March 13, 1951 W. S. FULD 2,545,350

VALVED POURING ATTACHMENT FOR MILK BOTTLES

Filed Sept. 21, 1949

Fig. 1.

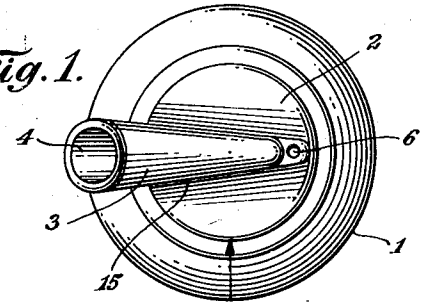


Fig. 3.

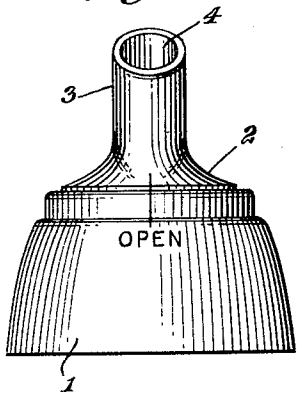


Fig. 2.

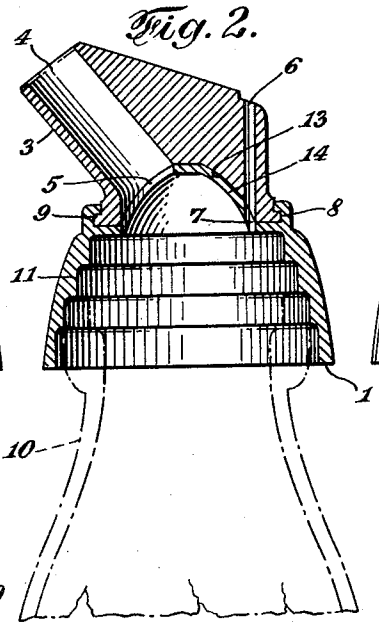


Fig. 4.

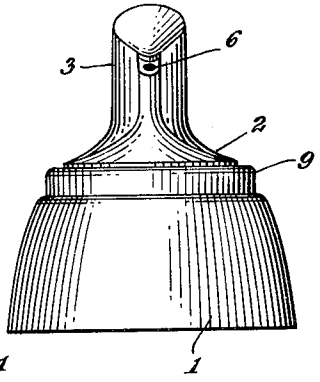


Fig. 6.

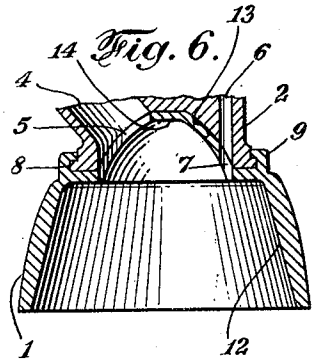
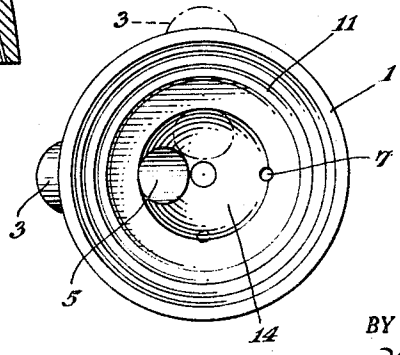


Fig. 5.



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VALVED POURING ATTACHMENT FOR MILK BOTTLES

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Application September 21, 1949, Serial No. 116,971

1 Claim. (Cl. 222—484)

1

My invention is an improvement in discharge or pouring attachments, adapted for household use upon containers of liquids; especially bottles filled with milk, and similar vessels.

An important object of this invention is to provide a discharge attachment of suitable material having a head which can be readily mounted on the container, and a movable part which can be manipulated like a faucet to open or close the container.

Another object is to provide such an attachment which can be quickly produced, as by molding, and having the parts so fashioned that they can be easily and effectively assembled and taken apart.

The drawings illustrate two embodiments of the improvement, but the shape and other details of construction can be changed without deviation from the general design, as set forth in the appended claim.

On the drawings,

Figure 1 is a top plan of my improved nozzle attachment;

Figure 2 is a longitudinal section taken centrally along line 2—2 of Figure 1, showing the attachment in place on a container;

Figure 3 is a front or end view of the attachment;

Figure 4 is a similar view seen from the other end.

Figure 5 is a bottom plan thereof; and

Figure 6 is an axial section of part of a modification of the attachment.

The nozzle is chiefly intended for use upon milk bottles, and is constructed both to seal the bottle or to deliver the contents as required. It comprises a hollow head 1, having an open bottom and rotatably connected to the head is a nozzle 2 with a pouring spout 3. Inside the spout 3 is the outlet or bore duct 4, and the head has a vent opening or outlet 5. The nozzle also has an air inlet duct 6, and the head an air inlet opening 7.

The head and nozzle are both preferably round, and the upper end of the head, which is closed except for the ports or apertures 5 and 7, engages the nozzle 2 and holds it rotatably in place thereon. The nozzle 2 has a flange 8 encircling its lower end, which is round, and the head 1 has an external bead 9 on its outer surface. This bead is undercut, so as to present a groove extending all around the inner side of the bead 9. The flange 8 fits within the groove snugly and is thereby united to the head 1. It can be turned by hand to bring the discharge duct 4 into registry with the vent 5 in the head and the air duct 6 in line with the inlet 7. Then the contents of the bottle indicated at 10 can be poured out through the nozzle. The duct 4 and vent 5 are large in comparison with the duct 6 and port 7, which prevents the outflow of milk by capillary attraction.

2

When the nozzle is turned so that the duct 4 does not register with the outlet port 5, the bottle 10 is of course fully sealed as effectively as if capped and hooded in the usual way. The duct 6 and port 7 are then also out of alinement.

The head 1 is made out of a strong but flexible plastic material that is proof against acid and all the substances found in milk. The flexibility of the head and the flange 8 allows the nozzle 2 to be held in position on the head or pulled off at will. The parts are assembled simply by putting the wide end of the nozzle upon the top, centering the nozzle, and then pushing it against the top till the bead 9 yields and the flange 8 slips past the inner edge of the bead and into the groove around the inner side of this bead 9; which thus overlaps the flange 8. The bead 9 then retains the nozzle but the latter can be revolved as required. The nozzle can therefore be detached from the head in a moment for washing and cleaning. On the outer rim of the head marks can be made to indicate the open and closed positions of the nozzle 2.

To permit such an attachment to be utilized with bottles of various sizes, the inside of the head has cylindrical walls or sections of surfaces of successively reduced diameters. These sections are connected by shoulders 11 as in Figure 2, or the head 1 can be shaped by giving the inside of the head a taper 12 as shown in Figure 6. In this way the head can be made so that it will fit tightly and securely on the mouth of a bottle of any size. Either head shown in Figures 2 and 6 can be so formed that it can be mounted on two, three or more bottles all of different sizes. Hence the attachment can be produced in one size only for distribution and sale. This advantage allows the attachments to be made with one mold only in whatever quantities are needed.

The merit of the improvement is now clear. The attachment is a simple, inexpensive and effective appliance, because it can be easily assembled, will seal or open a bottle as the owner desires, and can be readily taken apart for cleaning merely by pulling the head and nozzle apart. Likewise the attachment can be trans-

ferred to another bottle as soon as one bottle is empty.

The end or base of the nozzle encircled by the flange 8 is made concave to form a recess or cavity 13, which is large enough to contain the ends of the ducts 4 and 6. The top 14 of the head is closed, except for the ports 5 and 7; and has the shape of a bulge or projection which conforms to the recess 13 and fits it snugly. Also the sides of the spout 3 are preferably flat above the base of the nozzle and the spout tapers somewhat from the outer end towards the base, as indicated at 15; so that the nozzle can be turned easily and readily separated from the head and reassembled therewith.

As indicated clearly in Figure 2 the part of the head having the openings 5 and 7 is dome-shaped, concave on its inner face and convex on its outer face, and the end of the spout 3 is recessed to fit the convex outer face of the dome-shaped end. This construction makes the head more elastic and it yields more readily when the spout 3 is attached to the head or separated therefrom.

It will be seen that the nozzle 3 has a sloping top with a relatively large duct 4 at one side or end to communicate with the opening 5 at one side of the dome-shaped part of the head 1, and with a small inlet duct at the opposite side of the nozzle in communication with the inlet 7 in the dome-shaped part of the head. The separation of the two ducts insures that when the bottle 10 is tilted, all the liquid will flow out of the duct 4 and none will reach the duct 6. The head 4 also has a flat seat within the flange 8, the end of the nozzle fitting against this seat with the opening 7 adjacent the inner edge of said seat.

Having described my invention, what I believe to be new is:

A removable pouring attachment for a container having a neck with an outlet opening at the end thereof, said attachment comprising a hollow head having one end open, being dome-shaped at the opposite end, and having a relatively large outlet port and a separate air inlet opening at opposite sides of said dome-shaped end, and an external rotatable nozzle having an end abutting said dome-shaped end of the head, the nozzle having a continuous smooth projecting circular flange surrounding its said end on its outer face and the head having a continuous smooth undercut bead on its outer surface, surrounding the dome-shaped end, with a smooth continuous circular inner edge surrounding and overlapping said flange to hold the nozzle in place, said bead being flexible to permit the nozzle to be dismounted from the head and yielding to allow the nozzle to be attached to the head, the nozzle having an inclined top with relatively large discharge duct opening through one end of said top, and a separate air inlet duct at the other end of the top, said ducts being movable into and out of alinement with said outlet port and air inlet opening respectively as the nozzle is rotated, the dome-shaped end of the head being convex on the exterior and concave on the interior, the nozzle having its end recessed and fitting the convex surface of the dome-shaped end, the head having a flat seat for said end of the nozzle between the flange and the dome-shaped portion, the inlet opening being adjacent the inner edge of said seat.

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