Nov. 1, 1932. P. T. McAVOY 1,886,347

BOTTLE CLOSURE

Filed Feb. 26, 1931

Fig. 1.

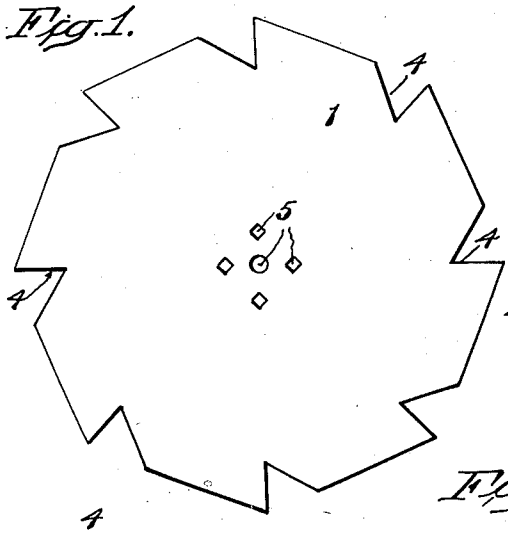


Fig. 3.

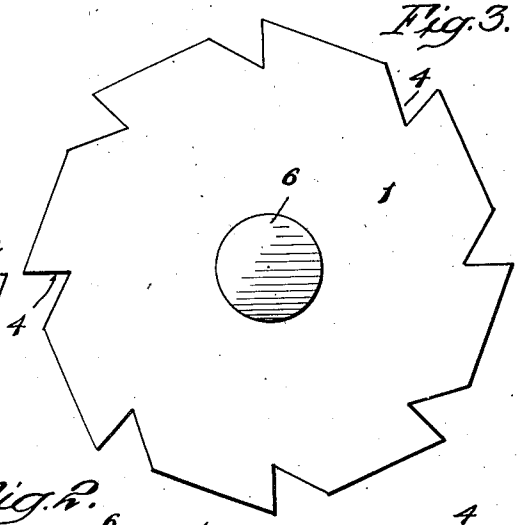


Fig. 2.

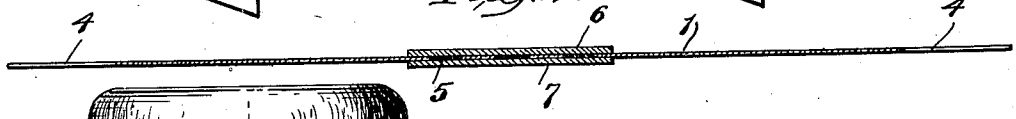


Fig. 4.

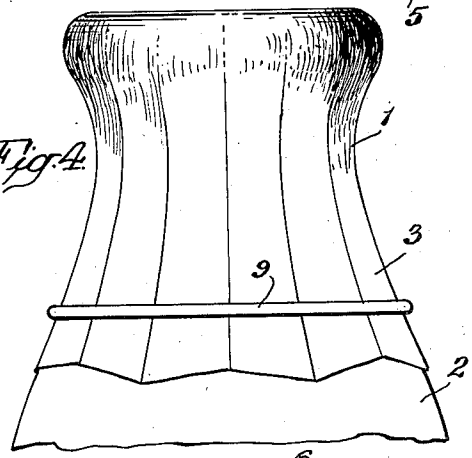


Fig. 5.

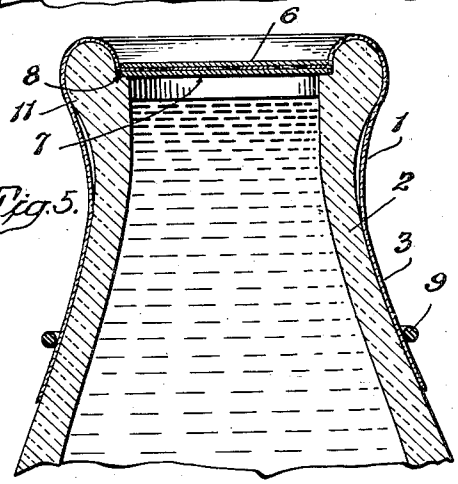
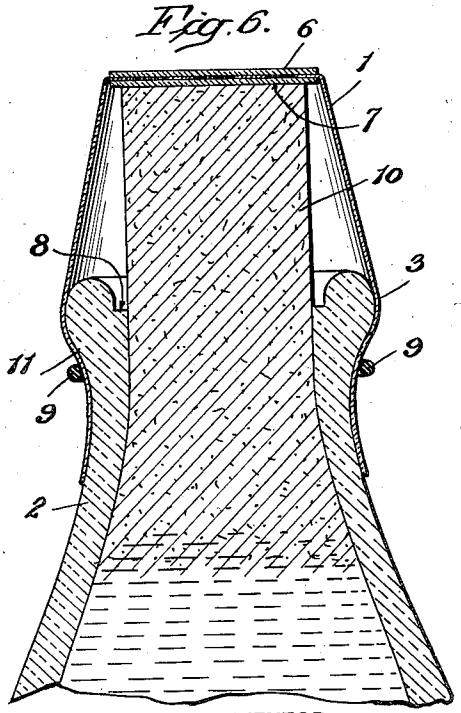


Fig. 6.



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UNITED STATES PATENT OFFICE

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BOTTLE CLOSURE

Application filed February 26, 1931. Serial No. 518,445.

This invention relates to an improvement in bottle closures, and particularly those intended for use in connection with milk bottles. The object of the invention is to provide a closure which will effectively prevent leakage of the bottle contents and which will afford greater sanitation under all conditions of use than is attained by the conventional paper closure caps in use at the present time. With the ordinary paper closure cap or disc, no protection for the rim or top of the bottle is afforded, since the soiled hands or gloves of the milkman and others come into direct contact with the bottle top. Consequently, when the milk is poured from the bottle it comes into immediate contact with those parts of the bottle top which have been handled and possibly subjected to contamination.

During freezing weather when expansion of milk causes the cap to be forced from its seat in the bottle neck, the frozen milk arises out of the bottle for a considerable distance above the bottle top and this extended part of the frozen milk is thus freely exposed to dirt, to lapping by stray dogs or cats and to other sources of contamination. With my invention this is prevented and the other shortcomings of the present-day type of milk bottle cap or closure are remedied. My improved closure not only protects the upper portion of the bottle from contamination by contact with the hands but it also protects the extended portion of the frozen milk from exposure during winter weather. Additionally, it forms a more effective liquid-tight covering than that in use at the present time.

In the embodiment of my invention shown in the accompanying drawing, Fig. 1 is a plan view of the sheet or blank from which the closure is formed; Fig. 2 shows the blank or sheet with the paper closure caps attached to the same; Fig. 3 is a plan view of the blank or sheet with the closure discs attached; Fig. 4 is a side elevation of the upper end or top of a milk bottle with my improved closure in position; Fig. 5 is a longitudinal sectional view of the structure show in Fig. 4; and Fig. 6 is a longitudinal sectional view of the top of the bottle, showing the frozen contents of the bottle forced upwardly yet fully enclosed by the upwardly protruded bottle closure.

In Fig. 1 of the drawing is shown a blank or sheet 1 which forms the body portion of my improved closure. This sheet is composed of any suitable inelastic, flexible, waterproof and preferably, but not necessarily, transparent material. I have found the transparent cellulose material commercially known as waterproof "Cellophane" excellent for the purpose. This Cellophane material is particularly adapted for the purpose since its transparency permits the contents of the bottle to be seen, it is thoroughly waterproof; is tough and flexible and possesses the desired slippery surface that is in direct contact with the face of the bottle, for a purpose to be hereafter set forth.

The blank or sheet 1 may be of any suitable shape or size to permit it being readily folded over the top of the bottle 2, so as to enclose and cover the bottle mouth and top and to form a downwardly dependent skirt-portion 3 which covers the outer face of the bottle neck and protects the same from the contact of human hands which handle the bottle before it reaches and is opened by the consumer.

To facilitate the folding of the sheet 1 about the top and neck of the bottle, it may be found desirable to notch or serrate the edge of the sheet as indicated at 4 in Fig. 1. This may or may not be necessary as the shape and size of the sheet employed is to a great extent dependent upon the shape and size of the bottle to which the closure is to be applied.

At 6 and 7 is shown a pair of cardboard closure discs, one of which is placed on opposite sides of the sheet 1 and the two discs are glued together with the sheet 1 between them, by an adhesive which passes through the apertures 5 provided in the sheet 1. One of these discs may be used instead of two as will be readily understood.

From the foregoing, the manner in which my improved closure is used will be readily understood. In Figs. 4 and 5 it is shown applied to a bottle, where it will be seen that

the sheet 1 completely covers the top of the bottle and has its skirt portion 3 contracted about the bottle neck and extending for a considerable distance down along the neck of the bottle. The connected paper caps or discs 6 and 7 are received upon the bottle seat 8 in the conventional way.

The closure is maintained in position on the bottle by means of a rubber band 9 which is preferably of circular cross-section or other similar resilient securing means which is applied over the skirt 3 of the closure near its lower end.

In freezing weather when the frozen milk 10 is expanded, as shown in Fig. 6 and is projected out of the mouth of the bottle, it tends to force the closure upward. Since the material of the closure has a smooth, slippery surface that is in contact with the smooth surface of the bottle, the closure, including the attached paper disc or discs, is moved bodily upward under the pressure of the frozen milk, substantially as shown in Fig. 6. The rubber retaining-member 9 being preferably of circular cross-section applies sufficient pressure to normally hold the closure in place, yet is sufficiently yielding in its pressure to permit upward movement of the closure under the pressure of the frozen milk. When the closure is moved upward under the pressure of the frozen milk 10 it usually carries the rubber band 9 upward with it until the band impinges against the under part of the bead or rim 11 provided on the bottle, as shown in Fig. 6, whereby further upward movement of the band is prevented. The circular cross-section of the band 9 permits the slippery Cellophane paper to slide easily under it, while it is prevented from upward movement by its abutment against the under side of the bottle bead or rim 11, and it merely turns over or rotates while the closure sheet is moved upward under it by the pressure of the frozen milk.

It will be seen that this bodily upward movement of the closure enables the end or mouth of the bottle to be covered or closed at all times, thus protecting that part of the frozen contents which is extended out of the mouth of the bottle by expansion in freezing. Also, even should the cover disc or discs be dislodged in handling the bottle, the Cellophane covering will still enclose the bottle mouth and prevent spilling of the contents.

What I claim is:—

1. A bottle closure composed of a sheet of flexible slippery-surfaced transparent material fitted over the top of a bottle and formed with a skirt portion extending downward on the neck of the bottle, and resilient means for holding the closure on the bottle neck, said resilient means permitting an upward shifting movement of the closure relative to it under the pressure of frozen contents of the bottle.

2. A bottle closure composed of a section of slippery-surfaced transparent sheet material folded over the top of a bottle and means for holding the closure thereon, said closure having an upward shifting movement relative to its holding means under the pressure of frozen contents of the bottle.

3. A bottle closure composed of a section of slippery waterproof sheet material folded over the top of a bottle and extending downward on the neck of the same, and securing means surrounding that portion of the closure located on the bottle neck, said securing means applying elastic pressure on the closure and permitting an upward sliding movement of the same beneath the securing means when receiving the pressure of the frozen contents of the bottle.

4. A bottle closure composed of a Cellophane sheet folded over the top of a bottle to close the mouth of the same, and a rubber retaining-ring applied to the bottle neck over the Cellophane sheet the rubber permitting the sheet to slide upward beneath it under the pressure of frozen bottle contents.

5. A bottle closure composed of a cardboard disc, a Cellophane sheet larger than the disc secured to the same and extending downward therefrom about a bottle neck, and a retaining-member holding the Cellophane sheet on the bottle, said retaining member permitting a bodily upward movement of the sheet and attached disc relative to the retaining member under the pressure of frozen contents of the bottle.

6. A bottle closure composed of a sheet of inelastic, transparent material adapted to fit over the mouth of a bottle and extend downward on the bottle neck, means for resiliently holding that part of the sheet which extends on the bottle neck, and a disc located on each side of the sheet, the discs being secured together with the sheet between them and seating in the mouth of the bottle.

7. A bottle closure composed of a sheet of Cellophane or a material of like characteristics folded over the top of a bottle to close the mouth of the same, said sheet when folded presenting a skirt portion extending downward on the neck of a bottle, and retaining means applied to said skirt portion to hold the folded sheet in place on the bottle, said means permitting a bodily upward shifting movement of the sheet from beneath the retaining means under the pressure of frozen contents of the bottle.

8. A bottle closure composed of a section of Cellophane material folded over the top of a bottle to close the mouth of the same and provided with a skirt portion extending downward on the neck of the bottle, and means for holding the skirt portion to the bottle but permitting upward shifting relative to such holding means.

PETER T. McAVOY.