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# The Canadian Patent Office

## RECORD




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### INVENTIONS PATENTED.

No. 4065. THOMAS M. CHAPMAN, Oldtown, Me., U. S., 18th November, 1874, for 5 years: "Saw-Sharpening Machine." (Machine à affûter les scies.)

*Claim*.—1st In combination with the stationary jaw *c*, the vertically swinging jaw *f*, attached to the arm *e*, and clamped to the jaw *c*, by the set screw *g*, on the end of said jaw substantially as described. 2nd. The feeding devices *s*, the friction rollers *i*, *i*, *i*, feeding rollers *h*, *h*, with their shaft and gears *l*, *n*, and shaft *m*, level gear and shaft *p*, connecting them with the treadle *o*, whereby motion is transmitted to said rollers: 3rd. The combination of the feeding devices *s*, with the swivelling standard *b*, as set forth.

No. 4066 HENRY E. CHAMPION, Detroit, Mich., U. S., 18th November, 1874, for 5 years: "Improvements on Steam Boiler Furnaces." (Perfectionnements aux fourneaux des chaudières à vapeur.)

*Claim*.—1st. The combination with a boiler furnace having a finely perforated grate and a tight ash-pit, of a continuous air blast and an intermittent steam blast entering the closed ash pit: 2nd. The combination with a boiler furnace having a perforated grate and tight ash pit, of a continuous air blast and an intermittent steam blast entering the ash pit, and a second air blast entering the combustion chamber behind the bridge wall: 3rd. The arrangement of the air blast pipes *e*, *e*, and exhaust steam pipe *F*, with relation to the bridge wall *C*, and grate *D*, of a boiler furnace having a closed ash-pit: 4th. The arrangement of the air blast pipes *e*, *e*, and exhaust steam pipes *F*, *F*, with relation to the bridge wall *C*, and grate *D*, of a boiler furnace having a closed ash-pit: 5th. The intermittent blasts under the grates, in a tight ash-pit, for the purpose of raising and breaking up the agglomerated particles of coal, in the grates, as described.

No. 4067. THOMAS BRANIGAN, Beloit, Wis., U. S., 18th November, 1874, for 5 years: "Boot-Tree." (Embauchoir.)

*Claim*.—1st. The sliding front *B*, rod *a*, collar *O*, bearings *g*, nut *q*, pitman *h*, and hook *e*: 2nd. The combination of the sliding front *B*, foot parts *C*, and *D*: 3rd. The rod *E*, stretching devices *G*, nuts *a*, arms *r*, *r*, follower *f*, collar *u*, rack *v*, and spring bearing *t*: 4th. The reversible instep shaping piece *Q*: 5th. The parts *A*, *F*, and *S* in combination with the parts *B*, *C*, *D*, and *Q*, rods *E*, and *r*, frame *G*, nuts *a*, arms *r*, *r*, follower *f*, collar *u*, rack *v*, and spring bearing *t*, as specified.

No. 4068. ARTHUR W. COVELL, South Elmsley, Ont., 18th November, 1874, for 5 years: "Saw-Sharpener." (Affûteur de scie.)

*Claim*.—1st. A saw-filing device composed of the slotted frame

*A*, stay bar *P*, sleeve *E*, shaft *F*, and arms *G*, *G*, arranged and combined as specified, and provided with the set screws, as described for clamping the frame to the saw and holding the file in the manner set forth: 2nd. A saw-swing composed of the stem *J*, having a slotted head *K*, bevelled end punch block *M*, and sleeve *N*, arranged and combined as specified.

No. 4069. JAMES STEEL and JOHN McINNES, Glasgow, Scot., 18th November, 1874, for 5 years: "Air Brake and Train Signal." (Frein et signal de convoi atmosphériques.)

*Claim*.—1st. The arrangement and combination of mechanism constituting the air-brake and signalling apparatus, consisting of the air cylinder *A*, piston *H*, piston rod *J*, links or flexible coupling *R*, air cylinder cover *C*, air vessel *B*, T-piece coupling *L*, and signalling whistle *e*, operating as described: 2nd. The construction of the air cylinder *A*, and air vessel *B*, in one piece as described: 3rd. Placing the air cylinders *A*, at the ends of railway carriages, vans, or other vehicles, and having the air vessel *B*, below the seat *V*, of railway carriages: 4th. The arrangement and construction of coupling *l*, for effecting the connection between railway carriages or other vehicles, to which air brake apparatus is applied: 5th. The air reservoir *C*, on the tender for containing the compressed air and consisting of one or more tubes placed round the tender: 6th. The construction of the air cylinder cover *C*, with a stuffing box both inside and outside the inner stuffing box *G*, also forming a support for the piston *H*, when the brakes are not applied.

No. 4070. CHARLES F. MURDOCK, Detroit, Mich., U. S., 18th November, 1874, for 5 years: "Stop Valves." (Soupapes d'arrêt.)

*Claim*.—1st. A stop valve with a sliding valve plate or plates having an opening for the admission of said plate or plates in one side of the lateral chamber or extension into which they slide in opening the valve: 2nd. A stop valve body *A*, having a lateral chamber or extension *d*, provided with an opening in one side to admit the valve plate or plates: 3rd. The body or case *A*, having the lateral chamber or extension *d*, provided with the side opening *J*, and the cap or cover *F*: 4th. The combination in a stop valve having two seats or throats, of two valve plates, an intermediate brace, and an operating screw as described: 5th. In combination with the screw *E*, and plates *B*, *C*, the brace *D*, having the lip *h*: 6th. In combination with the plates *B*, *C*, the brace *D*, having the eccentric head as shown: 7th. In combination with the brace having the eccentric or inclined seat or bearing to receive said head: 8th. In combination with the case or body *A*, having the two seats or throats *e*, the valve plate *B*, provided with the lip *h*, and arms *g*, the brace *D*, provided with the lip *h*, the plate *C*, provided with the annular flange *r*, and the screw *E*, all constructed and arranged to operate as described: 9th. In combination with the body or case having the two seats or throats, the screw *E*, ring or carriage *K*, valve plates *B*, and *C*, and the brace *D*, arranged and operating as described: 10th. The combination of a body having two seats, two valve plates and an intermediate brace having one or both ends made of a spherical form, placed at an inclination between the plates: 11th. A circular valve plate provided with ratchet teeth and a pawl arranged to engage therewith when the valve is moved, whereby the plate has imparted to it a rotary motion to prevent unequal wear as described.

No. 4071. SMITH H. FINCH, New-York, U. S., 19th November, 1874, for 5 years: "Railroad Switch." (Aiguille de railroute.)

*Claim*.—The combination of the slotted sliding bar *A*, with the bell-crank *I*, rod *O*, reciprocating block *K*, and a suitable operating lever all as described.

No. 4072. EDWIN BEARD, Chicago, Ill., U. S., 19th November, 1874, for 15 years: "Machine for Nailing Boxes." (Machine à clouer les boites.)

*Claim.*—1st. Two simultaneously operating machines arranged as described with relation to each other, for the purpose of operating together along the ends or sides of the parts of the same box, one of the said machines being adjustable with relation to the other, for the purpose of thereby nailing together boxes of different sizes; 2nd. Two simultaneously operating machines connected to each other by means of the rods of bars M, M, adjustably attached to one of the machines and operating in connection with cams in the other as described for the purpose of thereby rendering the machines adjustable with relation to each other, and tightening the grip of the machines upon the parts of the box during the operation of nailing; 3rd. Two or more box supporting tables horizontally adjustable with relation to each other as specified; 4th. Dies or nail-holders and corresponding punches or drivers arranged as described with relation to one or more edges of the box, one or more of the said dies and punches being horizontally adjustable in a line at, or nearly at, right angles to the line or lines occupied by other like parts, as specified; 5th. The combination of the table O, rack L, pinion J, vertically adjustable pin T, and the gate P, provided with projections arranged for contact with parts of the box during the upward movement of the table; 6th. The combination of the clip supports E, and E', resting freely in horizontal grooves in the frame, clips L, L', dies D, D', bars A, A', and A'', resting freely in the horizontal ways in the gate P, and pins K, K', as specified; 7th. The combination of the screws F, F', wheels G, G', horizontally sliding clip supports E, E', crank shaft H, and wheels I, I', as specified; 8th. The combination of bars A, A', gate P, dies or nail holders D, D', supports E, E', clips L, L', and spindles N, N', as specified; 9th. The rod Z, connected to the clutch operating mechanism and provided with the vertically adjustable temper screw e, in combination with the gate P, provided with a stop arranged to strike the point of the said screw during the upward movement of the gate as specified; 10th. The clips provided with one or more punches, in combination with the spindles passing freely through the clips and provided with one or more dies or nail holders rigidly attached thereto and arranged to receive the punch or punches as specified; 11th. The combination and arrangement of the shafts C, and G', friction wheel I, pinion J, wheel K, pinion J', and vertically adjustable rack L, provided with the table O, all as specified; 12th. The self-feeding attachment provided with the yielding jaws U, U', in combination with the lever V, provided with the V-shaped stop V, as specified.

No. 4073. ROBERT M. EVANS, Buffalo, N. Y., U. S., 19th November, 1874, for 5 years: "Number Printer." (Mode d'impression des nombres.)

*Claim.*—In combination with the type-wheels of a consecutive numbering apparatus, the pivoted lever L, lever J, with its lugs M, spring O, pawl H, and ratchet wheel J', all constructed and operating as described.

No. 4074. JOHN F. COLLINS, and JOHN W. CUMMING, Montreal, Que., 19th November, 1874, for 5 years: "Process of Separating Animal from Vegetable Matters." (Procédé de séparation des substances animales des végétales)

*Claim.*—1st. The application of diluted sulphuric acid, chloride of sodium, and bicarbonate of soda for the purposes specified; 2nd. The process of excessive heating of the solution and stock in combination with pulverized charcoal and guano; 3rd. The restoration of the animal matter to its natural texture by the use of bicarbonate of soda and alum, in the manner described.

No. 4075. EUGENE T. DUCHARME, Montreal, Que., 19th November, 1874, for 5 years: "Automatic Oil Can." (Bidon automatique à l'huile.)

*Claim.*—The combination of the body A, spout C, and inner tube D, all working together as described.

No. 4076. FREDERICK PROUDFOOT, Toronto, Ont., 19th November, 1874, for 5 years: "Stove-Pipe Drum." (Poêle sourd.)

*Claim.*—The stove-pipe drum A bearing a close bottomed internal air and water chamber B, suspended by side contact therewith and perforated to allow a through circulation of external air. 2nd. A stove pipe drum A, having a close bottomed internal air and water chamber B, in contact at opposite sides both having corresponding perforations D, or openings. 3rd. A stove pipe drum A, having a close bottomed internal air and water chamber B, in contact with one side and provided with perforations at top or at top and sides as set forth.

No. 4077. CHARLES P. CHISHOLM, Oakville, Ont., 19th November, 1874, for 5 years: "Plant Box." (Boite à plantes.)

*Claim.*—The oblong plant box A, with sides and ends splayed from the bottom outward, constructed of wood veneer, and consisting of the pieces A and A', bonds B and B', and angle pieces C, arranged as described.

No. 4078. SILAS P. LITTLEFIELD, Lynn, Mass., U. S., 20th November, 1874, for 5 years: "Railway Carriage Way Meter." (Compteur de voiture de railroute.)

*Claim.*—The combination of the movable seat A, the register E, and one of the wheel axles g, with the clutch k, l, the mechanism for operating the clutch as described by means of the seat (viz. the spring e, the shaft f, and its arm g, h,) and with the mechanism for revolving the clutch shaft m, by the said axle, which ever way the latter may be in revolution, this latter mechanism consisting of the gears n, o, shaft p, worm gear q, worm r, shaft s, bevel gears u, v, shaft n, universal joint x, tubular shaft y, shaft z, gear b, collar c, gears e, f, screw i, shoulders k, l, shaft m, bar n, and the rod o, with its arm p, and spring k-z, all arranged and combined as specified: in the registering mechanism described, the seat provided with the flanges a, a, in combination with the supporting frame C, provided with the chamber B, underneath the seat.

No. 4079. ELIJAH LEONARD, London, Ont., 20th November, 1874, for 5 years: "Still and Process of Distilling Petroleum and other Fluids." (Alambic et procédé de distillation du pétrole et autres fluides.)

*Claim.*—1st. The use of flues or tubes 2, in an oil still when the heat from the furnace passes directly through them; 2nd. Passing the condensing pipes a a a through a tank or still H containing crude oil; 3rd. The use of one or more stills in combination with the refining still B, for the purpose of separating the benzine and more volatile elements than refined oil and all foreign matter from the crude oil before it passes into the refining still; 4th. Operating two or more stills by the heat from the same furnace; 5th. Heating the furnace of an oil still by means of a tar burner drawing its supply of tar directly from the still; 6th. The combination of the tank benzine still and refining still when arranged to operate in the constant and regular manner set forth.

No. 4080. GEORGE S. BRUCE, Cincinnati, Ohio, U. S., 20th November 1874, for 5 years: "Coal Box." (Boite à charbon.)

*Claim.*—A coal box A, provided with the lump coal chamber E, having outlet D, and slack magazine F, (the cover B, common to both) channel G and door H at the bottom as described.

No. 4081. RICHARD T. BOOTH, Trumansburg, N. Y., U. S., 25th November, 1874, for 5 years: "Automatic Gas Light Extinguisher." (Ex-tincteur automatique des lumières de gaz.)

*Claim.*—1st. The combination of the sliding bar adapted to be connected with the cock of a gas burner, and the spring I, pawl N, and index shaft O, operated by a clock train for shutting off the gas; 2nd. The combination of the adjusting shaft C, leading screw S, index shaft O, and stud M, for operating pawl N, to release the slide connected with the gas cock; 3rd. The index shaft O, having stud M, and cog wheel T, in combination with the leading screw S, pawl N, slide E, stud M, spring I, link H, and a train of gearing as described; 4th. In combination with the sliding bar E adapted to be connected to a gas cock, the arm A and spring B, with the balance wheel D, in order to stop the clock work when the sliding bar is released as described.

No. 4082. ALBERT EAMES, Bridgeport, Ct., U. S., 25th November, 1874, for 15 years: "Pattern Moulding Machine." (Machine à faire les modèles.)

*Claim.*—1st. A carriage with segmental wheels in combination with a cross-platen, and head plate, the combination being and acting as described. 2nd. In combination with a platen and head block, a carriage with segmental wheels, provided with connecting rods, or the substitute therefor, for causing all the wheels to move through the same arc, the combination being as set forth; 3rd. In combination with a platen and head block, and a carriage with a hole in it, the stopper and its attached plate; the combination being such as described. 4th. In combination with a carriage

mounted upon segmental wheels and a platen, a latch which stops the carriage in proper position over the platen, and in proper position for the removal of the flask, the combination being such as set forth.

No. 4083. LOUIS PRENTICE, Montreal, Que., 25th November, 1874, for 5 years: "Cigar Mould." (Moule de cigarre.)

*Claim.*—1st. The combination of the two parts of the mould A and B, with cut C, or out E; 2nd. The combination of the two parts of the mould A and B, with one or more holes D, as described.

No. 4084. JOSEPH HIGGINBOTHAM, Toronto, Ont., 25th November, 1874, for 5 years: "Washing Machine." (Machine à laver.)

*Claim.*—The combination of the thumb screws D, D, moveable bar A, grooved rod H, moveable roller C, pin I, and clamps J, J, as set forth.

No. 4085. NORRIS W. SIMONS, Ashtabula, Ohio, U. S., 25th November, 1874, for 5 years: "Harness Hold-back." (Ragot de limonière.)

*Claim.*—A self-detachable hold-back, consisting of the plate A, hollow post a supplied with the recesses or ears a<sub>2</sub>, a<sub>3</sub>, spring B, and ring or holder C constructed on its transverse portion with the shoulder or tenon c<sub>3</sub>, all constructed, arranged and combined as set forth.

No. 4086. EMMET HORTON, Hartford, Ct., U. S., 25th November, 1874, for 5 years: "Reaper and Binder." (Moissonneuse-lieuse.)

*Claim.*—1st. The combination of the shaft box b<sub>6</sub> and the two box halves a<sub>4</sub>, a<sub>5</sub>, one able to contain the other and both embracing the shaft box; 2nd. The lever a<sub>8</sub>, having the volute forks a<sub>10</sub>, a<sub>11</sub>; 3rd. The combination of the pivoted ball lever a having the volute forks a<sub>10</sub>, a<sub>11</sub>, with the clutch half a<sub>6</sub>; 4th. The combination of the rake arm c<sub>11</sub>, pivoted on a universal joint, the arm c<sub>15</sub> sliding in guides c<sub>17</sub> and the rake c<sub>13</sub>; 5th. The combination of the rake arm c<sub>11</sub> pivoted on a universal joint, the forked pawl c<sub>19</sub>, and the saddle c<sub>20</sub>; 6th. The combination of a rake arm c<sub>11</sub>, arm c<sub>16</sub>, guides c<sub>17</sub>, rakes c<sub>13</sub>, arms c<sub>14</sub>, and guide rod c<sub>15</sub>; 7th. The combination of disc c<sub>8</sub>, locking piece d<sub>1</sub>, spring d<sub>2</sub>, seat for locking piece in shaft box c<sub>7</sub>, and clutch d; 8th. The combination of the lever d<sub>3</sub>, disc c<sub>8</sub>, locking piece d<sub>1</sub>, spring d<sub>2</sub>, seat for locking piece in shaft box c<sub>7</sub>, and clutch d; 9th. The combination of clutch d, locking piece d<sub>1</sub>, spring d<sub>2</sub>, shaft box c<sub>7</sub>, disc c<sub>8</sub>, lever d<sub>3</sub>, cam point d<sub>4</sub>, and rod d<sub>5</sub> operating similar clutch mechanism inside of gear d<sub>6</sub>; 10th. The combination of the upright d<sub>11</sub>, arm d<sub>10</sub>, fork arm d<sub>12</sub>, pivoted to arm d<sub>10</sub>, and having stops d<sub>16</sub>, and cam d<sub>15</sub>, 11th; The combination of cam disc c<sub>8</sub>, rod d<sub>7</sub>, upright d<sub>11</sub>, arm d<sub>10</sub>, fork arm d<sub>12</sub>, and cam d<sub>15</sub>; 12th. The rotary slotted disc g, having slot g<sub>1</sub>, from one side to an open centre; 13th. The rotary slotted disc g, having slot g<sub>1</sub>, from one side to an open centre and bearing the sunken gear shown; 14th. The pinion g<sub>4</sub>, bearing the extra large tooth g<sub>5</sub>, in combination with the slotted disc g, having slot g<sub>1</sub>; 15th. The combination of the slotted disc g, pinion g<sub>4</sub>, shaft g<sub>3</sub>, pinion h, rack h, rack arm h<sub>4</sub>, cam groove h<sub>5</sub>, and disc d<sub>19</sub>, and pin h<sub>6</sub> whereby lateral rotation is given to slotted disc; 16th. The combination of slotted disc g, disc-box g<sub>2</sub>, shaft g<sub>3</sub>, gear g<sub>7</sub>, rack g<sub>8</sub>, rack arm h<sub>7</sub>, with pin upon its side, and cam groove h<sub>5</sub>, in disc d<sub>19</sub>, whereby longitudinal rotation is given to slotted disc and disc-box; 17th. The combination of slotted disc g, pinion g<sub>4</sub>, shaft g<sub>3</sub>, pinion h, rack h, rack g<sub>8</sub>, gear g<sub>7</sub>, sleeve shaft g<sub>6</sub>, and disc-box g<sub>2</sub>; 18th. The combination of the grasper arm e; bearing pinion e<sub>10</sub>, rack toothed pitman e<sub>8</sub>, arm e<sub>7</sub>, bearing clutch half e<sub>3</sub> on its hub, clutch half e<sub>2</sub> and spring e<sub>4</sub>; 19th. The combination of the grasper arm bearing pinion e<sub>10</sub>, rack toothed pitman e<sub>8</sub>, arm e<sub>7</sub>, bearing clutch-half e<sub>3</sub>, on its hub e<sub>6</sub>, clutch half e<sub>2</sub>, box e<sub>14</sub>, projection e<sub>13</sub>, pawl e<sub>11</sub>, and ratchet e<sub>12</sub>; 20th. The pivoted needle arm f, bearing the hollow angular needle f<sub>1</sub>; 21st. The combination of the pivoted needle arm f, connecting rod f<sub>5</sub>, lever f<sub>6</sub>; bearing pin on its side, and cam grooves f<sub>7</sub>; 22nd. The combination of the ear h<sub>9</sub>, with the disc-box; 23rd. The combination of the twine stretcher i, pinion i<sub>1</sub>, rack lever i<sub>2</sub>, and cam i<sub>3</sub>; 24th. The forked twine retainer m, constructed and operating as described; 25th. The combination of the forked twine retainer m, pinion m<sub>1</sub>, rack lever m<sub>2</sub>, cam i<sub>3</sub>, stationary knife m<sub>3</sub>, and moving knife m<sub>4</sub>; 26th. The combination of the slotted disc and the twine hold upon its face composed of the morticed body n, latch n<sub>1</sub>, and spring n<sub>2</sub>; 27th. The twine support o, pivoted to the cap plate of disc box and operating as described; 28th. The combination of the binder of the vibratory grasper arm with the vibratory needle arm both having movements as described.

No. 4087. SYLVESTER J. WRIGHT, Madrid, N. Y. U. S., 25th November, 1874, for 5 years: "Combined Carriage Wrench and Bit-Brace." (Clé de voiture et vilbrequin combinés.)

*Claim.*—1st. The brace A, having firmly attached thereto the flanged and slotted plate B, and plate D, adapted to slide freely

thereon, in combination with curved jaws C, C, hinged to plate D, and sliding in the slotted plate B; 2nd. The employment and use with the jaws c, c, of a bit holding device fitting intermediately, having a central hole to receive the shank of the bit, and a set screw or other contrivance for holding the bit therein removably as set forth; 3rd. Providing the jaws c, c, with brackets for receiving the thrust of the bit holding device as set forth; 4th. Providing the plate D, with a thumb screw for fixing the same to the brace shank for the purpose set forth; 5th. Providing the brace A, with a plate J, as set forth.

No. 4088. WILLIAM S. TAYLOR, Toronto, Ont., 25th November, 1874, for 5 years: "Ticket System." (Mode de distribution des billets.)

*Claim.* The combination of the three tickets and stubs A, B, and C, being of progressive value and manipulated so as to constitute an accurate record of the passenger traffic on street railways or their equivalent, as described.

No. 4089. EDWARD A. YERKES, Philadelphia, Pa., U. S., 25th November, 1874, for 5 years: "Manufacture of Shovels and Spades." (Fabrication des pelles et des bêches.)

*Claim.*—1st. The improvement in the manufacture of shovels and spades involved in the successive squeezing operations stated, and the results of which are illustrated in Figures 1 to 8 inclusive, for the purpose described; 2nd. The dies F, F, with the concavities G, G, as set forth; 3rd. The die K and die M, combined and operating as set forth; 4th. The series of squeezing dies, as set forth, and illustrated in Figures 10 to 23 inclusive for the purpose specified.

No. 4090. DAVID RENSHAW, Boston, Mass., U. S., 25th November, 1874, for 5 years: "Improvements on Steam Generators." (Perfectionnements aux générateurs de vapeur.)

*Claim.*—1st. The combination of the base B, the section A<sub>1</sub>, E, made with the projections and caps a, and the steam drum G, placed outside; 2nd. The base K, constructed of flat sections, stay bolted as set forth being of the same width as the upper part of the furnace, and connected therewith by means of flanged projections; 3rd. The horizontal internal sections M, constructed as shown, each section extending from the front to the rear of the furnace and communicating with the base and upper sections by means of the curved pipes m<sub>1</sub>, m<sub>2</sub>; 4th. The combination of the base K, upper section i, i inner sections M, and drum N, said base K, and section i, being of the same width and stay bolted, and each of the sections M, extending from the front to the rear of the furnace; 5th. The flat stay bolted sections S, arranged laterally within the furnace, and crossing the longitudinal centre thereof, and having communication with the longitudinal water chamber beneath, said sections being arched above and below; 6th. The combination of the reverberatory furnace and steam drum T, with the flat stay bolted sections S, arranged laterally within the furnace, and crossing the longitudinal centre thereof, and having communication with the longitudinal water chambers beneath, said sections being arched above and below as specified; 9th. The internal sections X formed of a continuous curved pipe with inner arches X<sub>3</sub>, said arches being of less diametrical dimensions than the pipe X<sub>2</sub>, so as to produce circulation; 8th. The combination of the sections X, formed of a continuous curved pipe, made with the inner arches X<sub>3</sub>, the tubular water chamber J, and steam drum V, as shown.

No. 4091. THOMAS R. CRAMPTON, Westminster, Eng., 26th November, 1874, for 5 years: "Improvements on the Manufacture of Iron and Steel, on the Construction and Lining of revolving Furnaces and on Apparatus connected therewith." (Perfectionnements dans la fabrication du fer et de l'acier, dans la construction et dans les parois des fourneaux tournants et aux appareils qui s'y rattachent.)

*Claim.*—1st. The construction and use of furnaces having a single revolving chamber heated by the injection of fuel and air, and serving as a gas producing chamber, also as a combustion chamber, and also, as a working or utilising chamber; 2nd. The improved method of conducting the process of re-heating iron or steel to prepare it for being rolled, laminated, or otherwise worked, by using a furnace having a working chamber which is stationary while the re-heating is going on, but is capable of being revolved, and by lining that chamber with oxide of iron, and by turning the chamber partly round between the heats so as to allow of the repair of the lining; 3rd. The construction and use of furnaces with a revolving gas-producing and combustion chamber combined with a steam-boiler or other apparatus in which the heat is

utilized, fuel and air being injected into the combustion chamber at one end, and the products issuing from the chamber at the same end and passing into the heating space of the boiler or other apparatus. 1th. The arrangements for supplying a number of furnaces with air and powdered fuel from a common source as described and illustrated at Figures 9 and 10: 5th. The combination with the revolving chamber A, of a furnace of a separate hollow wearing ring, figure 2 and 2i, fixed to and revolving with the chamber and having water circulating through it: 6th. The construction and use of furnaces having revolving chambers A, and flue pieces provided with wearing rings J, J', constructed as described in respect to figure 5 of the drawing: 7th. The combination of a rotating furnace chamber with a pipe or pipes through which air and fuel are injected into such chamber in such manner that the said air and fuel on entering the rotating chamber are caused to pass through the flue by which the products of combustion escape from the rotating chamber, as described.

No. 4092. JAMES F. CASS, L'Original, Ont., 26th November, 1874, for 5 years: "Folding Stand." (Trepied pliant.)

*Claim.*—The use and combination of the metal cap C, and the hooks d, d', with a centre block b, and folding arms a, a', as set forth.

No. 4093. CHARLES M. NES, York, Pa., U. S., 26th November, 1874, for 5 years: "Manufacture of Steel." (Fabrication de l'acier.)

*Claim.*—The manufacture of steel from silicon pig iron, either separately or in combination with ordinary pig or cast iron, as described.

No. 4094. SAMUEL KEYS, Bennington, Vt., U. S., 26th November, 1874, for 5 years: "Steam Boiler Furnace." (Fourneau de chaudière à vapeur.)

*Claim.*—1st. The combination of the horizontal steam boiler A, fire chamber B, fire flue C, and air space L, extending between and along the inner and outer casing J, and K, of the said steam-boiler, fire chamber and fire flue, all arranged as described: 2nd. The combination of the boiler A, fire chamber B, fire-flue C, air space L, extending along and between the inner and outer casing J, and K, of the said boiler, fire chamber and fire flue, and the air space or spaces O, immediately under the said fire-flue all arranged as described: 3rd. The combination of the boiler A, fire chamber B, flue C, air heating space L, extended along and between the inner and outer casing J, and K, of the said boiler, fire chamber and flue with or without the heating space or spaces O, and with inlet and outlet passages for air in the lower and upper parts of the said air heating space L, as set forth: 4th. The combination of steam boiler A, fire chamber B, fire flue C, draught chamber G, air heating space L, extending along and between the inner and outer casings J, and K, of the boiler, fire-chamber and fire flue with or without the space or spaces O, and with the air passages M, and N, or their equivalent arranged so as to direct external air into and through the said air heating space L, and thence in a heated condition into the said draught chamber as specified: 5th. The combination of the steam boiler A, fire chamber B, fire flue C, draught chamber G, air heating space L, between the casings J, and K, with or without the space or spaces O, and the air passages M, N, and P, furnished with dampers all arranged to operate as described.

No. 4095. EDWIN M. SLAYTON, Port Byron, N. Y., U. S., 26th November, 1874, for 5 years: "Seamless Paper Vessels." (Vaisseaux en papier sans coutures.)

*Claim.*—1st. A seamless body or shell I, made by winding successive layers of paper, pulp paper, or equivalent fibrous material, upon a mandrel or form for the purpose specified: 2nd. The combination with the body I, of the hoops k, wound either at the ends or the middle, or both as described: 3rd. The combination with the body I, of the concavo-convex heads K, K': 4th. The combination with a mandrel E, of a collapsible jacket H, for the purpose of removing the body or shell from the mandrel, 5th. The combination with a wet paper machine, of a series of two or more mandrels E, E', so arranged that they may be alternated in use as described.

No. 4096. MELANCTHON E. ZELLER, Ivesdale, Ill., U. S., 26th November, 1874, for 5 years: "Harness Findings." (Lormerie de harnais.)

*Claim.*—The saddle plate A, eye a', and cropper loop b, cast in one piece, in combination with the falling hook c, as specified.

No. 4097. WILLIAM J. KENT, Buffalo, N. Y., U. S., 26th November, 1874, for 5 years: "Improvements on Reed Organs." (Perfectionnements aux orgues à jeux d'anches.)

*Claim.*—1st. In combination with a double set of reeds a, a', the three reed openings b, b', c, and three mutes d, c', f, to produce the tone or stop called *voix velouté*, all constructed and arranged to operate as specified: 2nd. In combination with the single set of reeds c, the two reed openings b<sub>1</sub>, b<sub>1</sub>', b<sub>1</sub>1', c', c', c', and two mutes h, g, all constructed and arranged to produce the *Oboue* and clarinet tones as specified: 3rd. Admitting the air vertically directly on to the vibrating ends of all the reeds by means of the vertical openings c, c', c', as set forth.

No. 4098. CARL A. BLOMQUIST, LaPorte, Ind., U. S., 26th November, 1874, for 5 years: "T Rail Joints." (Joints de rails en T.)

*Claim.*—The wedges D, D, and sleeve C, in combination with the leveling pieces E, E, which are connected by the cross-timbers F, F, as described.

No. 4099. WILLIAM F. PATTERSON, Boston, Mass., U. S., 26th November, 1874, for 5 years: "Improvements on Screw-Drivers." (Perfectionnements aux tourne-vis.)

*Claim.*—The blades A, A, threaded bosses B, B, and conical nut C, also the adjustable step D, d, case E, and handle F, as described.

No. 4100. ROBERT FREELAND, Montreal, Que., 26th November, 1874, for 5 years: "Manufacture of Soap." (Fabrication du savon.)

*Claim.*—1st. The novel process of heating within a confined space or spaces, open at or towards either extremity, and by means of dry steam contained within a jacket or coil (assisted if desired by a jet of live steam) a portion only of the ingredients contained within any closed vessel, thereby causing them to ascend, while the remaining portions left unheated, descend, thus establishing by ascending and descending currents an automatic, violent and continuous circulation, 2nd. The application of dry heat for the purpose of heating the portion of the ingredients contained within the annular space between the outer cylinder A, and inner shell C: 3rd. In combination with the cylinder A, and shell or shells C, the steam coil H, placed either within or without the shell C, and having connections I, and K, 4th. In combination with the cylinder A, shell C, and pipe L, the shield D, and aperture E, with reverser F: 5th. In combination with any closed vessel for the purposes mentioned, the vessel R, in its threefold use as condenser, injector and air or water heater as described.

No. 4101. GEORGE W. BROWN, Buffalo, N. Y., U. S., 26th November, 1874, for 5 years: "Improvements in Spring Bed Bottoms." (Perfectionnements des fonds de lits à ressorts.)

*Claim.*—The combination of the Slats C, C, having grooved double heads c, c', at each side of the ends of the slats, and the curved cross pieces D, D, spring f, f', and stay rods g, g', all constructed and arranged as described.

No. 4102. SAMUEL W. REESE and JOHN F. WRIGHT, Chicago, Ill., U. S., 26th November, 1874, for 5 years: "Improvements on Stencil Plates." (Perfectionnements des plaques à par-trommer.)

*Claim.*—The plates A, each having a stencilled letter or character and provided with the folds or locks a, a', as set forth.

No. 4103. GATES CURTIS, Ogdensburgh, N. Y., U. S., 26th November, 1874, for 5 years: "Water Wheel." (Roue hydraulique.)

*Claim.*—The bonnet gate-ring E, made with inclined rims E', which carry the chute pads F, with the outwardly-curved chutes F', and having openings b, arranged over corresponding apertures b', of the bonnet or cap D, for regulating the flow of the water as described.

No. 4104. RICHARD J. TOUKE, Montreal, Que., 26th November, 1874, for 5 years. "Improvements on Shirts." (Perfectionnements aux chemises.)

*Claim.*—The combination of the two sides of the front A, and B, with band made into parts C, and D, and with split E, extending below said band made in two parts as described. 2nd. The combination of the front made in two parts A, and B, with band made in two parts C, and D, split E, and back openings F, as set forth.

No. 4105. ROBERT ROSS, Vergennes, Vt., U. S., 26th November, 1874, for 15 years: "Machine for Finishing Horse Shoe Nails." (Machine à finir le clou à cheval.)

*Claim.*—1st. A longitudinally reciprocating feed-screw or equivalent device; 2nd. The combination of a moveable die and stationary punch; 3rd. The combination of a moveable die and stationary punch with a longitudinally reciprocating feed-screw or other intermittent feeding device, whereby the nails are held stationary during the action of the moveable die upon them; 4th. The combination of the feed screw A, the revolving die B, and the stationary punch C; 5th. The combination of the feed screw A, the reciprocating die F, and the stationary punch C; 6th. The combination of the reciprocating die F, the stationary punch C, and the clearing block K; 7th. The combination of the cam faced roller H, the friction roll I, the spring J, or their equivalents and the feed screw A; 8th. The milling cutter D, and the stationary nail-support G, in combination with the feed screw A; 9th. The small roller U, mounted in the periphery of the wheel E; 10th. The combination of the milling cutter D, the small roller U, and the feed screw A; 11th. The inclined table or frame Q; 12th. The combination of the inclined table Q, and the milling cutter D; 13th. The combination of the inclined table Q, and the small roller U; 14th. The combination of the small roller U, and the nail support F; 15th. The combination of the milling cutter D, the small roller U, and the inclined table Q.

No. 4106. JAMES LEITH, Ridgway, Pa., U. S., 26th November, 1874, for 5 years: "Automatic Car-Coupling." (Attelage de wagons automatique.)

*Claim.*—1st. The U-shaped draw-heads A, sliding hook-bars B, sliding bars C, spring D, guide bars E, all combined as described. 2nd. The combination of the levers H, bars M, heads N, with the sliding pins C, spring D, sliding hooks B, and draw-heads A. 3rd. The combination of the sliding hook bars B, with the link O, as set forth.

No. 4107. BENJAMIN A. WHITAKER, Wellington Square, Ont., 27th November, 1874, for 5 years: "Curtain Roller." (Rouleau de rideau.)

*Claim.*—1st. The roller G, in connection with the spiral spring E, the holder A, and pawl or lever B, for the purposes set forth; 2nd. The rod F, on which the spring E, works in the holder G, in connection with the arms H, all operating as set forth.

No. 4108. WILLIAM T. ROOT and WILLIAM G. WOOD, Ingersoll, Ont., 27th November, 1874, for 5 years: "Boiler for Steam Power and Heating Buildings." (Chaudière à vapeur pour les machines et le chauffage.)

*Claim.*—1st. The funnel-shaped magazine C, when arranged in combination with the hot air pipes A, and hot air spaces B, and E; 2nd. The fuel regulator F, constructed as described in combination with the magazine C; 3rd. The regulator I, constructed as described when used in combination with the fire pot D; 4th. The fire pot D, constructed as described; 5th. The grate M, when constructed in combination with the inclined planes N, and N'. 6th. The manner of fastening the jacket O, by the strips P, Q, and bolts R, as described.

No. 4109. WILLIAM H. FULTON, Foxcraft, Me., U. S., 27th November, 1874, for 5 years: "Machine for Raising or Extracting Stumps, Stones, &c." (Machine à lever ou extraire les souches, pierres, &c.)

*Claim.*—1st. The combination of the suspended rod b, and pawl C, jointed thereto with the yoke E, attached to said pawl lever F, and rack bar g, provided with teeth u, v. 2nd. The suspended pawl c, provided with an eye or like device for the reception of the fulcrum yoke E, so arranged that the action of the lever f, having its fulcrum in said yoke E, will operate to force the pawl into engagement with the teeth j, of the rack bar; 3rd. The rack bar g, provided

with an eye K, in combination with the suspending rod b, whereby said rod serves as a guide rod to said rack bar; 4th. The combination of the suspended rod b, link n, and yoke l, jointed thereto with the lever f, and rack bar g, provided with teeth u, all operating as set forth.

No. 4110. FREDERICK A. LOCKWOOD, Fall River, Mass., U. S., 27th November, 1874, for 5 years: "Leather Working Machine." (Machine à apprêter les cuirs.)

*Claim.*—1st. The combination with the table or bed for supporting the skin n, of a tool carrier or stock arranged and operated to move, to travel in any direction over and with respect to the table or bed, to cause the tool or tools carried by said stock to properly act upon the skin; 2nd. The combination with the work supporting table or bed and a tool carrier or stock capable of variable movements over said table and mechanism for imparting said movements to said stock, of a sliding head carrying said tool carrier and its operative mechanism and vertically adjustable with respect to the table; 3rd. The combination with the tool carrier and its operative mechanism of a swinging crane supporting said parts; 4th. The combination of a rotary work supporting bed or table and a tool carrier or stock arranged and operating to move in any direction over or with respect to said table; 5th. The epicycloidal wheels q, and r, for imparting reciprocating motions to the tool stock in a horizontal plane from the rotary motion of the shaft or rod; 6th. The brush t, mounted within or upon the tool stock or carrier, whereby it may be raised or lowered with respect to the tools; 7th. The combination of the knocking over or tripper arms b', and cams p, or the equivalents of the same, whereby, while the tool stock is in motion, the raising or lowering of the brush may be effected. 8th. A carriage susceptible of universal freedom of motion and supporting a tool stock, and a tool stock traversing such carriage in reciprocating rectilinear movements; 9th. A tool stock reciprocating in an arbitrary horizontal path upon a suitable carriage, and one or more tools or tool-holders under the arrangement and for operation as described, so that during the reciprocation of the stock the slope of the tools with respect to the stock may be varied, in order not only that the tool may be lowered upon the skin when moving in one direction, and raised therefrom when moving in the opposite direction, but if desired, elevated entirely above the skin and out of action during both traverses; 10th. The combination of a brush capable of being lowered into working position or raised therefrom and one or more reciprocating tools which are susceptible of acting upon a skin or traversing a path above such skin and free from contact; 11th. The combination of an open or slotted crane swinging in the arc of a circle and carriage capable of traversing such crane and constituting the suspensory of the tool supporting carriage or frame; 12th. The combination of the swinging crane K, carriage T, and shaft S in such manner that the carriage is in part supported by and slides upon the beam and is driven by the shaft; 13th. Mounting the carriage T, upon the shaft S, by means of the rollers k, l, m, and creating in the shaft a groove or rebate in which one roller travels, or the equivalents of such parts whereby such rollers and carriage are compelled to rotate with such shaft and such rollers constitute anti-friction bearings to reduce friction between the shaft and carriage; 14th. The combination of the crane K, shaft S, tubular carriage T, rollers k, l, m, gears V, and W, and vertical shaft X; 15th. The combination of the cross-head C, susceptible of vertical adjustment upon suitable supports and the crane K, pivoted to such cross-head, whereby the crane while capable of swinging over the skin in a plane parallel to the table, may be raised or lowered with respect thereto; 16th. The screw F, screwing within the beam D, and provided with the gear G, in combination with the rod or shaft I, and its gear H, whereby the vertical adjustment of the cross-head and crane is effected; 17th. In combination with the cross-head C, susceptible of vertical adjustment the crane K, the shaft L, acting as a pivot to the crane K, and in connection with its gear as a means of rotating the shaft S, the shaft S, gear V, and shaft X; 18th. The epicycloidal wheels q, and r, in combination with the rotary frame Y, and barrel or carriage v; 19th. The spring latch u, or its equivalent in combination with the bracket z, and frame Y; 20th. The stud n, upon the under side of the epicycloidal q, in combination with the tilting or oscillating beam c, or the same and its tubular sliders a, 21st. In combination with the barrel or carriage v, carrying the operative tool and an oscillating beam for effecting the vertical changes of such tools, the carriage traversing a horizontal rail or shaft upheld by a suitable frame and the oscillations of the beam being effected by the epicycloidal q, or its equivalent; 22nd. The employment of the bolts n, r, in connection with the studs u, of the sleeves a, as a means of elevating or depressing one or both the tool stocks and tools; 23rd. The combination of the tubular slider a, and tool stock a', b', under such an arrangement and so provided that an outward movement of the slider elevates the adjacent tool and throws it out of action and removes itself from the path of rotation of the wiper stud upon the wheel q; 24th. In combination with the barrel carriage t, and tool stock a, b', the brush g, susceptible of vertical adjustment; 25th. The latches k', or their equivalents in combination with the carriage v, and tilting beam c; 26th. The method of mounting and adjusting the brush t, as consisting of the cheeks u, sliding within or upon the carriage v, the wiper cams p, and trippers b', operating in connection with the bolts c, or their equivalents; 27th. In combination with the vertically adjustable cross-head C, the swinging crane K, the frame Y, and sliding carriage v, with its accessories travelling within or upon such frame and operated by the epicycloidal wheels q, and r, the whole being as stated; 28th. The employment and adaptation of the wheel q, whereby in connection with the ring gear r, it performs the functions of reciprocating the tool supporting carriage and of effecting the alternate elevation and depression of each end of oscillating beam c. 29th. In rails A, with thin stops l', whereby the latches k', are released from their hold upon the beam.

No. 4111. FRANK W. OFELDT, Newark, N. J., U. S., 30th November, 1874, for 15 years: "Gas Machine." (Machine à Gaz.)

*Claim.*—1st. An arrangement of pipes *a*, *U*, *V*, *d* with an oil tank or gas generator *C* and an aerometer *E*, in such a manner that a current of air carried by a current of steam through the generator, will (liberated from steam) enter the aerometer, and on its return thence to the generator, reheated by the returned current of steam, will cause the oil to vapourize and in the form of gas, pass directly to the service pipe, so that the aerometer, without ever receiving any gas, will cause and maintain the gas pressure and a gasometer is dispensed with; 2nd. The arrangement of the pipe *u*, *v*, passing through the oil in the generator into the condensing tank *C*, with the pipe *U*, for the purpose of heating the oil without getting it mixed with water from condensation, separating the steam and air by condensation and collecting the former condensed in the tank *C*, and returning the liberated air by the pipe *U* to the aerometer *E*; 3rd. The two separate vessels for separate compartments in the same vessel, *R* and *S*, one of which is provided with tubes *r*, passing through the other, for the purpose of heating a current of air passing through the former by a current of steam passing through the latter, in order to promote and maintain the formation of gas in a generator *C*; 4th. The use of a cork for a valve in a gas apparatus; 5th. The valve formed by the combination of the cork *C*, or other material, and the end *b* of the pipe *B* and operated by the buoyancy of the float *D*; 6th. The cup *C* in combination with the hollow stem or pipe *C*, provided with holes *C*, as shown, for the purpose of bringing the supply to the bottom of the oil in the generator *C*; 7th. The pipe *u* in combination with the boiler *T* (or with the tank *W*) and the condensing tank *C*, for returning the condensed steam to the boiler; 8th. The air pump *II* in combination with the pipes *V*, *d*, *d*, generator *C*, boiler *T*, and aerometer *E* for starting the machine; 9th. The water vessel or chamber *C* in combination with the pipes *u*, *v*, to prevent the back flow of air through the injector *F* and pipe *Q*; 10th. The adjustable stops *b* in combination with the rod *II*, working in the slot or hole *h* of the valve lever *a* and with the aerometer *E* to insure the tripping of the injector-valve at any desired point; 11th. The combination of the injector valve *P*, spring *E*, arm *F*, rods *G*, *H*, with an aerometer or similarly operating motor *E*, all constructed and operating as specified; 12th. The injector-valve formed of the check-valve *P*, in combination with the nozzles *O*; 13th. The generator *C*, in combination with the supply tank *A*, both arranged with relation to each other as specified; 14th. The automatic boiler *T*, and all its parts as described in combination with each and all parts of this or any similar apparatus as a motor and safe regulator of heat or motion.

No. 4112. JEAN B. CAMYRÉ, Montréal, Que., 1st December, 1874, for 5 years: "Steam Washing Machine." (Machine à laver à la vapeur.)

*Claim.*—1st. The combination of the steam conduits *B*, *B*, and *C*, *C*, having holes *a* and *b* with the flat false bottom *D*, when constructed and operated as set forth.

No. 4113. THOMAS WALLACE, Chicago, Ill., U. S., 1st December, 1874, for 5 years: "Emery Stone Pearling Machine." (Machine à perler à meule d'éméri.)

*Claim.*—1st. The combination of the emery wheels *H* and wooden wheels *J*, cemented together upon the shaft *E*; 2nd. The combination of the emery wheels *H* and the projecting pins *L*; 3rd. The combination of the perforated case *V*, tight case *W*, openings *R*, and fan *G*; 4th. The combination of the spiral brush *X*, perforated bottom *O*, the air passage *P* and fan *G* as specified.

No. 4114. CHARLES MEE and JOSEPH GEORGE, Kingston, Ont., 1st December, 1874, for 5 years: "Improvements on Melodeons and Organs." (Perfectionnements aux mélodéons et aux orgues.)

*Claim.*—1st. The two bellows *C*, *C*, arranged below, and the reservoir *B*, above the sounding board *A*, all operating within the case; 2nd. The oscillating pedal lifter *G*, in combination with the bellows *C*, *C*, for operating the same automatically; 3rd. The straps *J*, for operating the bellows *b*, the feet pedals *II*; 4th. The alternate acting feet pedals *II*, *II*, lined to the lyre near the heel and receiving the whole pressure of the operator's feet; 5th. The resonant chamber *D*, on the sound board *A*, and air passages *K* connecting with reservoir *B*, as set forth.

No. 4115. WILLIAM INGLIS, Bolton, Eng., and JAMES INGLIS, Montreal, Que., 1st December, 1874, for 15 years: "Grain Elevator Boats." (Bateaux éleveurs à grain.)

*Claim.*—1st. An elevator hull composed of two pontoons *A*, held together by frame work *B*, upon which the deck *D*, is placed; 2nd. The combination of pontoons *A*, frame work *B* and watertight compartments *K* as set forth.

No. 4116. NILS NILSON, Minneapolis, Ma., 1st December, 1874, for 5 years: "Steam Brake for Railway Cars." (Frein à vapeur pour les voitures de railroute.)

*Claim.*—1st. The combination of the steam supply *C*, cylinders *B* and *B*, and their operating devices as described, with the brake bars *S* and brakes *9*, constructed and arranged to operate in the manner described; 2nd. The joints *II* and *I*, Fig. *J*, constructed as described, to allow of lateral and longitudinal motion; 3rd. The coupling Fig. 5, composed of hooks *bu*, screw sleeve wheel *uu*, coupling pipe *uu*, in combination with the steam-pipes *u*, as described.

No. 4117. GEORGE OTT, Warwick, Ont., 1st December, 1874, (Extension of Patent No. 217), for 5 years: "Bee-Hive." (Ruche.)

*Claim.*—1st. Providing the moveable roof *Q* with an internal ventilating frame *R*; 2nd. The central stiles *I*, in combination with the moveable comb frames *II*; 3rd. In combination with the surplus honey box *L*, or with the bee-hive *b*, having an open top, in the frame *M*, for affixing the comb-frames and for holding a transparent or obscure cover for the hive and box; 4th. The arrangement of the notched bar *J*, within the hive to hold the comb frame fixedly; 5th. The arrangement and use of the sliding door *U*, for regulating the ventilation of the hive; 6th. The slide *G*, when applied to a double entrance for closing and regulating the aperture.

No. 4118. CHARLES P. HOLMES, N. Y., U. S., 2nd December, 1874, (Extension of Patent, No. 1704), for 5 years: "A Churn." (Une baratte.)

*Claim.*—1st. The dasher *B*, when constructed of three concave angular sides, and arranged spirally on the shaft *A*, and angularly; 2nd. The exterior application of the revolving fan arranged at the side of the cream chamber; 3rd. The employment of a shield *K*, applied to the interior mouth of the fan aperture; and 4th. Constructing the cream chamber formed of three octagonal sides and united by a tongue and groove connection with each other and with the vertical side walls, as set forth.

No. 4119. CHARLES P. HOLMES, New York, U. S., 3rd December, 1874, (Extension of Patent, No. 1704), for 5 years: "A Churn." (Une baratte.)

No. 4120. RICHARD DUDLEY, Erie, Pa., U. S., 3rd December, 1874, for 5 years: "Torsion Springs for Waggon, &c." (Ressorts à torsion pour les wagons, etc.)

*Claim.*—The torsion springs *A*, *A*, widened at the inner end *aa* and attached as shown to a bolster, bed piece, or seat *B*, the outer lever ends *b*, *b*, working in connection with a friction plate *c*, rocker *c*, or rollers, all as specified.

No. 4121. EDWIN CHESTERMAN, Philadelphia, Pa., U. S., 3rd December, 1874, for 5 years: "Apparatus for Registering and Classifying the Fares of Passengers." (Appareil à enregistrer et classer les billets de passagers.)

*Claim.*—The combination of two or more counting registers *C*, *D*, *E*, *H*, in one case with an alarm bell *S* and a single intermediate striking mechanism operated by the several push knobs *K*; 2nd. The arrangement of one or more continuously counting registers in a non-opening case permanently riveted or fastened so that access cannot be obtained to the interior mechanism, the said case having a transparent plate *W*; 3rd. The arrangement of one or more continuously counting registers in a non-opening case as described, the said case having a transparent plate *W*, and an extra locked lid *X*; 4th. The mode described of locking the registering wheels; 5th. The combination of a locking device upon the push knobs with two or more registers and an alarm bell as described.

No. 4122. JOSEPH B. McCUNE and RICHARD M. WANZER, Hamilton, Ont., 3rd December, 1874, for 5 years: "Apparatus for Sand Moulding for Metal Castings." (Appareil à mouler le sable pour couler les métaux.)

*Claim.*—1st. Attaching any pattern as at F, to slides H in the guides L, &c., and drawing the said pattern downwards from the sand P, in the flask N; 2nd. The combination of the plate D, and standard E, of one or more pieces, as the pattern requires for supporting the sand in the inner space of the pattern, with frame A.A: 3rd. The table B, provided with an opening in its centre to fit the pattern, in combination with the frame A, A, standard E, and slides as specified.

No. 4123. JOHN MODELAND, (Assignee of A. McNicol,) Ypsilanti, Mich., U. S., 3rd December, 1874, for 15 years: "Cement for rendering Leather Waterproof." (Ciment rendant le cuir imperméable.)

*Claim.*—A compound of India Rubber, gutta percha and bulata, dissolved in chloroform, as set forth.

No. 4124. CHARLES H. HASKINS, Milwaukee, and ZALMON G. SIMMONS, Kenosha, Wis., U. S., 3rd December, 1874, for 5 years: "Duplex Telegraph." (Télégraphe à double courant.)

*Claim.*—1st. The relay composed of two separate cores wound with helices in such manner that a current will pass in opposite directions around said cores when said current enters said helices from either of the free ends, one of said free ends being connected to line and the other to ground in combination with the permanent magnet armature and the Morse key connected to both helices between said helices as specified; 2nd. The combination of the helices A, A', the parallel cores provided with semicircular prolongations C, C', the polarized armatures B, shaft D, contact points e, e', and the wire M, attached to the connection m, and the key k, as specified; 3rd. The combination with the relay as specified of the condenser P, and the Morse key K, connected, arranged and operating as specified.

No. 4125. JAMES L. SMITH, Toronto, Ont., 3rd December, 1874, (Extension of Patent, No. 825), for 5 years: "Art of making Roads." (Art de faire les chemins.)

*Claim.*—The placing of Cedar, Tamarac or other sleepers transversely and laterally or bi-laterally inclined as a foundation for gravel, or gravel, sand, or lime or other similar substances in the construction of pathways and of roadways.

No. 4126. JAMES L. SMITH, Toronto, Ont., 3rd December, 1874, (Extension of Patent, No. 825), for 5 years: "Art of making Roads." (Art de faire les chemins.)

No. 4127. JAMES E. TREAT, Boston, Mass., U. S., 3rd December, 1874, for 5 years: "Buckle for Supporting Stocking, &c." (Boucle de bretelles pour les bas, etc.)

*Claim.*—Combination with the concave plate b, having a lip c in its lower end, the tongue plate d, e, hinged at f, and to the upper end of the plate b, the whole forming a buckle as set forth.

No. 4128. GEORGE RACKHAM, Charlottown, P. E. I., 3rd December, 1874, for 5 years: "Potato-Digger." (Extracteur à patates.)

*Claim.*—The fixed frame or screw L, applied to a machine for digging potatoes, having an ejector operating transversely to the draught as set forth.

No. 4129. SIMEON B. CASTLE, Syracuse, N. Y., U. S., 3rd December, 1874, for 5 years: "Elevator." (Élévateur.)

*Claim.*—1st. The frame A, suspended and supported by the axle of the driving pinion and provided with adjustable boxes n, n, cross-bar X, and guide rails b, b, constructed and operating as set forth; 2nd. The combination of the frame A, guide rails b, b, pulleys i, i, i, pinions t, and chains S, S, arranged as described; 3rd. The carriers consisting of the levers d, d, provided with friction rollers e, e, constructed as shown and attached to chains S, S, in the manner specified; 4th. The combination with the frame A, suspended on the driving axle as described, of the lever f, and rod r, operating as set forth; 5th. The adjustable pinion t in combination with an endless chain of an elevator as set forth; 6th. The arrangement for dumping and replacing the carriers in the manner described.

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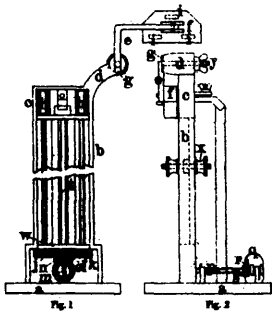
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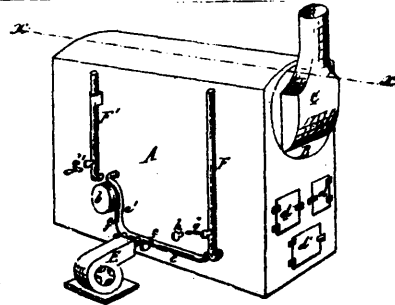
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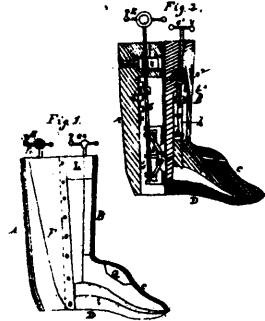
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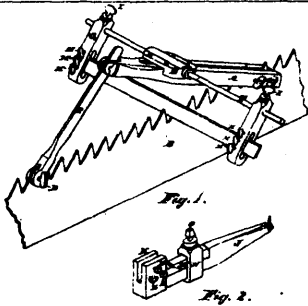
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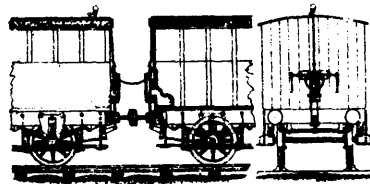
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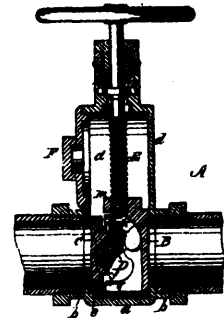
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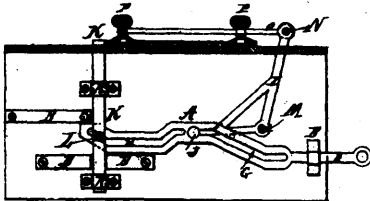
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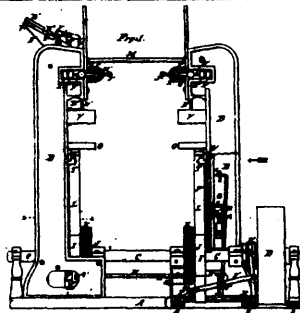
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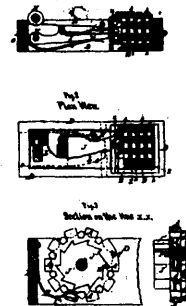
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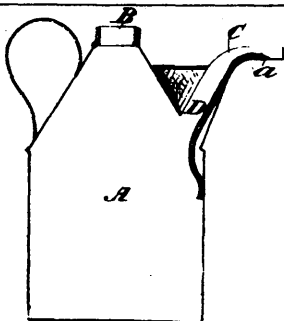
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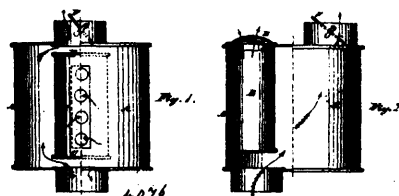
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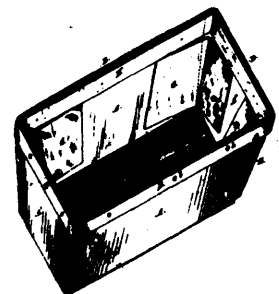
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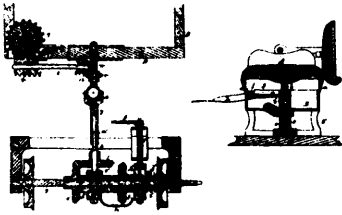
4076 Ducharme's Automatic Oil Can.



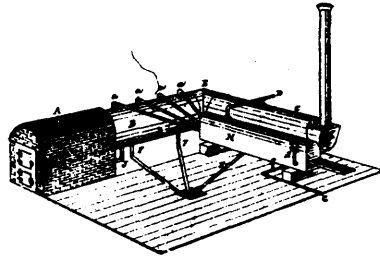
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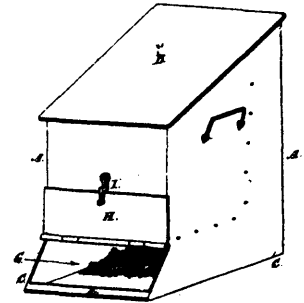
4077 Chisholm's Plant Box.



4078 Littlefield's Railway Carriage Way Meter.



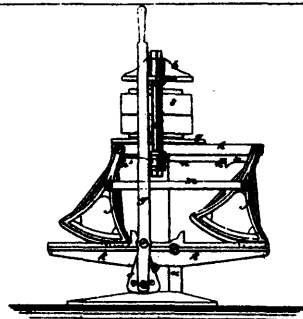
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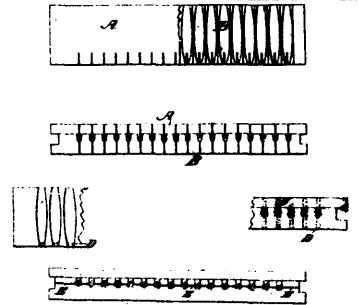
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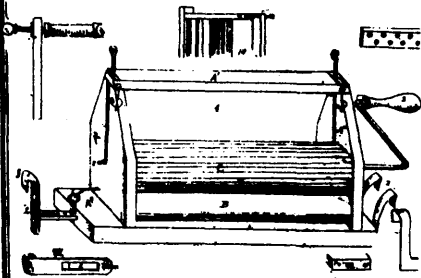
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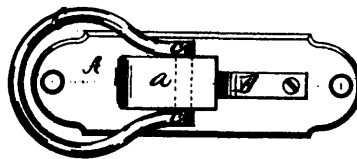
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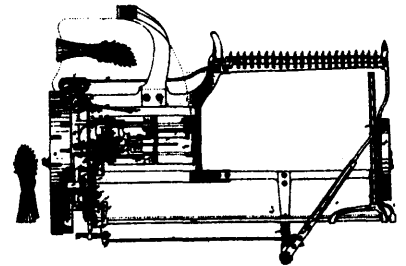
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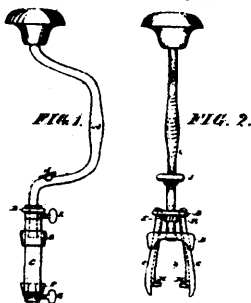
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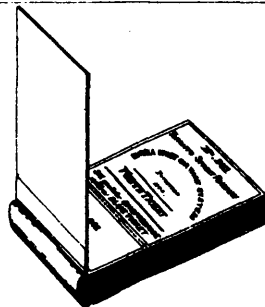
4085 Simons' Harness Hold-back.



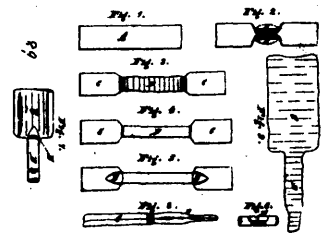
4086 Horton's Reaper and Binder.



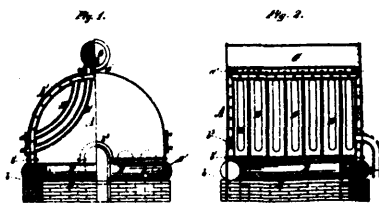
4087 Wright's Combined Carriage Wrench and Bit-brace.



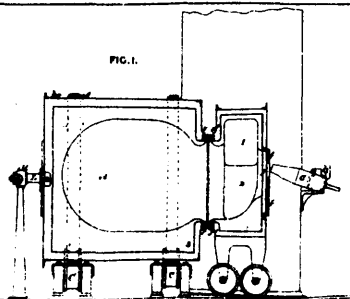
4088 Taylor's Ticket System.



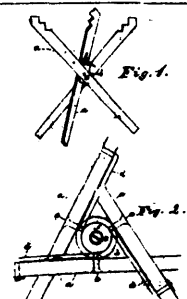
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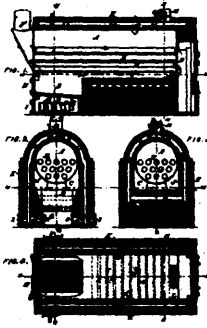
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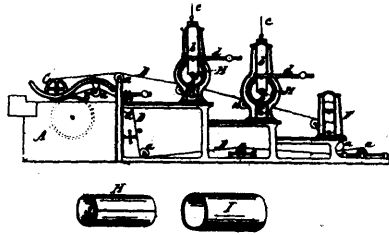
4091 Crampton's Improvements on the Manufacture of Iron and Steel, on the Construction and Lining of Revolving Furnaces and on Apparatus connected therewith.



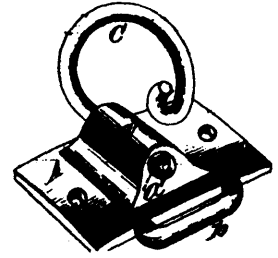
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4094 Keyes' Steam Boiler Furnace.



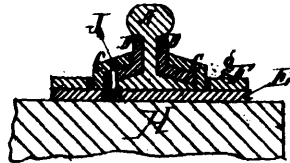
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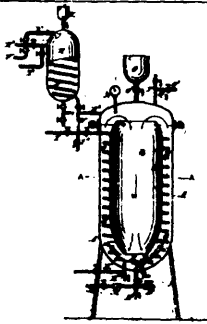
4097 Kent's Improvements on Reed Organs.



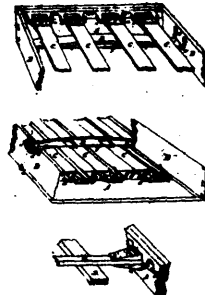
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4099 Patterson's Improvements on Screw-drivers.



4100 Freeland's Manufacture of Soap.



4101 Brown's Improvements in Spring Bed Bottoms.

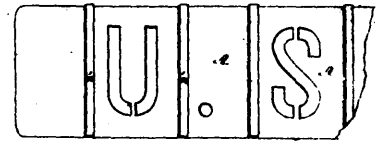


Fig. 1.

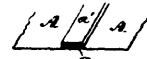
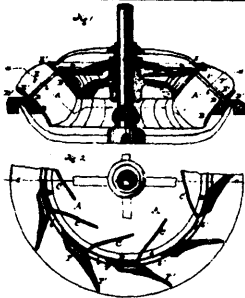
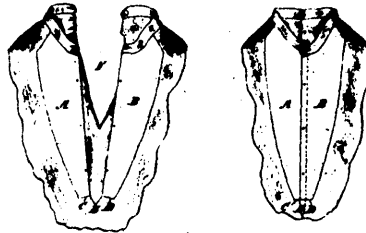


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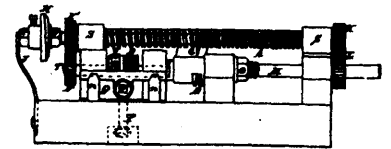
4102 Reese & Wright's Improvements on Stencil Plates.



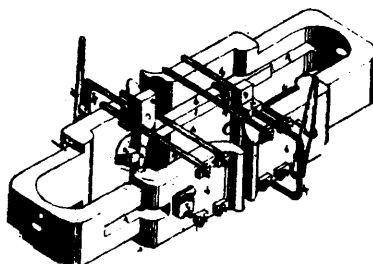
4103 Curtis' Water Wheel.



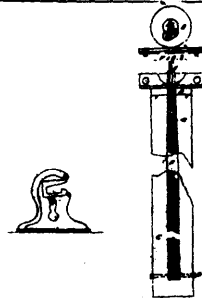
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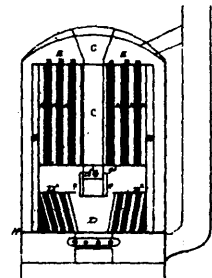
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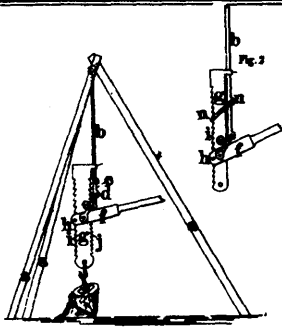
4106 Leith's Automatic Car-coupling.



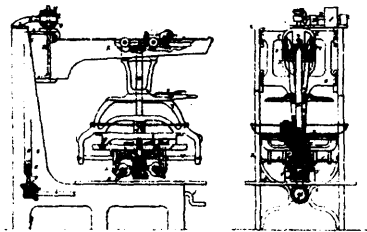
4107 Whitaker's Curtain Roller.



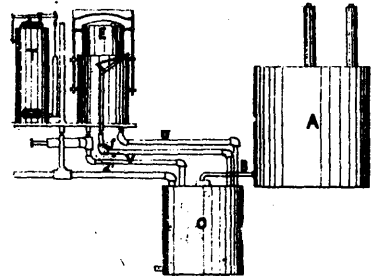
4108 Root & Wood's Boiler for Steam Power and Heating Buildings.



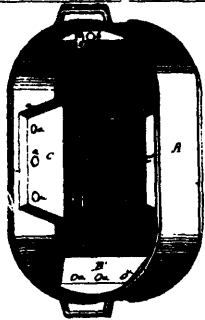
4109 Fulton's Machine for Raising or Extracting Stumps, Stones, &c.



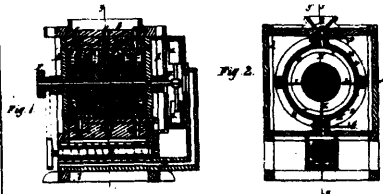
4110 Lockwood's Leather Working Machine.



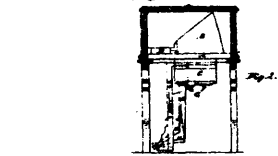
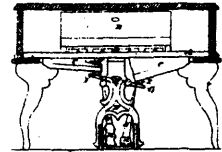
4111 Ofeldt's Gas Machine.



4112 Camyré's Steam Washing Machine.



4113 Wallace's Emery Stone PEARLING Machine.



4114 Mee & George's Improvements on Melodeons and Organs.



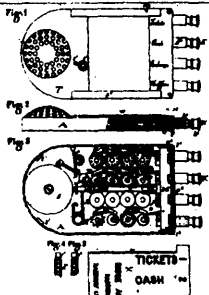
4115 Ingils' Grain Elevator Boats.



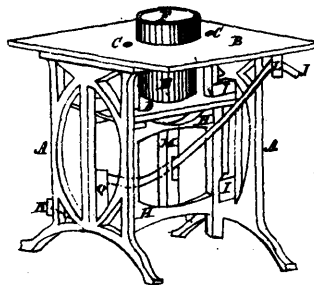
4116 Nilson's Steam Brake for Railway Cars.



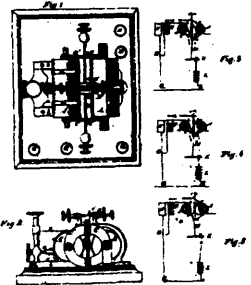
4120 Dudley's Torsion Springs for Waggon, &c.



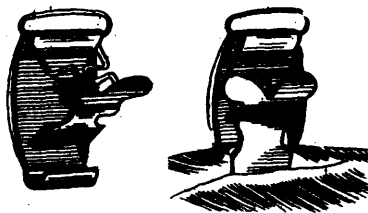
4121 Chestermann's Apparatus for Registering and Classifying the Fares of Passengers.



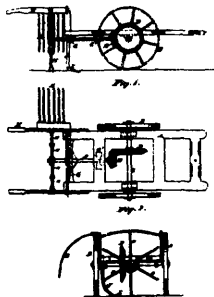
4122 M-Cune & Wanzer's Apparatus for Sand Moulding for Metal Castings.



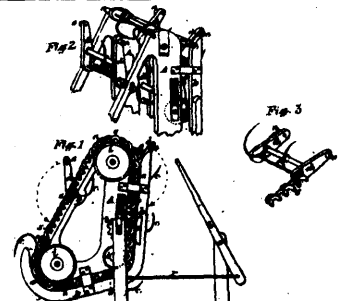
4124 Haskins & Simmons' Duplex Telegraph.



4127 Treat's Buckle for Supporting Stocking, &c.



4128 Backham's Potato-digger, &c.



4129 Castle's Elevator.