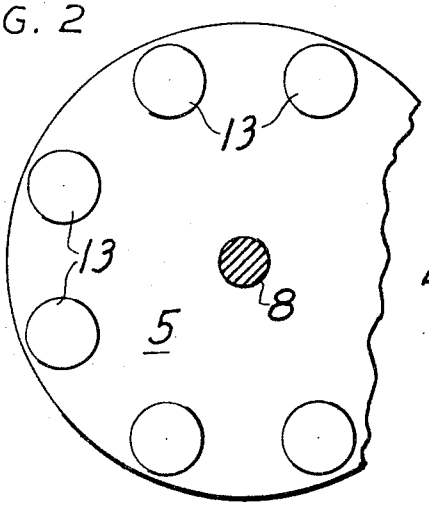
March 4, 1969 L. ROBERTS 3,430,639

CLEANING MEANS FOR LIQUID DISPENSERS

Filed Nov. 8, 1966

FIG. 2



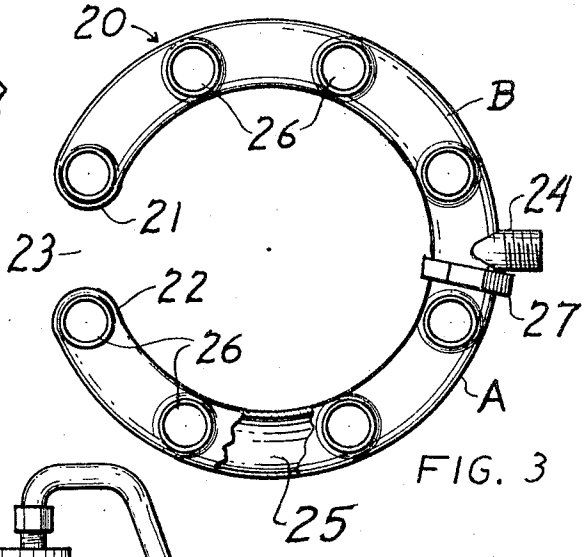




FIG. 3

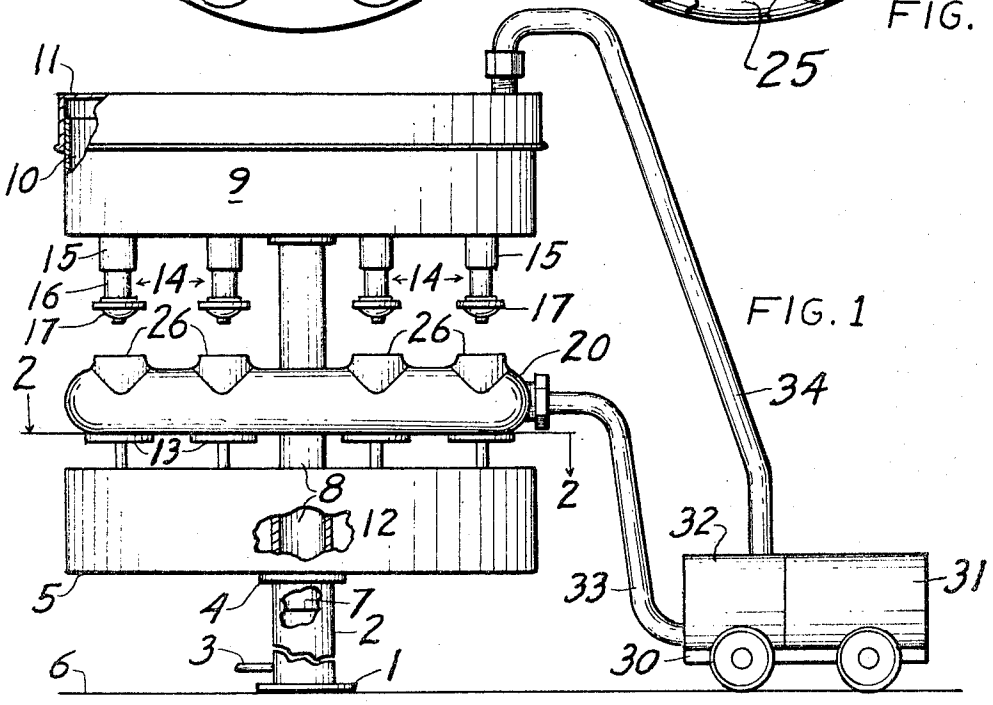



FIG. 1

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# CLEANING MEANS FOR LIQUID DISPENSERS

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Int. Cl. B08b 3/04, 7/04

## ABSTRACT OF THE DISCLOSURE

Closed circuit high pressure means for cleaning and flushing liquid dispensing machines having an overhead tank which contains the liquid to be dispensed and platform means therebeneath for holding the containers to be filled with liquid from the tank.

This invention is concerned with means for cleaning and sanitizing machines which are employed for dispensing liquids etc. and especially milk and other dairy products. To be more specific, but without limiting the scope of the invention, the invention applies to machines for dispensing pure milk, or flavored milk, into bottles or other containers.

Such machines must be kept in a very sanitary condition and hence must be cleaned frequently. Every part of the machine must be cleaned and especially those parts which may come into contact with the liquid to be dispensed or which is being dispensed. To avoid time and labor in removing parts of the machine for cleaning purposes, the machine is kept intact and a thorough cleaning accomplished.

One of the principal objects of this invention is to present means and ways of thoroughly cleaning all conduits and fluid passage ways of dispensing machines with a minimum of time and labor.

Another object is to provide a portable unit having a portion thereof to neatly fit into the dispensing portion of the machine which requires a minimum of space and which can be easily employed for each or any number of such machines.

In the drawings:

FIG. 1 is an elevational view of a machine for filling milk bottles;

FIG. 2 is a sectional view taken along the line 2—2 of FIG. 1, but with a portion thereof broken away;

FIG. 3 is a plan view of an insert.

As shown, the machine has a standard or base **1** in the form of an annular flange that is integral with an upright tubular cylinder **2** having a chamber connected by the pipe **3** to a suitable supply of compressed air. An upper portion of the cylinder has an integral flange **4** which is secured to the bottom of a circular housing **5**. Obviously, the flange means **1** is firmly secured to the surface **6** as by anchor bolts and the like. Within the chamber of cylinder **2** there is the lower portion **7** of a piston or plunger **8** that is firmly fixed to the bottom of a tank means **9**. The chamber **10** of this tank is normally provided with the liquid to be dispensed which in this particular case would be milk. The top of the tank is closed by a removable cover **11**.

The housing has the guide tubular means **12** for the piston means **8** and in this particular illustration, the housing **5** is immovable. The top portion of this housing is provided with a plurality of platforms **13** having stems which support them above the housing surface. These platforms are provided to support bottles to be filled during normal operations. However, instead of a plurality of such platforms, a single one may be employed which has a circular configuration. It should be clear, however, that the tank **9** can be raised and lowered as the



air pressure is admitted and exhausted in cylinder **2** through the pipe means **3**. To show the controls of the operative means for the machine is deemed unnecessary in order to make the invention per se clear. Obviously, any of the parts mentioned may be of standard manufacture as supplied by the trade.

The tank **9** is provided with a plurality of depending valves **14** which may be of any standard make, shape and form. It is suffice here to say that the sleeves **15** are fixed to the tank bottom and that these sleeves accommodate the reciprocable sliding tubes **16**. Each slidable telescoping tube is provided with a nozzle-like means **17**, and which nozzle-like means is preferably provided with elastic or soft contact head means for making connection with the open top of the bottle, not shown.

When the tubes **16** are forced upwardly into their sleeves, as by pressure of a bottle top, for instance, as the tank is lowered, the valve is opened and the liquid contents of the tank, that is, a portion of the centents, flow into the bottle until the tank is raised by action of the piston means **8**.

All the parts heretofore mentioned were given to set up a bottle filling machine of a kind to show how the invention can be used. Obviously, the mentioned parts may take different forms and yet be adaptable to the employment of the invention herein disclosed. For instance, such parts may be of the kind shown in the Wight Patent No. 3,227,168. And it may also be pointed out that it is immaterial to the invention whether or not the tank is raised and lowered or the platform or platforms **13** are raised and lowered.

For cleaning all milk passages throughout the machine, a semi-ringlike insert or manifold **20** is provided. This insert is obviously made of suitable material such as stainless steel tubing and has the general shape of the letter C. It is a manifold unit and is provided with the spaced ends **21** and **22** to present an opening **23**. The purpose of the said opening is to provide a means so that the insert ring-like unit can clear the piston **8** and thus be made concentric with the piston **8** as it, the insert, rests upon the platforms **13**. At the opposite side portions of the manifold insert **20** there is a threaded tube **24** projecting and which tube is integral with the insert and arranged to conduct cleaning fluid into the passage **25** thereof.

The upper surface of the insert has a plurality of raised openings **26** which are so spaced and arranged that when the insert is placed upon the platforms **13**, each opening or port **26** is mated with one of the valve heads **17**. The ports may be machined to provide good valve seats so that when the valve heads are brought into contact therewith, a good connection is made. By making such a good connection between each valve and its respective valve seat, high pressure may be used for the cleaning fluid to better and more quickly cleanse the passages where the milk normally flows; obviously, however, this means clamping the cover **11** secure to the tank. However, since the cleansing fluid may be merely under a gravity flow pressure, such ports **26** may be no more than raised opening to readily accommodate the valve heads. In the event the standard **8** is greater diameter that can pass through the opening **23**, the coupling means **27** is provided for joining the sections A and B. By removing the internally threaded cap means **27** from the threaded end of section B, the two sections can be separated so they can be joined after embracing standard **8**.

A cart means **30** is shown provided with wheels and upon which is secured a motor-pump means. This has a suitable size motor **31** and a suitable size pump **32**. A conduit, preferably flexible, indicated at **33** connects the outlet **24** of the manifold insert with the intake side of the pump **32**, as shown. Another conduit **34** connects the

outlet of the pump with the top of the tank **9**; but when the cover **11** is used, the connection is made thereto as shown.

It should now be clear, that when it is desired to clean the milk flow passages of a bottle filling machine, it is only necessary to have the tank **9** raised and then place the insert into position as shown in FIG. 1, then make conduit connections with the motor-pump unit or rather from the motor-pump unit to the machine as shown. Next step, lower the tank so as to cause the valve heads **17** to make contact with their respective ports **26**. Then, start the electric motor to run the pump in order to thoroughly clean all passages and this can be done in a short time without removing any parts of the filling machine. Obviously, the conduits should be flexible so that they can be easily handled.

Certain novel features and details of this invention are disclosed herein, and in some cases in considerable detail, in order to make the invention clear in at least one form thereof. However, it is to be clearly understood that the invention, as disclosed, is not necessarily limited to the exact form and details disclosed since it is apparent that various modifications and changes may be made without departing from the spirit and scope of the invention.

Having thus described my invention, what is claimed as new and desired to be secured by Letters Patent is:

**1.** In combination, a cleaning device for washing the passageways of a liquid dispensing machine and the like; the machine having a sealed storage tank and a base with a central post means extending upwardly therefrom to support the tank, a space between the tank and the base and dispensing valves extending from the tank in a downward direction, the base having platform means upon which is to be placed containers to be charged with dispensible liquid from the tank; the device including a portable insert positioned upon the platform means and having ports therein to make sealing contact with said valves; a pump means, conduit means connecting the pump means with said tank, conduit means connecting the pump with said insert, means for reducing the space between the tank and base so that when cleaning fluid is placed into the tank and the pump operated, the cleaning fluid circulates through the conduit means, tank, valves and insert to wash all internal surfaces thereof under a liquid pressure greater than that of gravity.



**2.** The combination recited in claim **1** wherein the platform means is fixed in position and the tank supported in a manner to be reciprocated toward and away from the platform means.

**3.** The combination recited in claim **1** wherein the tank is fixed in position and the platform means is supported to be reciprocated to and from the tank.

**4.** The combination recited in claim **1** wherein the tank is provided with a plurality of dispensing valves and wherein the platform means is for supporting a plurality of containers, one container for each valve, the insert comprising a perimetrical manifold having a plurality of sealable ports spaced in alinement with the valves.

**5.** The combination recited in claim **4** wherein the insert has spaced end portions to provide an opening to accommodate the central past means.

**6.** The combination recited in claim **4** wherein the insert has but a single outlet and wherein the insert consists of two portions joined together by pipe-like coupling means.


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ROBERT L. BLEUTGE, *Primary Examiner.*

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