

posed of a toothed ring and a centre body disc, attached as described, in which the disc is made thick at the center as the ring, and diminishes in thickness therefrom to the ring.

No. 8698. Improvements on Car-Couplers.
(*Perfectionnements aux attelages de wagons.*)

James F. McCoy and Alphonso Tyler, Ayer's Flat, Que., 29th April, 1878, for 5 years.

Claim.—1st The inclined plane O, provided with a friction-roller N, and having handles P; 2nd. The inclined plane O, provided with sliding base R, and projection X3, having notched-groove bar on its underside; 3rd. In combination with the car coupler, the automatic uncoupling bar E, having shoulder X2 and spring S, 4th The coupling block F, having friction roller N, uncoupling bar J and uncoupling rod V.

No. 8699. Improvements on Reservoirs.
(*Perfectionnements aux réservoirs.*)

Godfrey Moreau, Victoriaville, Que., 30th April, 1878, for 5 years.

Claim.—The reservoir or tank A, having a filtering apparatus C, at one or both ends, and furnished with feed pipe E and waste pipe F, in combination with the eaves trough B, having conducting pipes D.

No. 8700. Improvements in Harness Bearers.
(*Perfectionnements dans les barres des harnais.*)

Joseph N. Collin and George W. Bond, Biddeford, Me., U. S., 30th April, 1878, for 5 years.

Claim.—1st. A bearer for harness formed of the plate A and loop or keep B, cast in one piece, and having a buckle C and fastener D, cast upon the ends of the said plate A, 2nd. The fastener D, of the harness-bearers A B C D, made with a shoulder or off-set, recessed to receive the end of the street-leather, and with a slot to receive a piece of leather for the stitches to pass through in sewing the said fastener in place.

No. 8701. Process of, and Apparatus for Making Bread.
(*Procédé et appareil pour faire le pain.*)

James Wylie, Bowmanville, Ont., 30th April, 1878, for 5 years.

Claim.—Baking the dough in close cases, or pans of a cylindrical, rectangular or any other desired section, provided with detachable end caps.

No. 8702. Improvements on Drying Kilns.
(*Perfectionnements aux fourneaux de dessiccation.*)

Ernest T. Genert, New York, U. S., 30th April, 1878, for 5 years.

Claim.—1st. A furnace in a drying kiln, covered with heat conducting plates D, halved to each other at their adjacent edges, to admit of their free expansion and contraction, 2nd. The combination of the furnace C, the heating plates D and the air heating pipe H, with the kiln A, and the grate B, 3rd The combination of the angular plates J with the furnace C, the heating plates D, the air heating pipe H, the kiln A and the grate B.

No. 8703. Method of Preserving Cured Fish and Potatoes together.
(*Méthode de conservation du poisson mariné et des patates mélangées.*)

Shebnah Rich, Boston, Mass., U. S., 30th April, 1878, for 10 years.

Claim.—1st. Washing the fish in tepid water and cleaning it of superfluous salt and other impurities, then reducing it to pulp, then mixing it with cooked hashed potatoes and raw chopped onions, tallow, condiments and saltpetre in the proportions specified, and then, while warm, sealing the compound hermetically in cans and boiling as described.

No. 8704. Improvements on Pumps.
(*Perfectionnements aux pompes.*)

Frederick Watkins and Charles Watkins, Woodstock, Ont., 30th April, 1878, for 5 years.

Claim.—1st The toggle jointed bars J K, in combination with lever H, pump rod E, and standard I, 2nd. The combination of the lever H, toggle bars J K, pump rod E and standard I; 3rd. The plunger M, extending above and below the discharge spout G, on the pump rod E, and operating by displacement of the water to cause it to rise and flow at the descent of the pump rod.

No. 8705. Improvements on Grain Raking and Grain Binding Machinery.
(*Perfectionnements aux machines à râtelier et à lier le grain.*)

Moses A. Keller, Fremont, Ohio, U. S., 30th April, 1878, for 5 years.

Claim.—1st. An intermittently revolving gatherer for elevating the grain from the ground; 2nd. The intermittently revolving gatherer B B having two or more rows of gathering teeth, 3rd. The intermittently revolving gatherer having its gathering teeth pivoted, 4th. The combination with an intermittently revolving gatherer, the cambeads F, 5th. The combination with an intermittently revolving gatherer, the automatic stop G3 or its equivalent, 6th The combination with an intermittently revolving gatherer, the shifter N4, or its equivalent thereof, 7th. The shifter N6, 8th. The combination with an intermittently revolving gatherer, the disc wheel P3, or its equivalent; 9th. The arrangement of the cog gears M and M2, in combination with an intermittently revolving gatherer, 10th. The combination with an intermittently revolving gatherer, the knot tying mechanism, 11th. The stationary binding mechanism, in combination with an intermittently revolving gatherer, 12th. The binding mechanism secured to the axis of the revolving gatherer; 13th. The tubular axis or shafts D2, in combination with an intermittently revolving gatherer; 14th. The fenders R, or their equivalent; 15th. The supporting fingers K K K, or their equivalent; 16th. The combination with an elevating device, the supporting fingers K K K, 17th. The combination with a vibrating binding or cord carrying arm A, the supporting fingers K K K, 18th. In an automatic grain binding machine, the

oscillating segment and cam P; 19th. In an automatic grain binding machine, the slotted connecting rod E; 20th. The binding mechanism, secured to the axis of the elevating device and a secondary shaft B h, or its equivalent, for transmitting power to the binding mechanism, 21st. In an automatic knot tying mechanism for automatically binding grain, the combination of the looper A y, intermittently stationary revolving recessed hooked-head A d, reciprocating grippers A b, 22nd. In an automatic knot tying mechanism for binding grain, the reciprocating grippers; 23rd. In an automatic knot tying mechanism, the combination with the reciprocating gripper, the angular cam A k and roller A e to reciprocate the grippers, 24th. The construction of the grippers A b; 25th. The automatic switches A u and A v, 26th The reciprocating cord cutter and holder A f, 27th The yielding cord holder B d; 28th. The rack bar A m, constructed to operate the cog wheel A l, 29th The slot A w of binding shuttle for admitting the end of the cord carrying arm.

No. 8706. Improvements on Churns.
(*Perfectionnements aux barattes.*)

Francis J. T. Dixon, St. Alphonse, Que., 30th April, 1878, for 5 years.

Claim.—1st. A machine driven by the motive power of a horse or other animal, travelling in a circular track where a friction roller or wheel is adapted to work on said track, and convey the motion thus generated by suitable mechanism to a central upright shaft; 2nd. The combination of a friction roller or wheel e, working on a circular track B B, with the arm F propelled by a horse or other animal, the shaft E, crank or wrist plate a, pitman or connecting rod b, the sliding rod D passing through the centre of the main upright axle C, with joint g h and working beam G.

No. 8707. Improvements on Furnaces.
(*Perfectionnements aux calorifères.*)

William E. Henderson, Winona, Minn., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The improved hot air furnace composed of a stove, a central vertical and hollow-head, with interior horizontal diaphragm, two groups or sets of tubes or flues connecting said centre head with front and rear heads, and arranged in alignment; 2nd The centre head G G1, cast in two parts with the horizontal diaphragm m m1, cast one-half with each part of the centre head; 3rd. The centre head G G1, cast in two parts with the horizontal diaphragm m m1, cast one-half with each part of the centre head in combination with the series of horizontal pipes J J1, and the front and rear heads H and I, 4th. The centre head, cast in two parts G G1, with shoulders 1, around their edges, and the interior horizontal diaphragm cast in two parts m m1, one-half with each part of the head, so that the parts will overlap each other and be fastened together by bolts h, passing through projecting lugs f, 5th. The combination of the end heads H I, having collars n n, cast therewith the central head G G1, having collars n n cast on each section thereof, and having interior partitions m m1, and shoulders 1, cast therewith, the horizontal flue tubes J J1, and the double set of connecting rods p p, 6th. The check draft L, provided with the operating rod l, in combination with the central head having a central diaphragm, the end heads H I, tubes J J1, and exit flue E, 7th. The detachable evaporator P, provided with the pivoted pans R, connected and operated by the rod w, suspended under the pipes J1 and attached to the end of the furnace.

No. 8708. Apparatus for Casting Metal.

(*Appareil à couler les métaux.*)

Charles Dusenbury and Benjamin H. Dusenbury, New York, U. S., 30th April, 1878, for 5 years.

Claim.—1st. The tank B having partition l and spout a, and combined with the hollow pump plunger C, having the valve i and the aperture above said valve; 2nd. The shaft e, made with the projecting ribs g g, and plates h h, one of the plates h having the hole d, all arranged for combination with the solid journal box f and constituting a mould for lining said journal box.

No. 8709. Improvements on Riveting Machines.
(*Perfectionnements aux machines à river.*)

John F. Allen, Brooklyn, N. Y., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The novel combination of the levers A and B, die D, weight W, riveting machine M and cylinder C, with piston and rod, or wheel S, with screws T T; 2nd. The levers A and B turning on a fulcrum F, having on one arm a riveting machine M, and in the other arm a die D and suitable weight W, attached directly opposite each other, in combination with a cylinder C, provided with suitable valves, piston and piston-rod, said cylinder being connected to one arm, and the piston-rod to the other arm opposite; 3rd. In combination with two levers A and B, the screws T T, with wheel S, 4th. A holding-on bar composed of two levers A and B, turning on a fulcrum, in combination with a pressure cylinder, or other suitable mechanical contrivance to open or close the ends of said levers.

No. 8710. Improvements in Pumps.
(*Perfectionnements dans les pompes.*)

John A. McMartin, Montreal, Que., 30th April, 1878, for 5 years.

Claim.—1st. The head A, and enlarged at base and with channel A1 formed thereon, 2nd. The plate I interposed between the pump chamber above and piston and side chambers below and perforated as shown, 3rd. The plate K forming the bottom of the piston and side chambers, 4th. In combination with the piston-rod of a pump, the links Q pivoted to it at their upper ends, and at their lower pivoted (in such a manner as never to be at right angles thereto) to the forked shorter arm of the working lever, also pivoted to an extension of the frame, 5th. The pump lever O pivoted as shown, having its shorter arms extended beyond the point of junction with the links connecting the forks with the piston, and carrying at each end an eye.

No. 8711. Improvements on Hay Presses.
(*Perfectionnements aux presses à foin.*)

Royal H. McQuoid, Frankford, Ont., 30th April, 1878, for 5 years

Claim.—1st. The combination with the frame A, of the follower B, levers C and D, 2nd. The combination of the drum wheel H, winding shaft G, rollers F and ropes I J, for operating the toggle levers, 3rd. The brake K