Dec. 8, 1925. 1,564,598

D. A. MAANUM

NOZZLE FOR MILK CAN CLEANERS

Filed Aug. 28, 1924

Fig. 1.

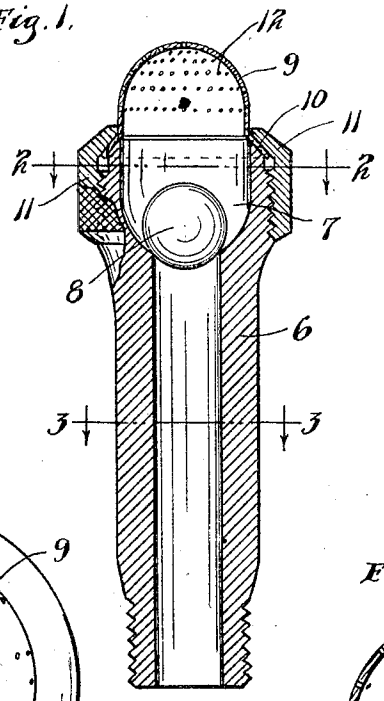


Fig. 3.

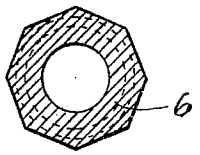


Fig. 4.

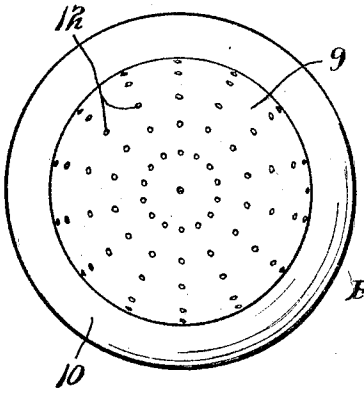


Fig. 5.

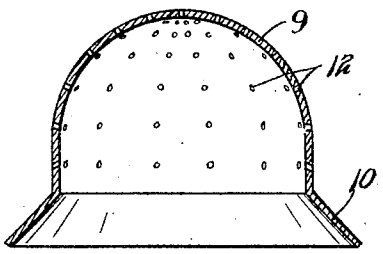
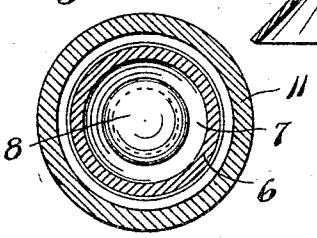


Fig. 2.



INVENTOR.
DEDRICK A. MAANUM.
BY HIS ATTORNEY.
James F. Williamson

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UNITED STATES PATENT OFFICE.

DEDRICK A. MAANUM, OF MINNEAPOLIS, MINNESOTA.

NOZZLE FOR MILK-CAN CLEANERS.

Application filed August 28, 1924. Serial No. 734,649.

To all whom it may concern:

Be it known that I, DEDRICK A. MAANUM, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in a Nozzle for Milk-Can Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a nozzle, and while the nozzle may be used in various places, it is particularly designed for use with a machine for cleaning and sterilizing milk cans. These cans are inverted in a basin-like member above which the nozzle is disposed and hot water is forced through the nozzle against the inside of the can. It is desirable that all parts of the interior of the can be engaged by the sterilizing fluid. It is well known that the ordinary milk can has a converging portion adjacent the neck thereof and it is desirable that some water from the nozzle be directed downwardly against this converging portion.

It is an object of this invention therefore to provide a nozzle through which hot water may be forced and which will spray said water outwardly in substantially radial directions, some of the jets being directed downwardly.

It is a further object of the invention to provide a nozzle having a body portion adapted to be attached to the water supply means and comprising a check valve, said nozzle having a cylindrical spray head at its upper end having a semi-spherical top in which a multiplicity of holes are formed.

It is also an object of the invention to provide a simple and efficient structure for holding said spray head in place and to provide an efficient arrangement of the holes therein.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to the same parts throughout the different views, and in which,

Fig. 1 is a vertical central section through the nozzle;

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1, as indicated by the arrows;

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1, as indicated by the arrows;

Fig. 4 is a top plan view of the spray head; and

Fig. 5 is a central vertical section of the spray head, Figs. 4 and 5 being shown in an enlarged scale.

Referring to the drawings, a nozzle is shown comprising a body portion 6 of considerable longitudinal extent. While this body portion may be of various forms, in the embodiment of the invention illustrated it is shown as angular or octagonal in shape so as to have a wrench applied thereto and the same is threaded at its lower end for insertion into a water supply means. The body portion 6 has a central passage extending therethrough opening into a chamber 7 at its upper portion having a substantially semi-spherical bottom, in which chamber a ball 8 is loosely disposed. The ball adapted to seat over the top of said passage and close the same. The body portion 6 is exteriorly threaded adjacent its upper end and has a downwardly beveled upper surface. A spray head 9 is provided of cylindrical form having a semi-spherical top portion. The said spray head has an outwardly and downwardly flaring flange 10 at its lower edge adapted to contact with the beveled top surface of body member 6. As shown in Fig. 5, spray head 9 is formed of thin sheet material preferably brass. A collar 11 having an inturned flange at its upper end is screwed onto the body 6 and said flange pressed the flange 10 of the spray head tightly down on the beveled top surface of member 6. The collar 11 is shown as having its exterior surface knurled so that it can be conveniently gripped and turned. The spray head 9 is provided with a plurality of rows of circumferentially spaced holes 12 extending therethrough. These holes in the upper portion of the head extend substantially radially of this semispherical portion but the lower row of holes which is disposed below the center of the semi-spherical portion are directed outwardly and downwardly, as shown in Fig. 5. The holes 12 are

equally spaced along the periphery of the spray head 9 or along a great circle of said periphery. This results in the holes being arranged in rows along great circles passing through the top central portion of the spray head and also results in the holes being closer together circumferentially in the various horizontal rows.

In the operation of the nozzle in the milk can cleaning machine, the same is connected to a pumping means. When the hot water is forced upward through the body 6, ball 8 is lifted from its seat and the hot water forced and sprayed out through the holes 12. The projected jets, as stated, will be directed substantially radially and the jets from the lower holes 12 will be directed downwardly. On the suction stroke of the pump, ball 8 is drawn to its seat so that air cannot be drawn through the nozzle. The nozzle can be quickly and easily taken apart and cleaned by merely unscrewing the collar 11. The ball 8 can then be removed as well as the spray head 9, and the parts in chamber 7 thoroughly cleaned. Owing to the thin material of which it is made, the member 9 is effectively cleaned by brushing or washing thereof with a cloth and it is unnecessary to punch accumulated matter out of the holes therein.

From the above description it is seen that applicant has provided a simple and efficient spray nozzle for the purpose intended. The device is simple, easily made and assembled and, as stated, is easily disassembled for cleaning. The body portion 6, in practice, is preferably made of aluminum while the spray head 9 and collar 11 are made of brass, as is also the ball 8. The device has been amply demonstrated in actual practice and found to be very successful and efficient and the same is being supplied commercially on the milk can cleaning machines.

It will, of course, be understood, that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above stated, such as disclosed and defined in the appended claims.

What is claimed is:

1. A nozzle having in combination, a body having a chamber in its upper end, a passage leading downwardly from said chamber, a ball loosely disposed in said chamber adapted to seat at the top of said passage and close the same, the top of said body having a downwardly and outwardly beveled surface, a hollow cylindrical spray head of thin sheet material having a semi-spherical top with a multiplicity of holes therethrough above said body and having an outwardly and downwardly inclined flange adapted to seat on said beveled surface, and a flanged collar threaded on said body and clamping said flange against said beveled surface.

2. The structure set forth in claim 1, said spray head having at least one row of holes through its cylindrical portion adapted to direct fluid outwardly and downwardly above said collar.

3. A nozzle comprising a body portion with a chamber therein having a cylindrical upper portion, a spray head having a cylindrical lower portion and a semi-spherical upper portion, said lower portion having a cylindrical interior wall alining with the upper portion of said chamber and also having a row of holes therethrough which holes are directed downwardly and outwardly, said semi-spherical portion having a plurality of rows of spaced upwardly and outwardly directed holes therethrough, said spray head having a flange at its lower end overlying the top of said body portion, and means for pressing said flange against the top of said body portion and holding the same thereagainst at all circumferential points thereof.

4. A nozzle for a milk can cleaning machine comprising a body having a chamber therein with an upper cylindrical portion and a lower rounded portion, a check valve for said chamber, said body having a passage leading downwardly from said chamber adapted to be closed by said valve, a head of sheet material having a lower cylindrical portion alining with the cylindrical portion of said chamber having an upper semi-spherical portion provided with upwardly and outwardly directed circumferentially spaced holes, said cylindrical portion of said head also having a row of downwardly directed holes therethrough, said head having an outwardly and downwardly directed flange extending thereabout at its lower end, said body having an outwardly and downwardly beveled upper edge on which said flange is seated and having an exteriorly threaded portion and a sleeve threaded onto said latter portion having an inwardly directed upper portion adapted to seat against said flange throughout its circumferential extent and press said flange down on said beveled upper edge of said body throughout its circumferential extent.

In testimony whereof I affix my signature.

DEDRICK A. MAANUM.