

shell fitted to said neck, embodying oblique channels in which said studs are entered, and means for locking said conical shell in desired positions of adjustment, substantially as set forth. 3rd. The combination, in a machine for cutting meat, of a screw, a main casting, embodying a hopper, a hopper outlet, and a stud-provided neck, a conical shell, embodying devices which co-operate with the screw to cut up meat fed thereinto, and also embodying oblique channels which are adapted to the studs of the neck of the casting, and an adjustable latch adapted to bind said conical shell to the main casting, substantially as set forth. 4th. The combination, in a machine for cutting up meat, of a screw, a main casting embodying a hopper, a hopper outlet and a stud provided neck, a conical shell embodying devices which co-operate with the screw to cut up meat fed thereinto, which shell is provided with a side lug, and also embodies oblique channels which are adapted to the studs of the neck of the casting, and a latch adapted to hook over the shell lug, and provided with a slot through which a locking screw passes to secure said latch to the main casting, substantially as set forth. 5th. The combination, in a machine for cutting up meat, of a main casting embodying a hopper, and a hopper outlet, a conical shell embodying devices which co-operate with the screw to cut up meat fed thereinto, and which shell is adjustably secured to the casting, and a screw extending across the bottom of the hopper and through the hopper outlet and conical shell, and which screw both feeds the meat forward from the hopper to the conical shell, and at the same time cuts it up, substantially as described. 6th. The combination, in a machine for cutting up meat, of a main casting embodying a hopper, a hopper outlet and a rib extending along its interior, a conical shell embodying devices which co-operate with the screw to cut up meat fed thereinto, and which shell is adjustably secured to the casting, and a screw extending across the bottom of the hopper and through the hopper outlet and conical shell, and which screw, as to the part which lies within the conical shell is conical to conform to said shell, and as to the part within the hopper is of such size that its periphery is in contact with the above mentioned rib, substantially as set forth. 7th. The combination, in a machine for cutting up meat, of a main casting embodying a hopper, and a hopper outlet having marginal notches, a conical shell embodying devices which co-operate with the screw to cut up meat fed thereinto, and which shell is adjustably secured to the casting, and a screw extending across the bottom of the hopper, and through the hopper outlet and conical shell, which screw, as to the part which lies within the conical shell is conical to conform to said shell, and as to the part which lies within the hopper outlet is of such size that its periphery is in contact with the edge of said outlet, substantially as set forth. 8th. In a meat cutter, in combination, the casing having the hopper with bottom rib and outlet, and having studded neck and adjustable latch, the conical shell having ribs, perforations, lugs and oblique channels, and the screw, conical within the conical shell and within the hopper, making contact with the bottom rib and edge of outlet, substantially as set forth.

No. 35,112. Milk Aerator. (*Aérateur à lait*.)

Goodson Jeremiah Alford, Township of Bastard, Leeds, Ontario, Canada, 2nd October, 1890; 5 years.

Claim.—1st. In a milk aerator, the combination, with a perforated pail, of the weight E attached to one side of the top rim of the said pail, substantially as and for the purpose set forth. 2nd. In a milk aerator, a perforated pail, having a detachable bail to which a pulley is permanently secured, substantially as and for the purpose set forth. 3rd. In a milk aerator, the combination of the pail C, having a concave bottom D, perforations d, with the weight E, rim F, lugs f, engaged by the detachable spring bail G, having pulley H, the cord J and pulley K, substantially as and for the purpose set forth.

No. 35,113. Rotary Engine. (*Machine rotative*.)

Robert Charles Fisher, Toronto (assignee of Walter Herbert Avis, Dovercourt), Ontario, Canada, 2nd October, 1890; 5 years.

Claim.—1st. In a rotary engine, the combination of an outer cylinder, provided with a steam inlet opening, and an exhaust opening, situated at about one-quarter of the circumferential distance from each other, cylinders attached to a bed piece formed on a central shaft, each cylinder being provided with piston heads, and piston adapted to work in a sleeve, and a helical spring attached to piston head and base of cylinder, the cylinders being built in or forming part of an inner casing, with undulations or concavities formed on its surface, the convex portions of said inner casing being designed to fit close against the inner surface of the outer cylinder, and having plungers therein to admit steam to the cylinder piston heads, a is admitted thereto by the sliding valve attached to the bent rod operated by a cam on the central shaft, which sliding valve is adapted curved bottom of which impinges on the hollow inlet valve or plunger, the inner casing, as it is caused to rotate, the steam, and rotating inner plunger, substantially as described and specified. 2nd. In a rotary engine, the combination of valve chest R, steam inlet S, sliding valve h, head T, and curved rod v passing through outer casing G, valve G, with opening b, adapted to reciprocate in casing P, inner casing F, opening J and cylinders C, D and E, provided with pistons with inlet and exhaust ports, and drain outlet O, substantially as described and specified. 3rd. In a rotary engine, the combination of an inner casing F, having an undulating surface forming concavities and convexities, as shown, openings J, outer casing G and cylinders C, D, E, provided with piston heads K, pistons L, helical springs N, and sleeve M, and means for admitting steam to the piston heads and exhausting it therefrom through ports in the outer casing G,

the bed B, central shaft A and cam W, which operates the curved rod U, connected with the valve h, which opens and closes the steam opening g in cylinder P, substantially as described and for the purpose specified. 4th. In a rotary engine, the combination of cylinder P and outer cylinder G, provided with inlet and exhaust ports, the hollow inlet valve or plunger Q, opening g, valve h, adapted to reciprocate through motion derived from central shaft A, valve chest R, and steam inlet S, substantially as described and specified.

No. 35,114. Water Heater.

(*Calorifère à eau*.)

The Consolidated Car Heating Co., Wheeling, West Virginia, U.S.A. (assignee of James Finney McElroy, Albany, N.Y., U.S.A.), 2nd October, 1890; 5 years.

Claim.—1st. In a water heater, consisting of a drum, provided with inlet and exit openings, substantially in line, a steam supply pipe connecting with a nozzle, having perforations on one side only, said nozzle being arranged in the line of water circulation, substantially as described. 2nd. In a water heater, consisting of a drum provided with inlet and exit openings substantially in line, a steam supply pipe entering said drum, connecting with a steam nozzle, provided with perforations on one side only, and arranged in the line of water circulation of a porous medium around said nozzle and the screens k and l, substantially as described. 3rd. In a water heater, the combination, with the casing, of semi-globular screens enclosing a porous medium, an open-figured steam nozzle, perforated on one side only, and located in the line of circulation between said screen, substantially as described. 4th. In a water heater, the combination, with the casing, semi-globular screens arranged with their convex faces towards each other, whereby they approach most nearly in the line of water circulation of the steam supply pipe and nozzle perforated on one side only between the screens and surrounded by a porous medium, the parts being arranged to operate substantially as described. 5th. In a water heater, the combination of the casing with the semi-globular screens arranged with their convex faces towards each other, whereby they approach most nearly in the line of water circulation of the steam supply pipe and nozzle perforated on one side only, arranged between said screen, substantially as described.

No. 35,115. Water Heater.

(*Calorifère à eau*.)

The Consolidated Car Heating Co., Wheeling, West Virginia, U.S.A. (assignee of James Finney McEvoy, Albany, N.Y., U.S.A.), 2nd October, 1890; 5 years.

Claim.—1st. In combination, with a hot-water circulating apparatus, a water heater, consisting of a series of flat hollow discs axially arranged, having central apertures arranged in the line of circulation of any outer casing, a steam space between and a suitable steam inlet and exit connection to said steam space, substantially as described. 2nd. A water heater, adapted to be used with a hot water circulating apparatus, consisting of an outer casing, having caps, steam inlet and outlet openings in said caps, of an inner water chamber having nipples at the ends secured in aperture in the said caps, said water chambers consisting of a series of wedge-shaped hollow discs centrally apertured and secured together, with the apertures in line, having the water spaces a connecting with said central apertures, substantially as described.

No. 35,116. Post Hole Auger.

(*Tarière à trou de pieu*.)

William Robert Baskitt (assignee of William Broadus Beagle,) both of Paris, Missouri, U.S.A., 2nd October, 1890; 5 years.

Claim.—1st. In a machine for boring post-holes, the combination, with a standard, and a rotatable sleeve mounted thereon, and having lateral arms n, n, one of which is provided with a screw-threaded opening, of an auger-bar mounted in said arms, and having its upper portion externally screw-threaded, and provided with a longitudinal key-seat, two horizontal cog-wheels loosely mounted on the auger-bar, two vertical cog-wheels or gears meshing with the horizontal cog-wheels and provided with a crank, a coupling engaged with the key-seat in the auger-bar, two vertical cog-wheels or gears meshing with the horizontal cog-wheels and provided with a crank, a coupling engaged with the key-seat in the auger-bar, and adapted to engage either of the horizontal cog-wheels, and an auger-bit on the lower end of the auger-bar, substantially as described. 2nd. In a machine for boring post-holes, the combination, with a hollow auger bar, having a number of air-openings near its lower end, of a washer or collar surrounding said openings and a key to hold said collar in place, substantially as described. 3rd. In a machine for boring post-holes, the combination, with the auger-bar and auger-bit, of a vertically-movable casing, having a closed top and surrounding the lower portion of the auger-bar, and a lever for raising and lowering said casing, substantially as described. 4th. In a machine for boring post-holes, the combination of the standard A, the rotatable sleeve J mounted on said standard and provided with a lock M, and lateral arms n, n, the auger-bar F, having a longitudinal key-seat f, and externally screw-threaded to engage screw-threads in one of the arms n, the cog-wheels s, s, s, s, crank T, the coupling V, engaged with the key-seat f, the bolt H, to engage said coupling with one of the horizontal cog-wheels, and the auger-bit G on the lower part of the auger-bar, substantially as described. 5th. In a machine for boring post-holes, the combination of the standard A, the platform C, having an opening E, the rotatable sleeve J, having arms n, n, the auger-bar F, bit G and the vertically-movable casing O, substantially as described.