

No. 5318. GEORGE M. FULLER, Holyoke, Mass., U. S., 30th October, 1875, for 5 years: "Machine for making Water, Gas and Sewer Pipes." (Machine à faire des tuyaux à eau, à gaz et d'égoûts.)

*Claim.*—The combination of the roller B, arranged in fixed bearings the roller C, having movable bearings h, the pivoted weighted levers f, suspended from the pulleys b, to move said bearings, the roller D, having bearings in the weighted levers e, suspended from the said pulleys, the pulleys b, and the winding shaft I, and cord attached thereto.

No. 5319. ROBERT GILL, Antwerp, N. Y., U. S., 30th October, 1875, for 5 years: "Fence Post." (Pieu de clôture.)

*Claim.*—A fence post formed by the combination of the inclined braces A, A, crossing near their top, the brace C, the cross braces D, D, and sill B.

No. 5320. CHARLES A. CHAMBERLIN, Camden, N. J., U. S., 30th October, 1875, for 5 years: "Improvements on Chain-cables." (Perfectionnements aux chaines-câbles.)

*Claim.*—1st. A chain cable composed of links having the broad inner faces C, C; 2nd. A chain cable composed of links with increased depth at the points of junction of the sides and bends and flattened at those points so that the depth will be greater than the thickness as at a, a; 3rd. A flexible chain cable composed of links with flattened bends of increased depth in the line of strain; 4th. A chain cable composed of links constructed with increased depth at the points of junction of the sides and bends as at a, a, and flattened at said points and increased in depth in the bends in the line of strain as at y, y, said bends being likewise flattened; 5th. A chain cable, the links of which have side bars with broad inner faces c, and of increased depth at the points of junction of the sides and bends as at a, a, and flattened at said points; 6th. A chain cable the links of which have side bars with broad inner faces c, and flattened bends of increased depth in the line of strain as at y, y; 7th. A chain cable composed wholly or in part of links having broad inner faces c, increased in depth at or about the points of junction of the sides and bends as at a, a, and increased in depth at the bends as at y, y; 8th. A chain link having a perforated stud or brace; 9th. A chain link having a stud or brace with broad bases extending beyond the usual points of fracture of the sides of the link; 10th. A chain link having a broad based perforated stud, in combination with flattened bends, containing a greater area in cross section than the sides.

No. 5321. JAMES SMALE, Exeter, Ont., 2nd November, 1875, for 5 years: "Seamless Shoe." (Soulier sans couture.)

*Claim.*—A seamless-shoe having the vamps A, and quarters B, and blocked and crimped to form said shoe.

No. 5322. ROBERT SUTHERLAND, Shelburne, Ont., 2nd November, 1875, for 5 years: "Churning Machine." (Machine à baratter.)

*Claim.*—1st. The combination of the pulleys J, J, belt K, and connecting-pin L; 2nd. The combination of the pulleys J, J, the belt K, connecting-pin L, pitman G, lever F, and coupling D, with dasher C, and churn B.

No. 5323. EDWARD E. HARGREAVES, Sarnia, Ont., 2nd November, 1875, for 5 years: "Improvements on Exhaust Fans." (Perfectionnements des aspirateurs.)

*Claim.*—The combination and arrangement of valves C, and D, and cord E, openings H, and J, with the exhaust fan B, and pipe G.

No. 5324. JOHN W. LEFFERTS, Baltimore, Md., U. S., 2nd November, 1875, for 5 years: "Shoe-sole Edge Trimmer." (Machine à parachever la tranche des semelles de chaussures.)

*Claim.*—The adjustable block B, and knife d, in combination with the slotted plate b, and thumb screw e.

No. 5325. CHARLES E. HILL, New York, U. S., 2nd November, 1875, for 5 years: "Improvements on Structures for Piers, Wharves, &c." (Perfectionnements dans la construction des piliers, quais, &c.)

*Claim.*—1st. A structure consisting of a series of contiguous adjacent columns each bound to a common foundation by a metal bolt b; 2nd. The combination of a series of columns each bound to the foundation by a bolt b, with a spider D, through which the said bolts pass and by which the columns are bound together; 3rd. The combination of the recessed blocks a, a, bolts b, and ring dowels c, enclosed in the recesses of the blocks; 4th. A column or other analogous permanent structure consisting of stone or baked ware strengthened and rendered self-contained by means of a central bolt which serves the two fold purpose of clamping the column, independently of the foundation, and of anchoring the column of the latter.

No. 5326. DAVID M. RICHARDSON, Detroit, Mich., U. S., 2nd November, 1875, for 5 years: "Wheat Polisher and Separator." (Emoteur-séparateur à blé.)

*Claim.*—1st. The spiders C, arranged upon the shaft B, in combination with the perforated casing D; 2nd. The combination of an exhaust fan with the shaft B, spiders C, and perforated casing D, and an enclosed supporting frame; 3rd. The spider C, mounted on the shaft B, for discharging the grain at an elevated outlet in the casing D; 4th. The combination with the casing and fan of the air box I, provided with the diaphragm I, and valve e.

No. 5327. HENRY FOWLER, Detroit, Mich., U. S., 2nd November, 1875, for 5 years: "Machine for Cutting Hoops." (Machine à couper les cercles.)

*Claim.*—1st. A cradle or other device for holding a hoop bolt and adapted to be oscillated over a knife or knives whereby a hoop will be cut from the lower edge of said bolt at each vibration thereof; 2nd. The combination of the sliding cradle, the oscillating bolt holder hung therein and the loose adjustable sides of the said bolt holder which is reciprocated over the stationary knives; 3rd. The set screws h, k, kr, in the sides of the cradle; 4th. The knives n, n.

No. 5328. WILLIAM H. SEYMOUR, Johnstown, N. Y., U. S., 2nd November, 1875, for 5 years: "Scaffold-clamp." (Chevalet d'échafaud.)

*Claim.*—The bottom plate C, having back of the jaw, the hole h, of the form described with the seats or sockets e, e, therein, and the lever a, having back of the jaw-shoulders s, s, on its sides, and the spur r, on top in combination with the brace b, and key k.

No. 5329. GEORGE B. THURBER, Upton Station, Que., 2nd November, 1875, for 5 years: "Oscillating Water and Air Pump." (Pompe hydraulique et atmosphérique oscillante.)

*Claim.*—1st. A stationary valve D, with waste boxes and discharge chamber E, and suction pipe S, having their openings in the concave face of the valve by means of which water and air are supplied to and discharged from the cylinder at the proper time by its oscillation; 2nd. A cylinder with a convex face in the form of a segment of a circle having its centre in common with supporting trunnions passages a, and b, so arranged that they will receive and exhaust water and air at the proper time by the oscillation of the cylinder.

No. 5330. WILLIAM D. S. MONCRIEFF, Glasgow, Scot., 2nd November, 1875, for 5 years: "Improvements on Locomotive Carriages for Tramways, &c." (Perfectionnements aux voitures locomotives de chemins à ornières, &c.)

*Claim.*—1st. The novel combination of the six cylinders 20, forming a receiver for compressed air with the engine details 21 to 31, and the omnibus passenger accommodation; 2nd. The novel combination or arrangement wherein the engine details 21 to 31, are fitted within a distinct frame, which can be detached from the carriage frame; 3rd. The novel combination of the adjustable cut-off valves 34, and their rods 7, with the adjusting mechanism 8 to 17, acting in accordance with the change of pressure in the receiver.

No. 5331. WILLIAM H. MILLIKEN, Sacramento, Cal., U. S., 2nd November, 1875, for 10 years: "Traction Engine." (Machine de traction.)

*Claim.*—1st. The wheels A, in combination with independent axles B, yokes D, pivots and body; 2nd. The independent axles in combination with jointed sections of the main-axle middle sections of the same body provided with fixed bearings for the same, and the driving wheel carried thereby; 3rd. The combination of the wheels independent axles horizontally oscillating-yokes D, and rock shaft N; 4th. The combination of equalizing bars Q, and springs S, with the body and the horizontally oscillating independent wheels; 5th. The combination of pivoted yokes D, with the body, each having vertical movements relatively to the other.

No. 5332. JAMES ELLIOTT, Kittering, Eng., 2nd November, 1875, for 5 years: "Sewing Machine Needle." (Aiguille de machine à coudre.)

*Claim.*—Making sewing machine needles with their points tapered off to one side of the needle, instead of to the centre or longitudinal axis thereof.

No. 5333. WATSON P. WIDDIFIELD, Siloam, Ont., 2nd November, 1875, for 5 years: "Car Brake." (Frein de wagon.)

*Claim.*—1st. The shaft G, supported on the swinging links G, G, and provided with the fixed friction pulley D, in combination with the friction