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 cut 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_2 a_3, spring B, and ring or holder C constructed on its transverse portion with the shoulder or tenon c_3, 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_5 and the two box halves a_4, a_5, one able to contain the other and both embracing the shaft box; 2nd. The lever a_8, having the volute forks a_{10}, a_{11},; 3rd. The combination of the pivoted ball lever a having the volute forks a_{10}, a_{11}, with the clutch half a_6; 4th. The combination of the rake arm c_{11}, pivoted on a universal joint, the arm c_{16} sliding in guides c_{17} and the rake c_{13}; 5th. The combination of the rake arm c_{11} pivoted on a universal joint, the forked pawl c_{19}, and the saddle c_{20}; 6th. The combination of a rake arm c_{11}, arm c_{16}, guides c_{17}, rakes c_{13}, arms c_{14}, and guide rod c_{15},; 7th. The combination of disc c_8, locking piece d_1, spring d_2, seat for locking piece in shaft box c_7, and clutch d; 8th. The combination of the lever d_3, disc c_8, locking piece d_1, spring d_2, seat for locking piece in shaft box c_7, and clutch d; 9th. The combination of clutch d, locking piece d_1, spring d_2, shaft box c_7, disc c_8, lever d_3, cam point d_4, and rod d_5 operating similar clutch mechanism inside of gear d_6; 10th. The combination of the upright d_{11}, arm d_{10}, fork arm d_{12}, pivoted to arm d_{10}, and having stops d_{16}, and cam d_{15}, 11th; The combination of cam disc c_8, rod d_7, upright d_{11}, arm d_{10}, fork arm d_{12}, and cam d_{15}; 12th. The rotary slotted disc g, having slot g_1, from one side to an open centre; 13th. The rotary slotted disc g, having slot g_1, from one side to an open centre and bearing the sunken gear shown; 14th. The pinion g_4, bearing the extra large tooth g_5, in combination with the slotted disc g, having slot g_1; 15th. The combination of the slotted disc g, pinion g_4, shaft g_9, pinion h, rack h_1, rack arm h_4, cam groove h_5, and disc d_{19}, and pin h_6 whereby lateral rotation is given to slotted disc; 16th. The combination of slotted disc g, disc-box g_2, shaft g_6, gear g_7, rack g_8, rack arm h_7, with pin upon its side, and cam groove h_8, in disc d_{19}, whereby longitudinal rotation is given to slotted disc and disc-box; 17th. The combination of slotted disc g, pinion g, shaft g_9, pinion h, rack h_1, rack g_8, gear g_7, sleeve shaft g_6, and disc-box g_2· 18th. The combination of the grasper arm e_7, bearing pinion e_{10}, rack toothed pitman e_8, arm e_7, bearing clutch half e_3 on its hub, clutch half e_2 and spring e_4; 19th. The combination of the grasper arm bearing pinion e_{10}, rack toothed pitman e_8, arm e_7, bearing clutch-half e_3, on its hub e_6, clutch half e_2, box e_{14}, projection e_{13}, pawl e_{11}, and ratch e_{12}; 20th. The pivoted needle arm f, bearing the hollow angular needle f_1; 21st. The combination of the pivoted needle arm f, connecting rod f_5, lever f_6; bearing pin on its side, and cam grooves f_7; 22nd. The combination of the ear h_9, with the disc-box; 23rd. The combination of the twine stretcher i, pinion i_1, rack lever i_2, and cam i_3; 24th. The forked twine retainer m, constructed and operating as described; 25th. The combination of the forked twine retainer m, pinion m_1, rack lever m_2, cam i_3, stationary knife m_3, and moving knife m_4; 26th. The combination of the slotted disc and the twine hold upon its face composed of the morticed body n, latch n_1, and spring n_2; 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_1, 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_1, 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_1, m_2; 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_3, said arches being of less diametrical dimensions than the pipe X_2, so as to produce circulation; 8th. The combination of the sections X, formed of a continuous curved pipe, made with the inner arches X_3, 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, hammered, 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