Support.



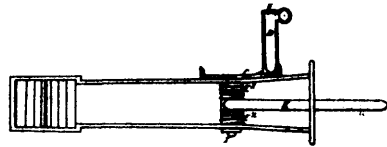
2129 Tirrell's Gas Electrical Lighting Apparatus.



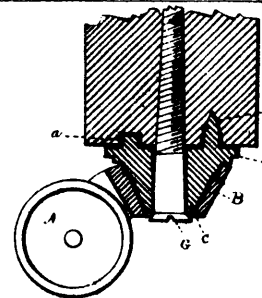
2130 Stein's Boot and Shoe Sewing Machine.



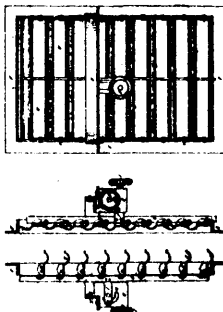
2131 Bryant's Mode of Finishing the Soles of Boots and Shoes.



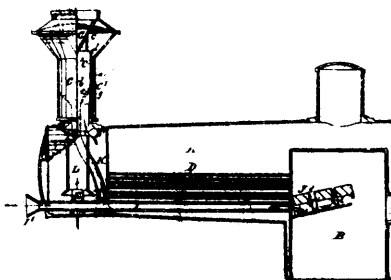
2135 Scott's Car-Coupler.



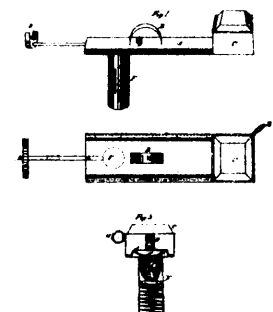
2136 Ford's Furniture Castor.



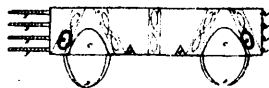
2137 Rodden's Metallic Blind.



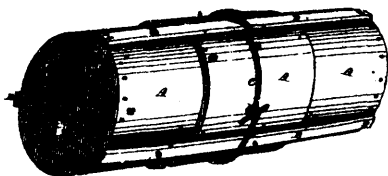
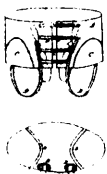
2138 Hawkes & Paine's Spark and Smoke Consumer for Locomotives.



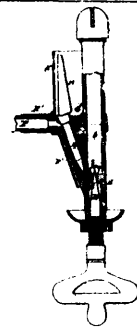
2139 O'Sullivan's Nutmeg Grater.



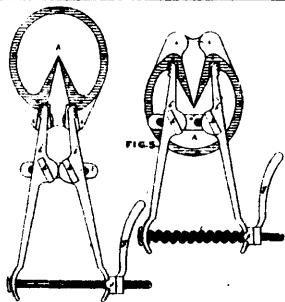
2140 Fitch's Truss.



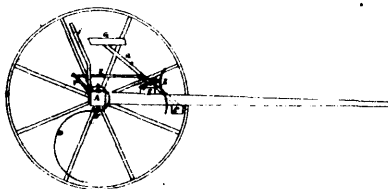
2141 Strong & Manual's cheese Box.



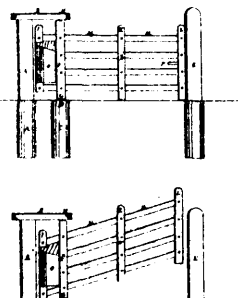
2142 Park's Vapour Burner.



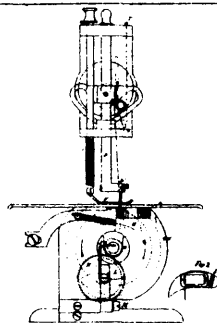
2143 Armstrong's Horse Hoof-Spreader.



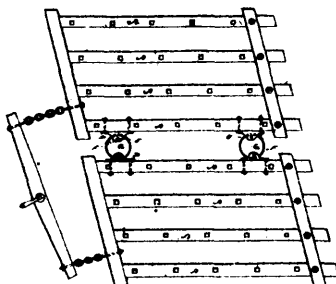
2144 Paddock's Horse Rake.



2145 Frazer's Balance Farm Gate.



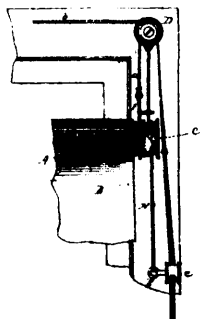
2146 Henderson & Wright's Sewing Machine.



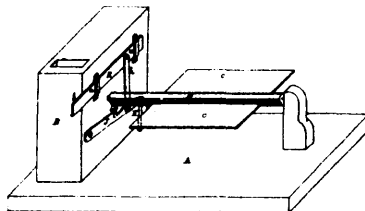
2147 Hough's Harrow.



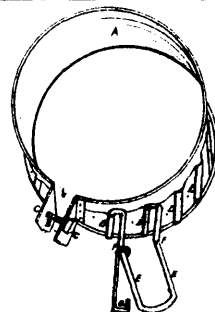
2148 Pagnuelo's Maple Sap Clarifying and Evaporating Apparatus.



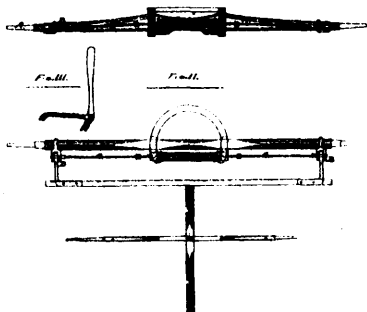
2149 Buckley & Sawyer's Curtain Fixture.



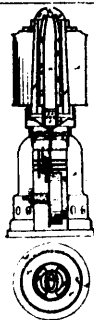
2150 Fuller's Improvement on Reed Organs.



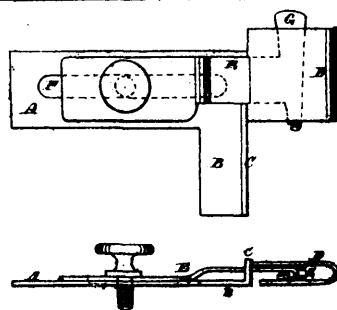
2151 Kennedy's Clothes Rack.



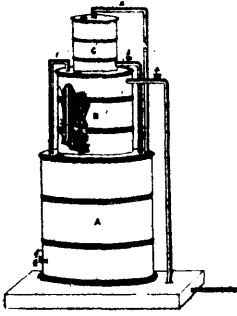
2152 Macbeth's Carriage Pole and Thill Shifter.



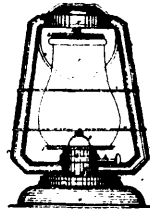
2153 Hitchcock's Improvements on Lamps.



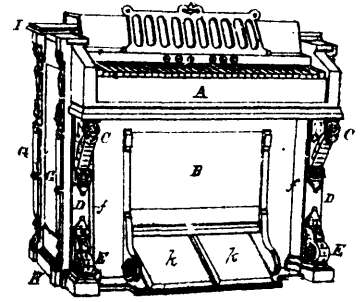
2154 Miller's Sewing Machine Hemmer.



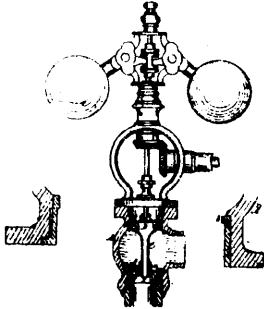
2155 Hicks' Process and Machine for Making Gas.



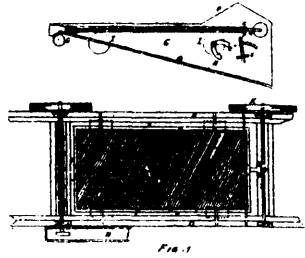
2156 Stone's Kerosene Lantern.



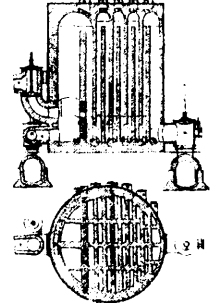
2157 Fuller's Parlor Organ.



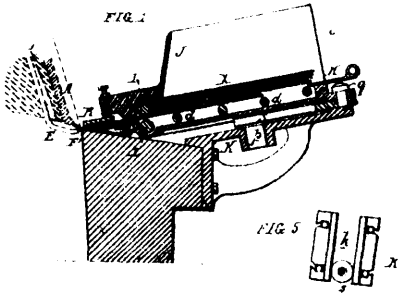
2159 Cogswell's Improvement on the "Judson Governor" for Steam Engines.



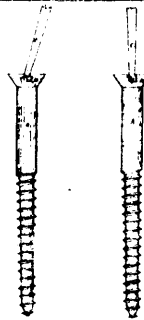
2160 Gillespie's Grain Threshing Machine.



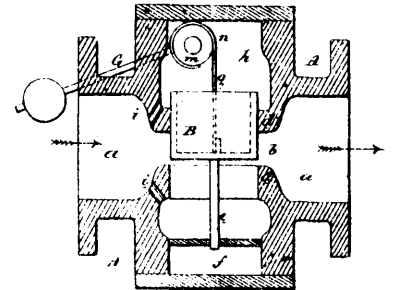
2161 Whitwell's Apparatus for Heating Air and Gases.



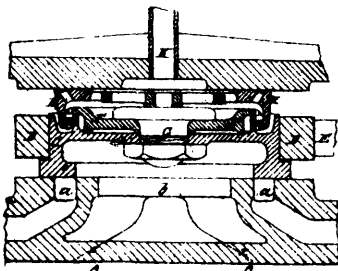
2162 Lawrence's Cut Nail Machine.



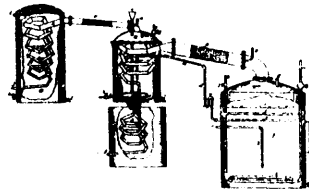
2163 Lighthall & Palen's Wood Screw and Screw Driver.



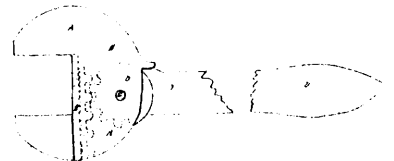
2164 Kitson & Carr's Automatic Regulating Valve.



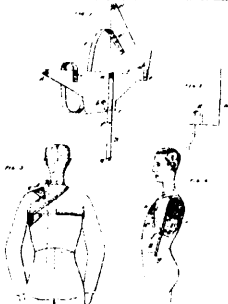
2165 Church's Improvements on Steam Engines, partly applicable to Hydraulic Rams and Pumps.



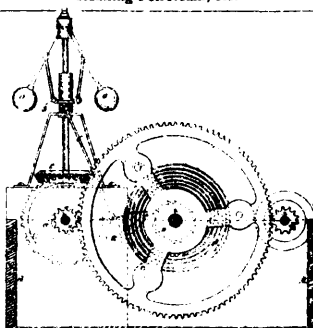
2166 Freatiss & Howell's Apparatus for Distilling and Refining Petroleum, etc.



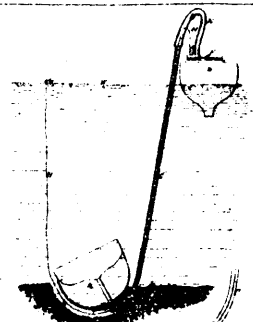
2167 Gilbert's Wrench.



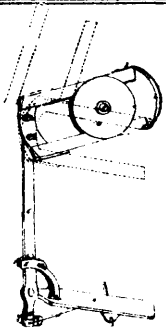
2169 Johnston's Art of Cutting Clothes and Apparatus therefor.



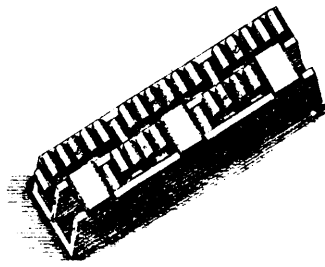
2170 Fox's Spring Power Transmitting Motion to Sewing and other Machines.



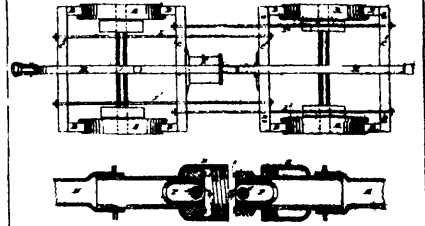
2171 Knapp's Apparatus for Raising Wrecks.



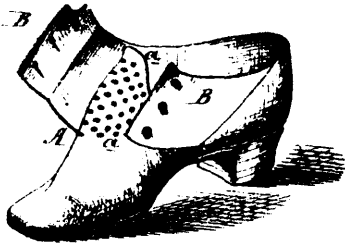
2172 Kirkham's Machine Treadle.



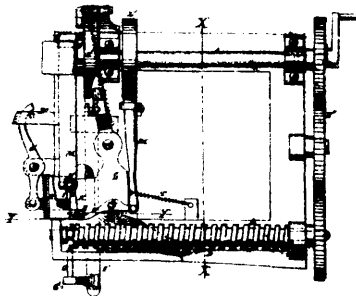
2173 Hodge's Improved Endless Chain Horse Power.



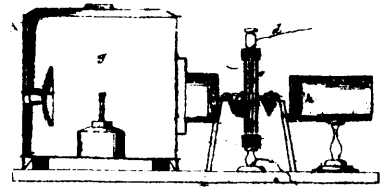
2174 Ketchum's Steam and Air Car-Brake.



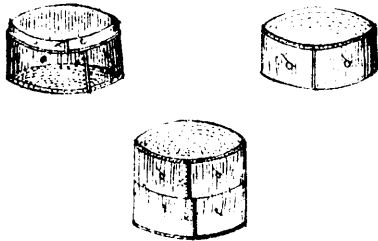
2175 Evans' Improved Shoe.



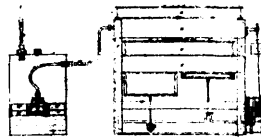
2176 Wills' Horse Shoe Nail Machine.



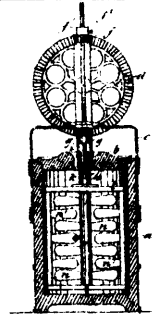
2177 Highton's Improvements on Electric Telegraphs.



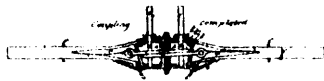
2178 Moore's Cheese Box.



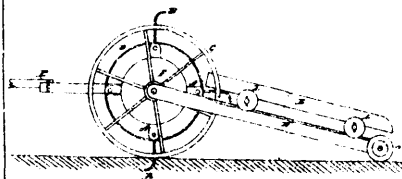
2179 Harrison's Manufacture of Lighting and Heating Gas and Apparatus therefor.



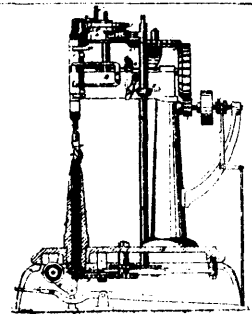
2180 Wattles & Cable's Clarn.



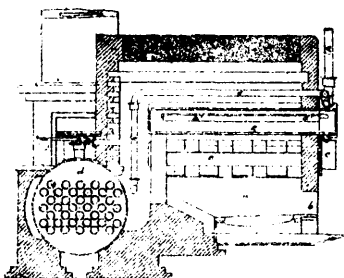
2181 Scott's Car-Coupler and Buffer.



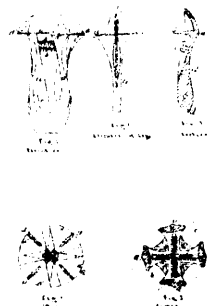
2182 Bawtinheimer's Potato-Digger.



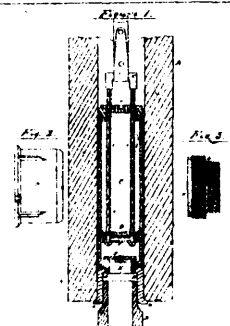
2183 Sheffield & Mellor's Machine for Sewing Leather.



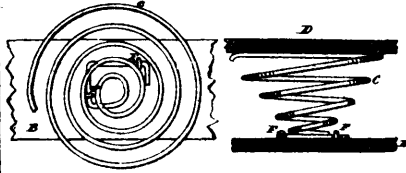
2184 Ruck's Manufacture of Gas.



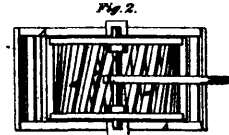
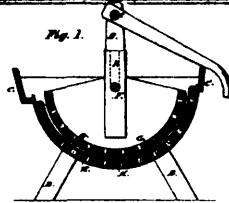
2185 Collicott's Machine for Cleaning Boiler Tubes



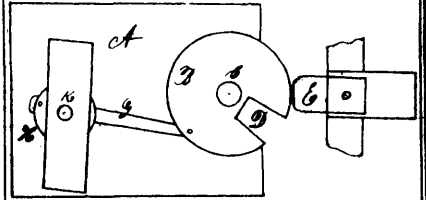
2186 Graser's Improvements in Pumps.



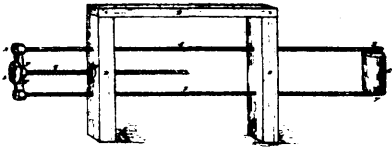
2187 Wells' Spring Bottoms for Bedsteads and Seats.



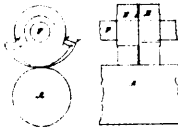
2189 Freeman's Washing Machine.



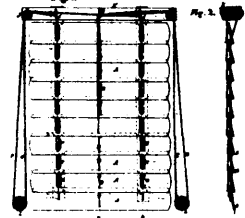
2180 Burge's Time Lock.



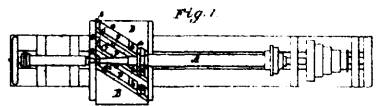
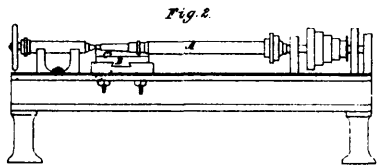
2191 Johnston's Ship Plank and Roller Gauge.



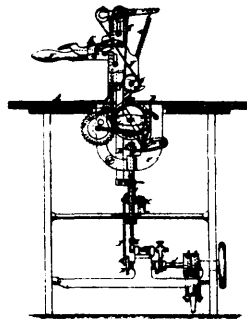
2192 Cox's Compound Friction Pulley Hub.



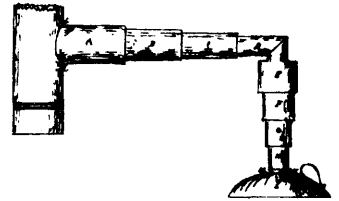
2193 Metcalf's Venetian Window Shade.



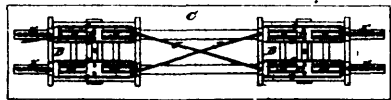
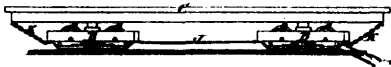
2194 Forrest's Axle Blank Finishing Tool.



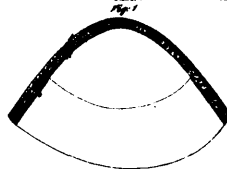
2195 Warth's Machine for Cutting Textile Materials.



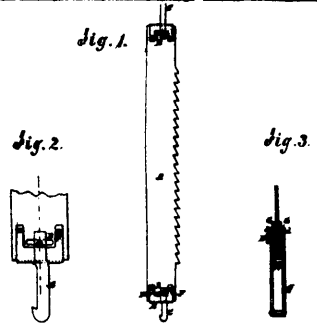
2186 Newhall's Kitchen Steam and Smell Conductor.



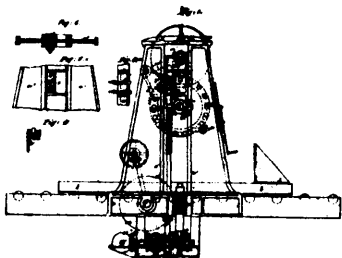
2187 Emery, Doyen & Sparrow's Safety Shoe for Railway Cars.



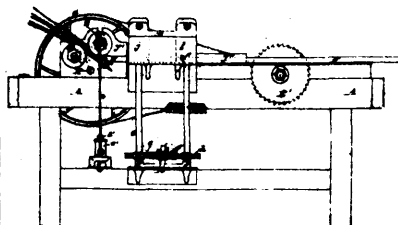
2188 Waring's Felt Hat.



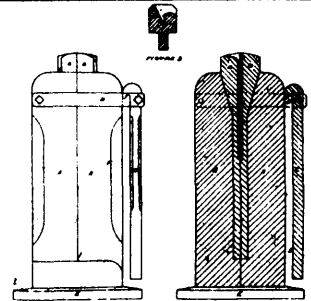
2190 Sproul & Coffin's Improved Saw.



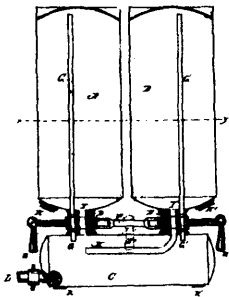
2200 Holmes and Payton's Machine for Dressing Stone.



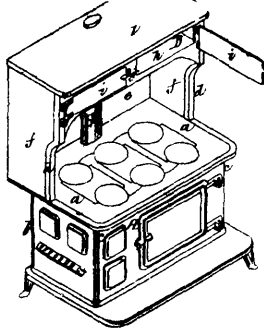
2201 Rider's Machine for making Barrel Hoops.



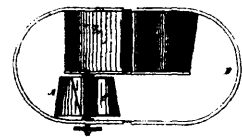
2202 Kilgore's Cant-Hook Machine.



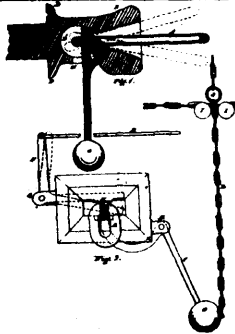
2203 Gardner & Beasley's Fire Extinguisher.



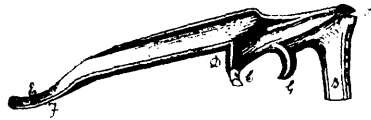
2204 Magee's Portable Cooking Range.



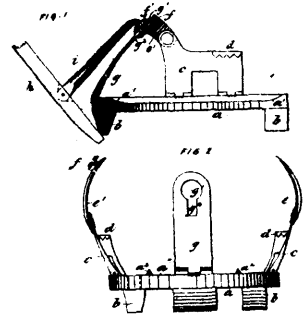
2205 Nugent's Paper Pulp Propeller.



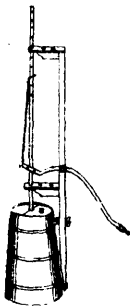
2206 Holman & Henwood's Car-Coupler.



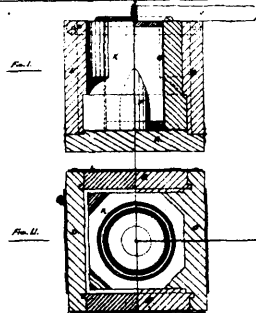
2207 Grant's Combined Pot Tilter and Cover Holder.



2208 Galipo's Horse Shoe.



2209 Bates & McKenny's Churn Operating Attachment.



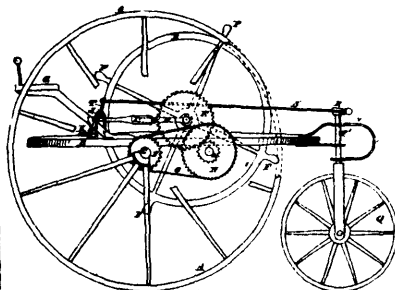
2210 Jacob & Jolliffe's Flask for Moulding Stove-Pipe Stones.



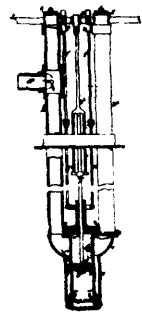
2212 Wilmington's Car Wheel.



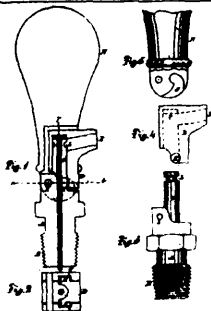
2213 Kent's Corn Planter.



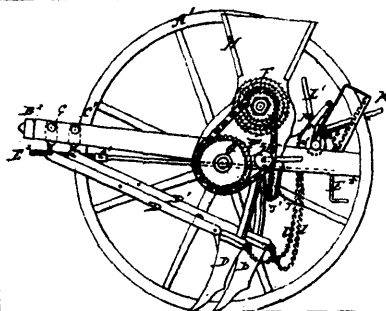
2214 Fournier's Hand Propelling Carriage.



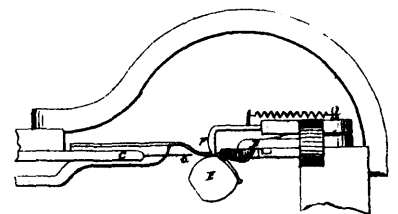
2215 Wightman's Improvements in the Pumps of Hydraulic, Steam, and other Engines.



2216 Painter & Keiser's Gauge Cock for Steam Boilers.



2217 Patric's Seeding Machine.



2218 Crosby & Baldwin's Machine for Sewing the Soles of Boots and Shoes.