

basket or chamber within the fire box, said side bars and the bed bars being in communication with one another and with the boiler at relatively low and high points, and the bed bars constructed to form a hollow bridge wall, all substantially as described; 2nd The waste circulating fire front lining for a fire box constructed as described; 3rd. The hollow rear end arch bars, as described; 4th The combination of the expandible thimbles, copper rings, screw rods and nuts, with either the grate bars, the fire front lining or the rear end arch bars, for uniting the parts and forming and packing the joints between the bars of the grate, the arch bars and the parts of the fire front lining as described; 5th The combination of the hollow grate bars, a loosely jointed supply pipe leading from the boiler, the lowest tubular passage of the bars, a circulation pipe (also loosely jointed) leading from the highest tubular passage of the bars into the boiler and a stop, a check and waste valve, as described; 6th The combination of the tubular fire front lining, loosely jointed pipe leading from the water space of the boiler to the lowest tubular passage of said fire front lining, the loosely jointed pipe leading from the highest tubular part of the lining into the boiler through a pipe at or near the water line, check valve, waste valve and stop valve, as described; 7th. The combination of the tubular rear arch bars, loosely jointed pipe leading from the boiler to the lowest tubular passage of the rear arch bars, a loosely jointed pipe leading from the highest tubular passage of the said bars into the boiler at or near the water line, and a check valve, a waste and blow-off valve, and a stop valve, as described; 8th The combination of the hollow grate bars, tubular fire front lining, rear arch bars and the several pipes, check valves, blow-off and waste valves, and stop valve, as described; 9th. The method of wasting water through either one or all of the additional water heating and circulating surfaces, which are added to the boiler in the event of a leak or break occurring in one or all of said surfaces and when the pressure and supply from the boiler is wholly or partly cut off by the valve K, as described.

No. 4349. CHARLES LEVEY & WILLIAM MYLES, Toronto, Ont., 2nd February, 1875, for 5 years: "Method of Locking and Unlocking Nuts." (Manière d'ajuster et de désajuster les écrous.)

*Claim.*—1st The nut A, toothed or corrugated on its under or outer surfaces or angles, whether the teeth or corrugations are produced before or after its application; 2nd. The washer B, with its tang or tangs c, or notch or notches D, and E, or partially raised, depressed or corrugated surfaces, whether the same are produced before or after its application; 3rd. The depressions or elevations on the surfaces and bolt holes to which the nut A, and washer B, are to be applied whether the same are produced before or after the formation of the bolt hole or the application of the nut washer and bolt; 4th The combination of the nut A, and washer B, and their application to bolts and bolt holes and to partially raised, depressed, corrugated or plane surfaces and bolt holes for the purpose of locking and unlocking nuts, as set forth.

No. 4350. PHILIP WILLIAMS, Toronto, Ont., 2nd February, 1875, for 5 years: "Machine for Cleaning Fruits." (Machine à nettoyer les Fruits.)

*Claim.*—1st The cylinder A, done around with perforated zinc or galvanized or otherwise and the zinc trough B, to contain the water and the screen G, to conduct the water when thrown from the cylinder; 2nd. The combination of the first claim in combination with the frame C, of wood or iron, the pulley wheels A, and B, the handles and the axle with belt C, and box D, as set forth.

No. 4351. SUSAN M. HIBBARD, Geneva Lake, Wis., U. S., 2nd February, 1875, for 5 years: "Feather Duster." (Plumeau.)

*Claim.*—1st. A feather duster having the stems of the feather split longitudinally, and apart thereof severed from the remaining part as specified; 2nd. A stiff, or quill feather, made flexible by removing the inner portion of the stem, so that the fibre will remain with the enamel of the back, as specified.

No. 4352. JOHN HAGGERT, Brampton, and DAVID BROWN, Garafraxa, Ont., 2nd February, 1875, for 5 years: "Improvements in the Grain Separator of Threshing Machines." (Perfectionnements au séparateur des grains des machines à battre.)

*Claim.*—1st. The combination of the bar B, or continuation of the tumbling shaft in connection with the bevel wheel H, and pinion I, for the purpose of giving motion by means of bolting to the beaters shaft, as set forth; 2nd. The attachment and combination of shaft G, with pulleys O, P, to drive the shoe R, as described; 3rd. The agitator or second set of beaters M, driven as described from the shaft K, or otherwise; 4th The combination or extension of the bar B, from tumbling shaft to the end of the separator and the construction in combination therewith of the pulleys X, Y, for driving the straw carriers either behind or to either side at pleasure; 5th. The chaff carrier N, driven in either of the modes described, and its use for the purpose declared; 6th. The double tooth-bar a, a, for strengthening the teeth of the cylinder as shown in Figs. 3 and 4

No. 4353. WILLIAM C. ARNOLD, Montague, Mich., U. S., 3rd February, 1875, for 15 years: "Ironing Table and Clothes Rack." (Table à repasser et séchoir à linge.)

*Claim.*—1st. In combination with the central ironing table having the fixed and folding clothes racks B, G, K, the racks L, L', constructed as described and provided with folding tables M, and I, the said racks being hinged to the central frame so that they may be compactly folded and unfolded when desired; 2nd. The box table D, having a clothes chest H, in combination with chests E, G, at each end thereof for the convenient reception and storage of sad iron and clothes pins, as described; 3rd. In combination with the rack B, G, the rack L, constructed as described and provided with the table M, and pivoted braces I, whereby the said table may be folded with the rack which carries it to allow the folding of the two racks with each other and the table; 4th. The combination of the main rack B, G, with the supplemental hinged rack K, J, and the thumb spring detents I, for sustaining the supplemental rack in position for use as set forth; 5th. The rack L, hinged to the frame B, in combination with the clothes chest H, and table I, carried by said rack in its folded and unfolded position as set forth; 6th. The bottom N, of the box-table D, having receiving slots a, o, and stops p, in combination with the pins q, of the racks L, L', whereby said racks may be folded beside each other and the main rack and fastened in place by the table stops as described; 7th. The folding supports F, F', for clothes baskets in combination with the clothes chest H, and table I, whereby clothes baskets are held at each end of the table and chest on a level therewith and the supports closed with the table when not in use, as described.

No. 4354. DENNIS F. VAN LIEW, Aurora, Ill., U. S., 3rd February, 1875, for 5 years: "Grain Door for Freight Cars." (Porte de wagons à grain.)

*Claim.*—1st. The combination of the radius bars D, D', with the door C, of a freight car and with the side of said car as set forth; 2nd. The combination of the door C, and radius bars D, D', with the side of a car and with the shoe E, in the doorway thereof as set forth; 3rd. The combination of the swinging door C, and bars D, D', with a guide segment F', or guide bar F, secured to the side thereof or with both, as set forth; 4th The combination of the fastening hook M, and button m, with the door post of a freight car for securing the door C, when closed as described.

No. 4355. RUFUS D. GUILFORD, St. Charles, Mich., U. S., 3rd February, 1875, for 5 years: "Boots-Calks." (Crampons de chaussures.)

*Claim.*—The described boot-calk made from a square piece of sheet steel A, having a spur a, at each corner and provided with a central hole adapted to receive a screw b, for securing the same to a boot sole, as set forth.

No. 4356. CHARLES E. ROBINSON, Brooklyn, N. Y., U. S., 3rd February, 1875, for 15 years: "Apparatus for Oil Burning Furnaces." (Appareil pour les fourneaux consommant l'huile.)

*Claim.*—1st. The method described of heating the oil and afterwards re-heating it by passing it through steam enclosed pipes for the purpose of facilitating the atomizing process by maintaining a high degree of temperature until atomized, as described; 2nd. The described method of feeding the oil to the furnace by forcing through pipes by the direct pressure of steam as described; 3rd. The pipes H, I, and tank B, in combination with the pipe K, and atomizer J, for the purpose specified; 4th. The combination of the reservoir A, provided with pipes D, E, a, valve c, and gauge b, and the supply tank B, heated by the steam coil F, and provided with pipes H, I, with the steam pipe K, and atomizer J, as described; 5th. The combination of the valves E, C, one placed inside the other and both adjustable by means of the hands nuts E, G, in the manner specified; 6th The combination of the two valves C, F, and the valve seat d, in the manner described whereby the jets of liquids and gaseous fluids will form two hollow inverted cones intersecting each other as described; 7th. The burner M, having openings formed of the slit m, or the hole or holes n, as described; 8th. The combination of the valve F, the tubular valve C, and the pipes A, L, and K, as described; 9th The combination of the stuffing box H, having lugs h, with the key I, stem j, and hand nut G, as described.

No. 4357. DANIEL F. PACKER, Mystic-River, Ct., U. S., 3rd February, 1875, for 5 years: "Artificial Fuel." (Aggloméré combustible.)

*Claim.*—The process of manufacturing artificial fuel, by mixing coal dust with a resinous substance while the latter is in a cool, dry and subserized condition, and then causing a more intimate mixture by subjecting the substances together and while being agitated to the action of heat as described.

No. 4358. JAMES TAYLOR, Toronto, Ont., 3rd February, 1875, for 5 years: "Improvements on Burglar Proof Safes." (Perfectionnements aux coffres-forts à l'épreuve des voleurs.)