March 8, 1927.

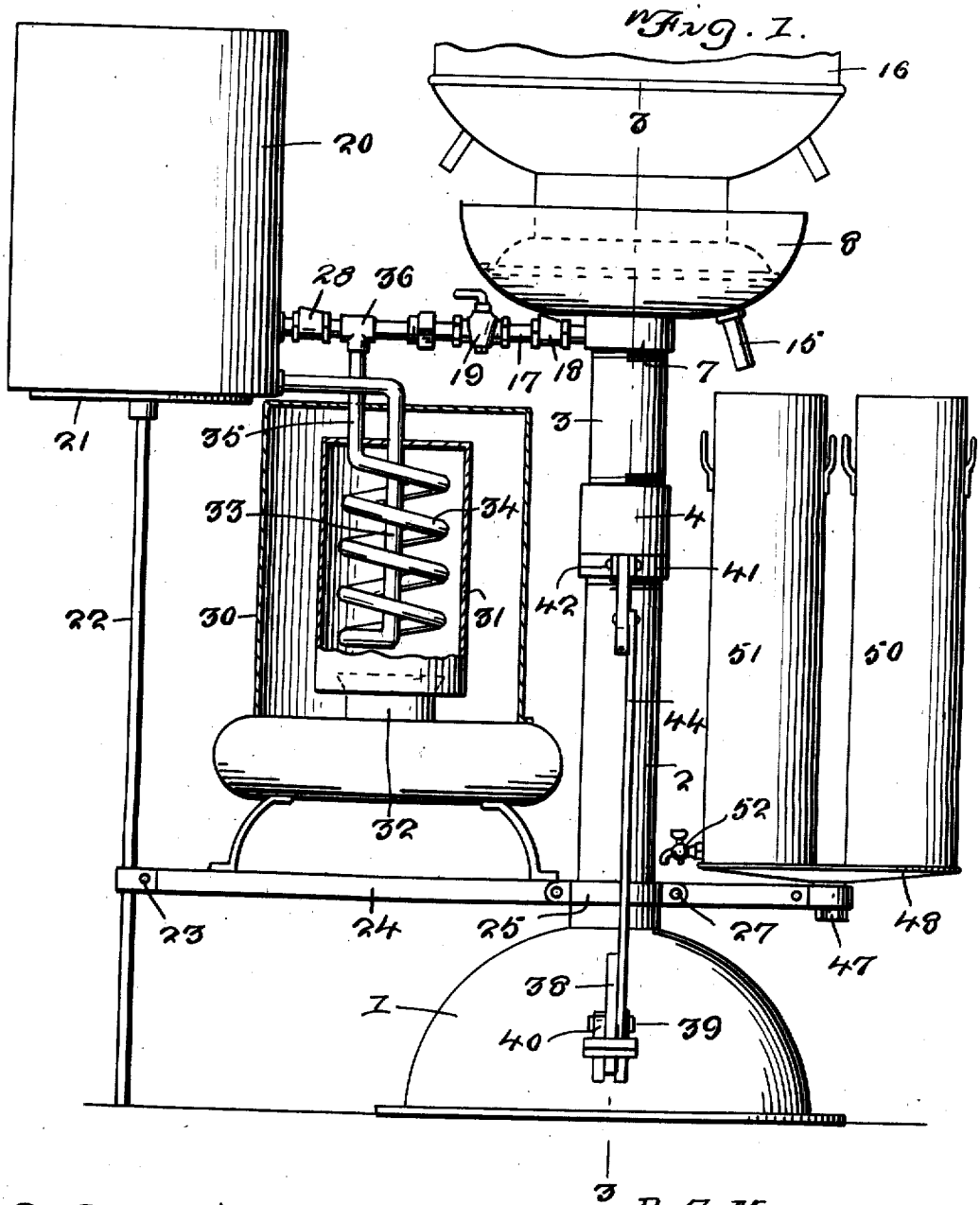
D. A. MAANUM

1,620,116

CAN WASHER

Filed Oct. 15, 1923

3 Sheets-Sheet 1



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Fig. 2.

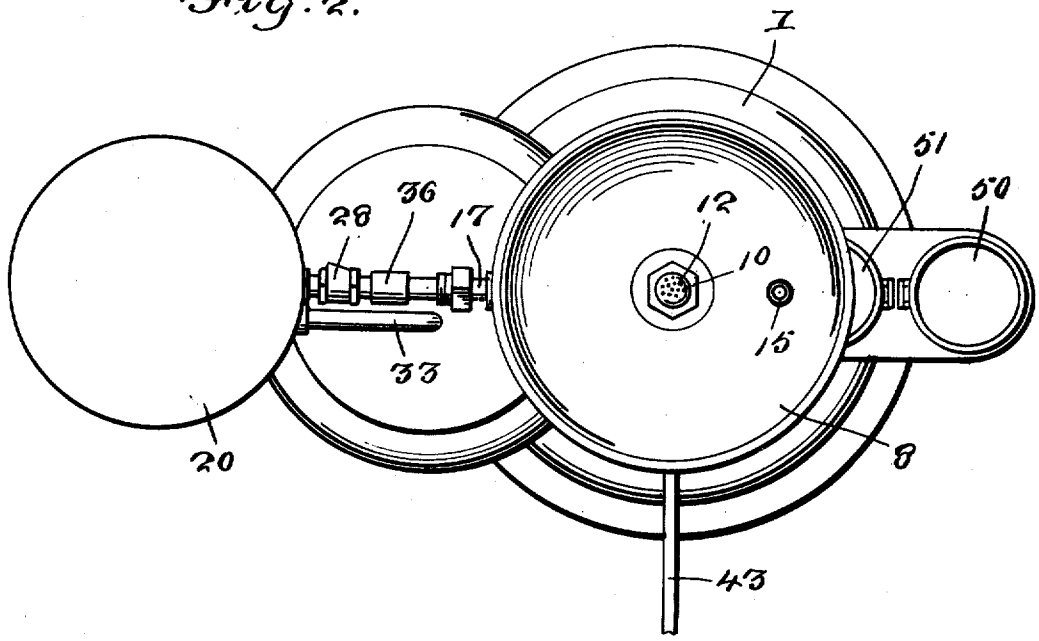
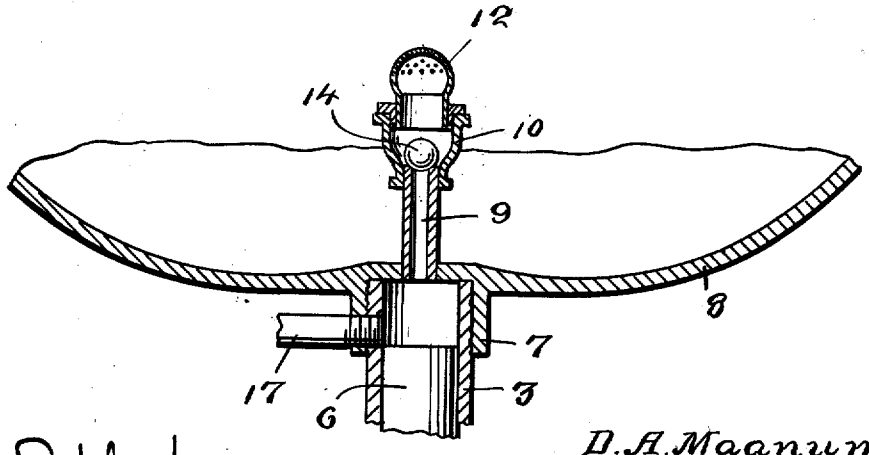


Fig. 4.



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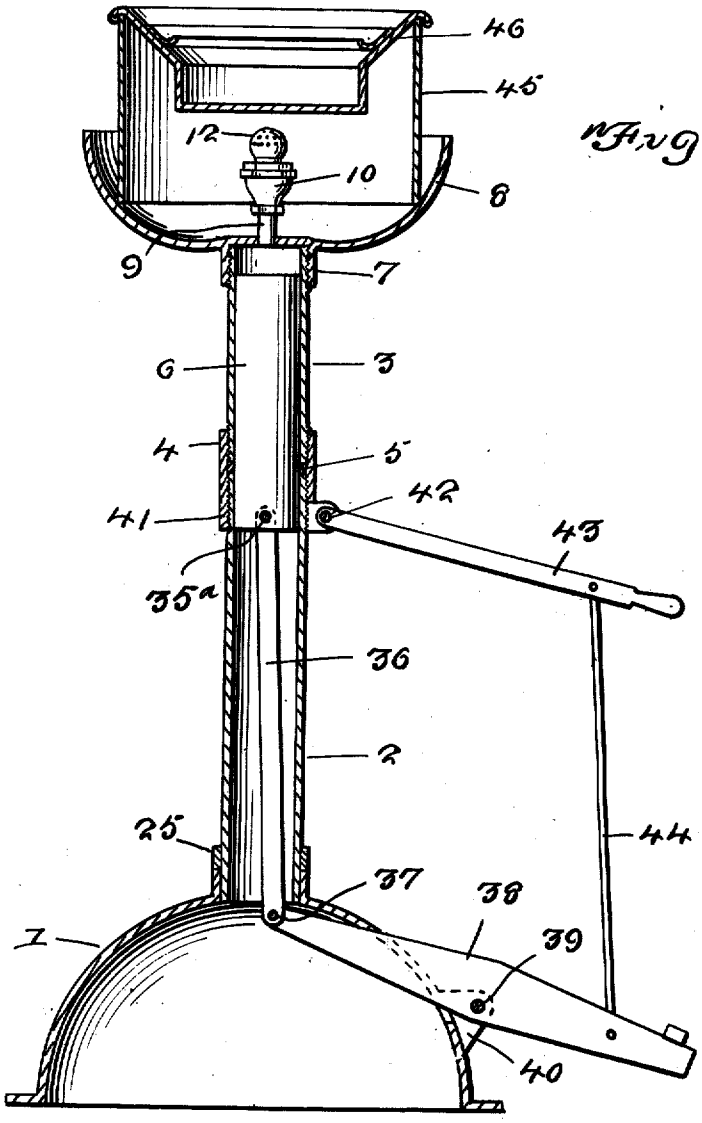


Fig. 3.

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Patented Mar. 8, 1927. 1,620,116

UNITED STATES PATENT OFFICE.

DEDRICK A. MAANUM, OF HANCOCK, MINNESOTA.

CAN WASHER.

Application filed October 15, 1923. Serial No. 668,789.

The object of this invention is to produce a comparatively simple and cheaply constructed means for washing and sterilizing milk cans.

A further object is to produce a device for this purpose which in addition to effectively washing and thoroughly sterilizing a milk can will likewise operate to reclaim milk and cream which may have been left in the can operated upon.

The invention further consists in the details of construction, combination and operative association of parts such as is disclosed by the drawings which accompany and which form part of this application.

In the drawings:

Figure 1 is a side elevation of the improvement, illustrating a milk can to be washed, arranged in the bowl thereof.

Figure 2 is a top plan view thereof.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is an enlarged sectional view through the bowl and the nozzle carried thereby, and showing in the bowl the annular member which supports the milk can tops to be washed and sterilized.

As disclosed by the drawings I make use of a hollow standard which is supported on a suitable base 1. Preferably the base is of inverted bowl shape construction and the standard body includes a lower section 2 and an upper section 3. These sections have their confronting ends threaded and are connected together by a coupling 4. The spaces between the coupling and the confronting ends of the sections 3 and 4 provide a compartment for a packing 5 for snugly retaining a piston 6 in the upper section 3. The piston cylinder comprising the upper standard section 3 has its upper end threaded for the reception of an inwardly threaded depending flange 7 on the lower face of the basin or bowl member 8 of the improvement. The bottom of the basin is rounded inwardly toward the center thereof and the said center is thickened and provided with an opening for the reception of a tube 9. On the tube there is secured the body coupling 10 of the hot water injector nozzle. The nozzle proper, indicated by the numeral 12, being in the nature of a hollow perforated substantially globular member. The nozzle has its lower and open edge flanged outward and is engaged by a bushing that is fitted on the coupling 10. The tube 9 has the upper end of its bore beveled to provide a seat for a ball valve 14. The basin 8 has at its bottom an outlet opening surrounded by a short pipe 15 and through this pipe the water, after acting on the interior of the can 16 to wash and sterilize the same, finds an outlet. The can 16 as disclosed in Figure 1 of the drawings has its mouth arranged in the basin 8 so that the nozzle will be received through the neck of the said can. As shown in Fig. 3, the holes in nozzle 12 extend from the central portion thereof to the top, so that the water sprayed through the nozzle will be projected against substantially all parts of the interior of the can when the can is in the position shown in Fig. 1.

The annular flange or boss 7 provided upon the bottom of the basin 8 has screwed therein a pipe section 17 in which there is a casing 18 containing a check valve which will prevent water passing backward from the water chamber provided between the basin 8 and the portion of the cylindrical standard 3 above the piston 6 when the latter is in one position. Outward of the check valve 18 there is a stop cock 19. Preferably the pipe 17 is made up in connected sections and couplings, the same being of the ordinary character to provide water tight joints and the outer end of the said pipe extends into a water receptacle 20 whose bottom rests on a disk 21 secured to a rod 22 which passes through a horizontally arranged support 24 which extends laterally from and is removably and adjustably secured to the lower standard section 2, said support being adjustable on rod 22 and secured thereto by a bolt 23 and secured to the standard 2 by bolts 27. The central portion of the support is provided with a semi-circular recess, and a clamp 25 whose body portion is less than half the circle is arranged opposite the said center of the support. The clamp has outstanding arms and through these arms there is passed lock means 27 that engage the support and whereby the said support is effectively sustained on the standard. By loosening said clamp the support 24 may be raised or lowered and the clamp again tightened to hold it in position.

The end of the pipe 17 which enters the water containing receptacle 20 is provided with a casing 28 in which there is arranged a

check valve that prevents water passing directly from receptacle 20 through the pipe 17 into the cylinder above the piston 6, and also prevents water passing from the tank 20 back through pipe 35 of coil 34 and exerting a pressure back through said pipe and coil.

Mounted on the support there is a suitable heater, which is broadly indicated by the numeral 30.

In the drum of the heater there is a cylindrical flue or chimney 31 that has its top wholly or partly closed and that has its bottom open to receive therein the burner 32 of the heater, a fuel tank 32ª being shown below said burner. Leading from the bottom of the receptacle 20 there is a tube 33 which extends into the flue and which has its lower end terminating a suitable distance above the burner 32. The tube, from its straight lower end, is coiled as at 34 and has a straight upper branch 35 that passes through the heater and is connected by a coupling 36 to the pipe 17. In this manner it will be noted that the water from the tank or chamber 20 will be directed through the tube 33 and its coiled portion 34 to the center chamber of the heater which I have referred to as a flue. The water will be thoroughly heated before the same is permitted to pass through the pipe 17 into the chamber provided by the top of the cylindrical standard section 4.

Connected by a wrist pin 35ª to the bottom of the piston 6 there is a link 36 that extends through the standard into the hollow base thereof. Pivotally connected to the lower end of link 36, as at 37, is a foot pedal 38 that passes through a suitable opening in the base 1. The pedal 38 is pivoted, as at 39, between lugs 40 formed on the base at the opposite sides of the said opening in said base.

Firmly secured on the standard section 2, below the coupling 5 there is a collar 41. Pivoted to these collars at 42, there is a lever 43. Pivotally connecting lever 43 to the pedal 38 there is a rod or link 44. When an upward pull is exerted on the lever 43 the piston 6 will be moved downwardly in its cylinder provided by the upper standard section so that a quantity of boiling water will be let into the said cylinder above the piston.

The pressure of the operator's foot on the outer end of the pedal 38 will swing the latter to cause the link to move the piston 6 in an upward direction, thus forcing the water through the recticulate nozzle against all parts of the can to thoroughly wash and sterilize the same. A single operation as above described has been found from experience ample to thoroughly clean and sterilize a milk can and when the caps or covers therefor are to be likewise washed and sterilized, I arrange in the basin 8 a ring-like member 45 which provides a rest for the cover 46. The water as previously stated finds an outlet through the downwardly directed spout 15 on the bottom of the basin.

On the support 24 at the opposite side of the portion thereof on which the heater is supported there is pivotally mounted as at 47 a disk or plate 48. Resting on the plate at the opposite sides of the bars there are cans 50 and 51 respectively. The can 51 has adjacent to its bottom an outlet faucet 52. In cleaning milk cans I have found that in the majority of instances a quantity of cream and milk still remains in the can. Therefore I revolve the plate or table 48 to bring can 51 directly below the spout 15 in the basin 8. A certain quantity of the cream and milk will drain into can 51 before the washing and sterilizing process. Cans containing such milk and cream are not permitted to receive a full quantity of the boiling water through the nozzle but only a sufficient amount to drain the milk and cream from the walls thereof so that the full quantity of cream is received in the said can 51. I then revolve the table 48 to bring the can 50 to the spout 15 and again operate the lever and pedal to inject into the can a full quantity of the boiling water so that the can is effectively cleaned, and the residue therefrom together with the used hot water, is directed from the basin into can 50. By having the two cans 50 and 51, it is not necessary to receive all of the rinse water in one can. The water that is used in the latter portion of the cleaning operation which contains little or no milk or cream, is not mixed with the water that is used in the initial cleaning and which is mixed with the residue of milk or cream. The residue of milk or cream in the can is thus saved and at the same time the amount of the rinse water which is shipped with the milk or cream is greatly reduced. A great saving is thus made in transportation charges on the milk and cream. Of course a sufficient amount of water will be received with the cream in the can 51, but the cream being of a lighter body will rise to the surface of the water. After a sufficient length of time the cock 52 can be opened to allow the draining of the water from the can and upon the first appearance of cream through the faucet the latter is turned off, and in this manner I reclaim a comparatively large quantity of cream which is ordinarily wasted.

It is thought that the foregoing description, when taken in connection with the drawings will fully set forth the construction, advantages and operation of the improvement to those skilled in the art to which this invention relates, but I reserve the right to make all such changes therefrom as fall within the scope of what I claim.

From the above description it is seen that

applicant has invented a very simple and efficient can washing apparatus. The device is quite portable, and it has all of its parts supported on one frame so that it is entirely self contained.

Having described my invention, I claim:—

1. An apparatus for washing and sterilizing milk cans comprising a standard, a basin at the top thereof adapted to support an inverted milk can, a spraying nozzle upstanding centrally in said basin and communicating with said standard, the interior of said standard being provided with a pump cylinder, a piston reciprocable therein, a hot water supply means connected to the upper end of said cylinder, means for reciprocating said piston, including a treadle carried by said standard and connected to said piston for projecting a sprav of hot water through said nozzle into said can.

2. An apparatus for washing and sterilizing cans having in combination, a cylindrical standard constituting a pump cylinder, a piston therein, a perforated basin centrally disposed at the top of said standard, a spraying nozzle projecting upwardly centrally of said basin whereby said cylinder, piston, basin and nozzle are vertically and axially alined and in communication, said standard having an enlarged base portion, a piston rod extending downwardly in said basin, a treadle lever intermediately pivoted to said base portion and pivoted at one end to said piston rod, means for lifting said treadle lever, and means for supplying heated water to the said cylinder above said piston.

3. A self-contained cleaning apparatus comprising a bowl having a wall adapted to support an inverted can, a nozzle carried in said bowl in position simultaneously to project water into contact with substantially all portions of the interior of said can, a conduit connecting said nozzle with a water heating means, and pump means disposed between said nozzle and heating means adapted to be actuated by the operator to force the heated water through said nozzle.

4. A portable self-contained can washing apparatus having in combination, a bowl having a wall adapted to support an inverted can, a nozzle upstanding in said bowl adapted simultaneously to spray water against substantially all portions of the interior wall of said can, a pump cylinder, a conduit connecting said nozzle to said pump cylinder, a piston movable in said cylinder, a member adapted to be moved by the operator for operating said piston, and a conduit connecting said cylinder with a water heating means.

5. A portable self-contained apparatus for washing and sterilizing milk cans having in combination, a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against the interior wall of said can, means carried on said frame constructed and arranged to be actuated by the power of the operator for forcing water through said nozzle, a water heating means carried on said frame and a conduit connecting said first mentioned means and said water heating means.

6. Apparatus for washing and sterilizing milk cans comprising a standard, a pump cylinder carried by said standard, a basin at the top of and axially alined with said pump cylinder adapted to support an inverted milk can, a spraying nozzle upstanding centrally in said basin and communicating with the pump cylinder, a piston reciprocable in said cylinder, means for supplying hot water to said cylinder, and manually operable means connected to the piston for moving the same to force water from said cylinder through said nozzle to clean and sterilize the milk can.

7. A portable self-contained apparatus for washing and sterilizing milk cans having in combination a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against substantially all portions of the interior wall of said can, a water heating means mounted on said frame means connecting said water heating means and said nozzle, a check valve in said last mentioned means preventing flow of water toward said water heating means, means for supplying water to said water heating means, a drain means for said bowl and a plurality of receptacles arranged alternately to receive from said drain means.

8. A portable self-contained apparatus for washing and sterilizing milk cans having in combination a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against substantially all portions of the interior wall of said can, a water heating coil carried on said frame, a water supply means connected to the bottom of said coil, means connecting the top of said coil to said nozzle, a check valve in said last mentioned means preventing flow of water toward said coil, and a burner supported on said frame and disposed beneath said coil.

9. A portable self-contained apparatus for washing and sterilizing milk cans having in combination a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against substantially all portions of the in-

terior wall of said can, a water heating coil mounted on said frame, a water supply tank mounted on said frame, means connecting the bottom of said coil to said tank adjacent the bottom thereof, a conduit connecting the top of said coil to said tank above said last mentioned means, a check valve in said conduit preventing flow of water toward said coil, and means connecting the top of said coil to said nozzle.

10. A portable self-contained apparatus for washing and sterilizing milk cans having in combination a standard comprising longitudinally adjustable sections forming a pump cylinder, a bowl supported at the upper end of said standard having a wall adapted to support an inverted milk can, a nozzle upstanding in said bowl adapted simultaneously to spray water on substantially all portions of the interior wall of said can, a water heating means, a conduit connecting said means and said pump cylinder, a water supply tank, a support therefor, means connecting the top and bottom of said water heating means to said tank, a vertically adjustable bracket mounted on said standard and on said support carrying said heating means, and a piston in said cylinder adapted to be actuated by the power of the operator for forcing water through said nozzle.

11. The structure set forth in claim 10, a revoluble support also mounted on said bracket, a pair of receptacles carried on said support and a drain pipe leading from said bowl and terminated above said receptacle whereby either receptacle may be positioned to receive from said drain pipe.

12. An apparatus for cleaning milk and cream cans having in combination, a frame comprising a column, a basin supported on said column adapted to hold an inverted can, a nozzle upstanding in said basin in position to spray water against the interior of said can, means connecting said nozzle to a water heating means, a drain pipe leading from said basin, means carried by said column constituting a support, a pair of receptacles carried on said support with their upper ends disposed below said drain pipe, said pipe and support being relatively movable whereby either receptacle may receive from said drain pipe.

In testimony whereof I affix my signature.

DEDRICK A. MAANUM.

terior wall of said can, a water heating coil mounted on said frame, a water supply tank mounted on said frame, means connecting the bottom of said coil to said tank adjacent the bottom thereof, a conduit connecting the top of said coil to said tank above said last mentioned means, a check valve in said conduit preventing flow of water toward said coil, and means connecting the top of said coil to said nozzle.

10. A portable self-contained apparatus for washing and sterilizing milk cans having in combination a standard comprising longitudinally adjustable sections forming a pump cylinder, a bowl supported at the upper end of said standard having a wall adapted to support an inverted milk can, a nozzle upstanding in said bowl adapted simultaneously to spray water on substantially all portions of the interior wall of said can, a water heating means, a conduit connecting said means and said pump cylinder, a water supply tank, a support therefor, means connecting the top and bottom of said water heating means to said tank, a vertically adjustable bracket mounted on said standard and on said support carrying said heating means, and a piston in said cylinder adapted to be actuated by the power of the operator for forcing water through said nozzle.

11. The structure set forth in claim 10, a revoluble support also mounted on said bracket, a pair of receptacles carried on said support and a drain pipe leading from said bowl and terminated above said receptacle whereby either receptacle may be positioned to receive from said drain pipe.

12. An apparatus for cleaning milk and cream cans having in combination, a frame comprising a column, a basin supported on said column adapted to hold an inverted can, a nozzle upstanding in said basin in position to spray water against the interior of said can, means connecting said nozzle to a water heating means, a drain pipe leading from said basin, means carried by said column constituting a support, a pair of receptacles carried on said support with their upper ends disposed below said drain pipe, said pipe and support being relatively movable whereby either receptacle may receive from said drain pipe.

In testimony whereof I affix my signature.

DEDRICK A. MAANUM.

DISCLAIMER

1,620,116.—*Dedrick A. Maanum*, Hancock, Minn. CAN WASHER. Patent dated March 8, 1927. Disclaimer filed February 4, 1935, by the assignee, *Cherry-Burrell Corporation*.

Hereby enters this disclaimer to claims 3, 4, and 5, of said Letters Patent, which are in the following words, to wit:

"3. A self-contained cleaning apparatus comprising a bowl having a wall adapted to support an inverted can, a nozzle carried in said bowl in position simultaneously to project water into contact with substantially all portions of the interior of said can, a conduit connecting said nozzle with a water heating means, and pump means disposed between said nozzle and heating means adapted to be actuated by the operator to force the heated water through said nozzle.

"4. A portable self-contained can washing apparatus having in combination, a bowl having a wall adapted to support an invert can, a nozzle upstanding in said bowl adapted simultaneously to spray water against substantially all portions of the interior wall of said can, a pump cylinder, a conduit connecting said nozzle to said pump cylinder, a piston movable in said cylinder, a member adapted to be moved by the operator for operating said piston, and a conduit connecting said cylinder with a water heating means.

"5. A portable self-contained apparatus for washing and sterilizing milk cans having in combination, a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against the interior wall of said can, means carried on said frame constructed and arranged to be actuated by the power of the operator for forcing water through said nozzle, a water heating means carried on said frame and a conduit connecting said first mentioned means and said water heating means."

[*Official Gazette March 5, 1935.*]

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"4. A portable self-contained can washing apparatus having in combination, a bowl having a wall adapted to support an invert can, a nozzle upstanding in said bowl adapted simultaneously to spray water against substantially all portions of the interior wall of said can, a pump cylinder, a conduit connecting said nozzle to said pump cylinder, a piston movable in said cylinder, a member adapted to be moved by the operator for operating said piston, and a conduit connecting said cylinder with a water heating means.

"5. A portable self-contained apparatus for washing and sterilizing milk cans having in combination, a frame, a bowl supported at one upper portion thereof having a wall adapted to support a milk can in inverted position, a nozzle upstanding in said bowl adapted simultaneously to supply water against the interior wall of said can, means carried on said frame constructed and arranged to be actuated by the power of the operator for forcing water through said nozzle, a water heating means carried on said frame and a conduit connecting said first mentioned means and said water heating means."

[*Official Gazette March 5, 1935.*]