Oct. 5, 1954 H. A. SCHULER 2,690,852

POURING BOTTLE CAP

Filed July 9, 1951

Fig. 1

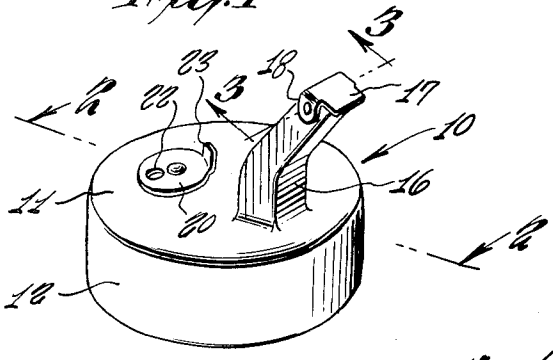


Fig. 3

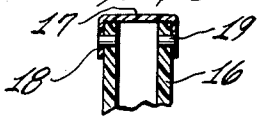


Fig. 2

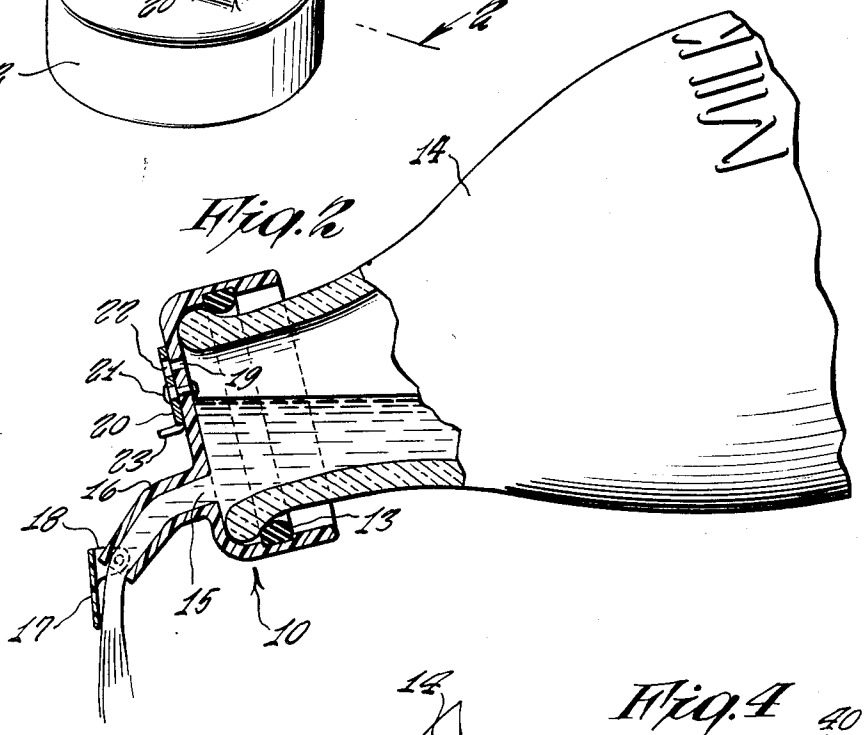


Fig. 5

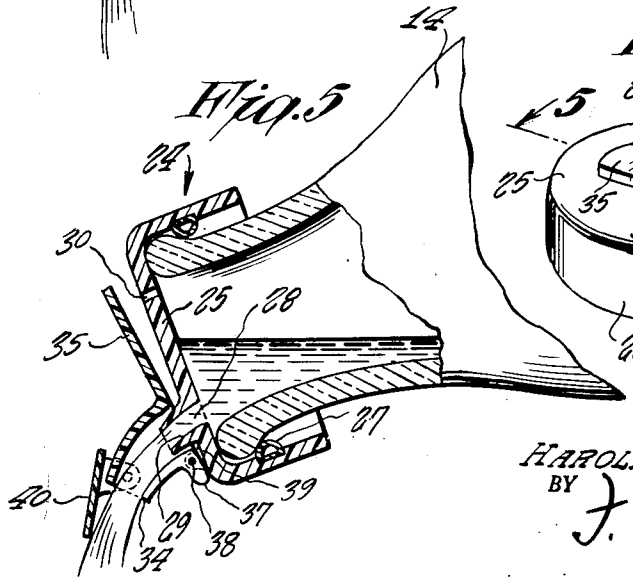
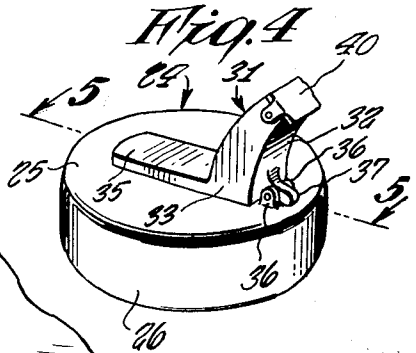


Fig. 4



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POURING BOTTLE CAP

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1 Claim. (Cl. 215—79)

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This invention relates to bottle caps, and more particularly to bottle caps provided with a pouring outlet and adapted to be substituted for the common paper closure of a milk bottle after the said closure has been removed. A cap of the type set forth in the present invention will not only permit of easy and immediate pouring of the contents of the bottle, but will also maintain the contents in a practically air-tight condition.

The above broad as well as additional and more specific objects will be clarified in the following description, wherein characters of reference refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended solely for the purpose of illustration, and that it is therefore neither intended nor desired to limit the invention necessarily to any or all of the exact details of construction shown except insofar as they may be deemed essential to the invention.

Referring briefly to the drawing, Fig. 1 is a perspective view of a bottle cap embodying one form of the present invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 and simultaneously showing partly in section and with parts broken away a milk bottle having the said bottle cap applied thereto, and further illustrating the utility of the said bottle cap.

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

Fig. 4 is a perspective view of a modified form of the bottle cap.

Fig. 5 is a view substantially similar to Fig. 2 but showing the cap of Fig. 4, in section on the line 5—5 of the latter, applied to the bottle in place of the cap of Fig. 1.

Referring in detail to the drawing, the numeral 10 indicates the bottle cap per se, shown in Figs. 1, 2 and 3. The cap 10 comprises the roof 11 and the depending flange 12. A suitable annular washer 13 is provided on the inside of the flange 12 for air-tight engagement of the cap on a bottle, such as the milk bottle 14, and simultaneously for the purpose of releasably locking the cap on the bottle.

Near the circumferential edge of the roof 11, an opening 15 is provided through the roof, and this opening may be of square or rectangular conformation, as well as circular or any other desired shape. A pouring spout 16 is formed integrally with the roof 11 and extends upward and outward from the roof, substantially as shown. The free end of the spout 16 is provided with a closure flap 17 which is provided with downwardly projecting ears 18, the latter being pivoted by means of pins 19 passing through opposed walls of the spout and thus pivoting the flap 17 on the end of the spout. It is thus apparent that when the bottle is in normally upright position, the flap 17 will be urged by gravity to cover the free end of the spout, as shown in Fig. 1, and that when the bottle is held in the pouring position shown in Fig. 2 gravity as well as the force of the liquid bottle contents will cause the flap to open. Thus, after pouring contents from the bottle, the flap will automatically close upon standing the bottle upright.

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A vent 19 is provided through the roof 11 near the opposite edge of the roof in diametrical alignment with the spout opening 15. A disc 20 is pivotally mounted on a pin 21 extending through the roof 11, in close surface contact with the roof and having a diameter such that the disc covers the vent 19. The disc, however, is provided with an opening or passage 22 therethrough which, by rotation of the disc, is adapted to become aligned or disaligned with respect to the vent 19. An upturned finger piece 23 integral with the disc permits of easy rotation of the disc.

The bottle cap shown in modified form at 24 in Figs. 4 and 5 comprises the roof 25, the flange 26, and the internal washer 27, the latter serving the same purpose as the washer 13 previously described. Again, near one edge of the roof 25, an opening 28 is provided through the roof, and an upwardly and outwardly extending curved stub spout 29 extends from the roof around the opening 28. A vent 30, corresponding to the vent 19 previously described and similarly positioned with respect to the spout opening in the roof, is likewise provided in the roof 25.

A unitary combined spout and vent flap 31 is provided in this modified form of the invention. The member 31 comprises a curved spout portion 32 tapering from a relatively large-dimensioned base 33 to a relatively smaller-dimensioned free extremity 34. The dimensions of the spout base 33 are sufficiently large to enable the same to fit freely and loosely over the stub 29, and the axial curvature of the spout 32 is of the same degree as that of the stub 29.

From the base 33 of the spout 32, a flat tongue 35 extends integrally from the rear wall of the spout. Spaced upstanding ears 36 are formed on the roof 25 forward of the opening 28 and in diametrical alignment with the openings 28 and 30. A relatively elongated finger 37 extends forward from the front wall of the spout 32 and

a pivot pin **38** passing through the ears **36** and the finger **37** near the base of the latter pivotally secures the member **31** to the roof **25** so that the outer end of the tongue **35** is positioned over the vent **30**. The bottom surface **39** of the finger **37** is flat and lies substantially in the plane of the bottom surface of the tongue **35**, and, as is apparent in Fig. 5, the said surface **39** is spaced from the surface of the roof **25** when the tongue **35** rests against the roof, that is, when the bottle is positioned upright, or nearly upright, the position of the member **31** in the latter case being illustrated in Fig. 4. It is further apparent in Fig. 5 that when the bottle is tilted for pouring, the weight of the member **31** will cause the same to swing about its pivot pin **38** the distance permitted by the normal distance between the bottom surface **39** of the finger **37** and the roof **25**, which is and need be only a very small distance, sufficient only to move the tongue **35** out from and clear of the vent **30**. Thus, the outer end of the finger **37** serves as a limit stop to the outward movement of the tongue **35**. A flap **40**, in all respects like the flap **17** previously described and for the same purpose, is provided on the free end of the spout **32**.

In the case of the pouring bottle cap shown in Figs. 4 and 5, it is apparent that normally, when the bottle is upright, the tongue **35** covers the vent **30** and the flap **40** closes the spout. Upon tilting the bottle for pouring, the member **31** will assume the pouring position shown in Fig. 5 and the flap **40** will of course open. Thus, the operations of pouring contents from the bottle and of restoring the bottle to the refrigerator are fully accomplished with one hand without the need to manipulate a vent flap, the vent being automatically closed upon restoring the bottle to upright position. The projection of the stub spout **29** into the spout **32** assures passage of the liquid through the latter.

Excepting possibly for the various pivot pins above mentioned, the entire bottle cap including all its parts are preferably made of a suitable plastic material of which a number of varieties are available on the market.

Obviously modifications in form or structure may be made without departing from the spirit or scope of the invention.

I claim:

A pouring bottle cap for a bottle comprising a roof having an opening therethrough near the front edge thereof and having a spout extending upward and outward therefrom around said opening, said roof having a vent therethrough positioned on an imaginary diameter in alignment with said opening near the rear edge of the roof, a second spout of greater lateral dimensions and greater length than said first spout, said second spout having a finger near the base thereof extending forward from the front wall thereof, ears extending upward from said roof forward of said opening, said finger being pivotally mounted between said ears, said second spout being positioned over and around said first spout, and means for normally closing said vent when the bottle is upright and for automatically opening the vent when the bottle is tilted forward comprising a tongue integral with and extending rearward from the base of said second spout and positioned over said vent.

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