E. J. WELCH.

CAP CLOSURE FOR BOTTLES.

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1,168,690.

Patented Jan. 18, 1916.

Fig. 3

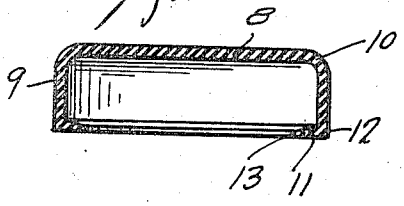


Fig. 4

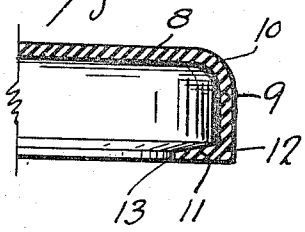


Fig. 1

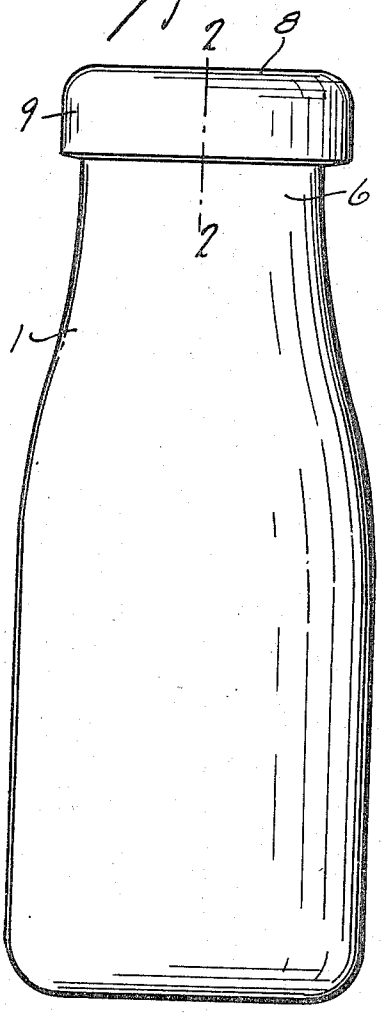
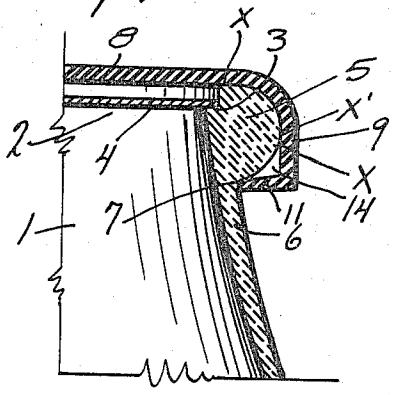


Fig. 2



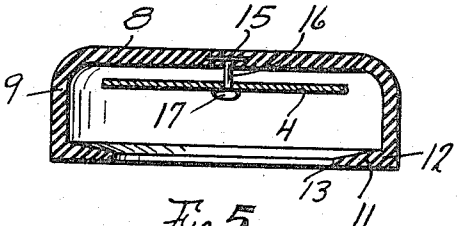


Fig. 5

Witnesses

H. E. Scantlebury

Chas. W. Hoffay

Inventor

Elizabeth J. Welch

By Herbert E. Smith

Attorney

UNITED STATES PATENT OFFICE.

ELIZABETH J. WELCH, OF SPOKANE, WASHINGTON, ASSIGNOR OF ONE-HALF TO THOMAS W. SOEVYN, OF SPOKANE, WASHINGTON.

CAP-CLOSURE FOR BOTTLES.

1,168,690. Specification of Letters Patent. Patented Jan. 18, 1916.

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To all whom it may concern:

Be it known that I, ELIZABETH J. WELCH, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Cap-Closures for Bottles, of which the following is a specification.

This invention relates to improvements in cap closures for bottles, and has to do more particularly with improvements in closures for milk bottles of that type having an external rounded bead about the mouth of the bottle and a recessed portion in the mouth of the bottle for receiving the usual disk cap.

One of the special objects of this invention is to provide a cap body which is not only designed to close the mouth of the bottle but also to embrace and grip the projecting bead surrounding the mouth, in such a manner as to form a practically air tight closure.

A further object of the invention consists in not only making the cap body of a form different from the form of the mouth portion of the bottle, but also to make the cap body of slightly reduced size with respect to the mouth portion so as to somewhat distort the cap body, and place the same under tension, when applied to the bottle, so as to cause the cap body to acquire a form complemental to the mouth portion of the bottle and tightly grip the latter.

A still further object of the invention, in some embodiments thereof, is to equip the cap body with a disk cap in such a manner as to protect the contents of the bottle from contact with the cap body.

My invention also includes a cap body which is so formed as to grip the mouth of the bottle at a plurality of spaced areas and in such a manner as to provide at least one air space between the points of engagement of the cap body with the bottle.

Further objects and features of the invention will be more fully described in connection with the accompanying drawing and will be more particularly pointed out in and by the appended claims.

In the drawing: Figure 1 is a view in elevation of a milk bottle to which is attached a cap body embodying one form of my invention. Fig. 2 is a sectional view on line 2—2 of Fig. 1, on an enlarged scale, showing the incorporation of a disk cap in combination with my improved cap body. Fig. 3 is a sectional view of the cap body removed from the bottle. Fig. 4 is an enlarged fragmentary sectional view of a portion of the cap body showing the normal contour thereof before it is applied to the bottle. Fig. 5 is a sectional view of the cap body removed from the bottle and illustrating the manner in which the disk cap is connected with the cap body.

Like characters of reference designate similar parts throughout the different figures of the drawing.

As illustrated, the device of my invention is shown applied to a milk bottle 1, the mouth 2 of which is provided with an annular recess 3, to receive a disk cap 4. Adjacent to and exteriorly with respect to the mouth 2, the bottle is provided with a rounded bead 5 which merges abruptly into the neck 6, as indicated at 7.

My improved closure means comprises a cap body having a substantially flat mouth covering portion 8 provided with a depending flange 9. The flange 9, when not under tension, is substantially cylindrical in form, the same presenting an annular wall which is straight, perpendicularly to the top of the cover. The flange 9 junctures with the flat covering portion 8 by a fillet 10 which is of considerably shorter radius than that of the beaded portion 5 so that it may be said that the cap body is of a contour different from the form of that part of the bottle to which it is designed to be applied. Furthermore, the internal diameter of the flange 9 is sufficiently reduced with respect to the greatest diameter of the beaded portion 5, so that when the cap body is applied thereto it will be somewhat deformed or distorted so as to cause the substantially cylindrical-like flange 9 to assume, as regards its upper portion, the rounded contour complemental to bead 5. Thus by placing the cap body onto the bottle, the former is placed under tension to insure a firm fit against the exterior of bead 5. Such deformation however will to all practical purposes only extend from points approximately designated at x—x, the lowermost point of engagement being slightly below the point of greatest diameter of bead 5, as indicated at x'. Thus

it will be seen that there can be no tendency of the cap to spring off from the mouth of the bottle after once being applied thereto.

The improved cap body is formed of a suitable yielding material, preferably non-odorous rubber.

As a further feature of the invention, the flange 9 is provided with an inwardly extending rim 11, which is preferably tapered from its base 12 toward its edge 13 so that the latter will be relatively thin. The function of this rim is to engage the bottle neck at the juncture of the latter with the projecting bead, at 7, as more clearly shown in Fig. 2. Now the distortion or deformation to which the cap body is subjected when applied to the bottle does not extend appreciably below *x* and it will be seen that the flange 9 and the rim 11, form with a portion of the bottle, an air space 14. This air space functions to effectively seal the bottle against any ingress whatsoever when the cap is in place. This is especially true in effecting a liquid tight closure of the bottle, and because of the tension under which the cap is placed in the distortion resulting from its attachments to the bottle, it will be seen that the closure means is also air tight as far as a closure of this nature can be. Furthermore, when the cap is attached, it produces an advantageous though slight suction so as to materially reduce the volume of air ordinarily between the level of the contents and the cap. By such reduction, infection or any deleterious action on the surface cream is positively avoided.

In some embodiments of my invention I employ a disk cap 4, which is adapted to seat in the recess 3 so that if it is desired to prevent contact of the contents with the cap body, this can be done, I preferably provide means for connecting the disk cap with the cap body and if desired such means may be in the form of a tip cast upon the cap body but I have herein shown such means in the form of a button-like attaching element having a flange 15 embedded in the cap body. A stem 16 projects downwardly through the disk cap 4 and a head 17 loosely supports the disk cap 4 in position. It will be seen that by downwardly flexing the covering portion 8, the disk cap 4 may be readily sprung into the recess 3.

It is believed that the advantages and utility of my invention will be fully understood from the foregoing description, and while I have herein shown and described one specific form of my invention, I do not wish to be limited thereto except for such limitations as the claims may import.

I claim:—

1. A cap designed to fit over the mouth of a beaded bottle comprising, a cap body of yielding material having a substantially flat covering portion and a cylindrical flange depending therefrom, said flange terminating in a rim at substantially right angles to said flange for engagement with its edge against the neck of the bottle below the bead, said flange having an internal diameter sufficiently reduced with respect to the external diameter of the beaded portion of the bottle to distort said flange from its normal contour to a form complemental to the beaded portion of the bottle to fit closely against the upper portion of the latter, the lower portion of said flange and said rim forming with the bottle an air space between the points of close engagement of the flange with the beaded portion of the bottle and the point of edge engagement of said rim with the neck of the bottle, substantially as described.

2. In a closure for bottles having beaded and disk recessed mouth portions, a closure fitting over the mouth of the bottle, a disk cap seated in said recess and disposed in subjacent spaced relation from said closure, and attaching means loosely connecting said disk with said closure and comprising a stem having a head embedded in said closure and stem projecting through said cap and having a head engaging the bottom of the latter, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELIZABETH J. WELCH.

Witnesses:

THOS. W. SOEVYN,

MARTIN J. WELCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."