A. D. RAY.

BOTTLE CLOSURE.

APPLICATION FILED JAN. 11, 1915.

1,153,518.

Patented Sept. 14, 1915.

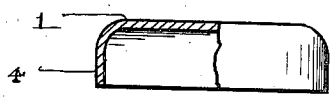


Fig. 1.

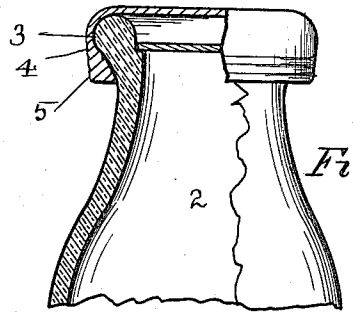


Fig. 2.

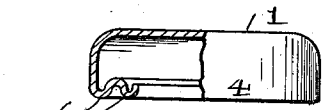


Fig. 3.

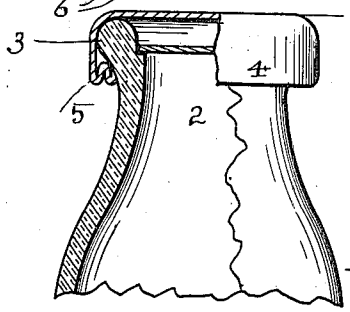


Fig. 4.

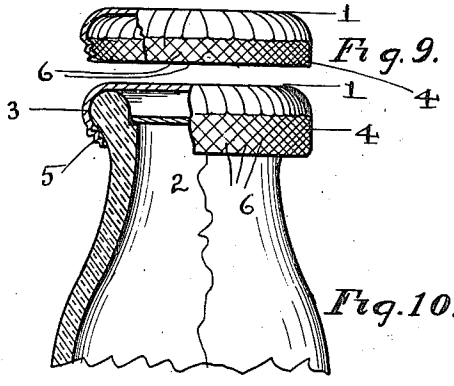


Fig. 10.

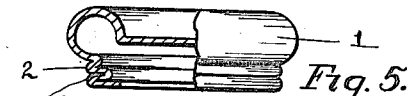


Fig. 5.

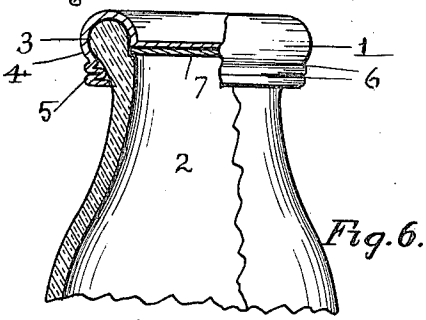


Fig. 6.

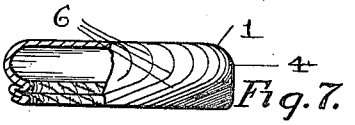


Fig. 7.

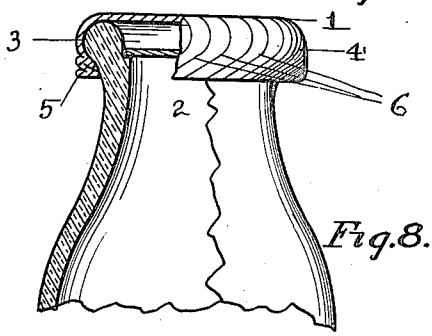


Fig. 8.

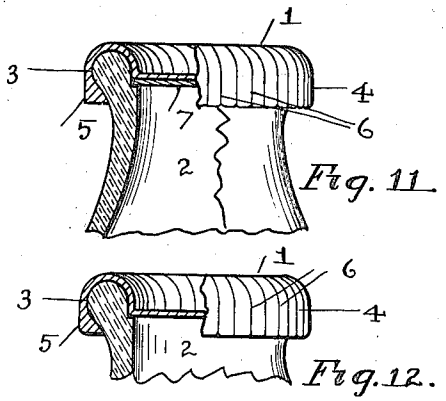


Fig. 11.

Fig. 12.

WITNESSES:

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his ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT D. RAY, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-FOURTH TO CLARENCE E. BIGELOW, OF GRAND RAPIDS, MICHIGAN.

BOTTLE-CLOSURE.

1,153,518. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed January 11, 1915. Serial No. 1,485.

To all whom it may concern:

Be it known that I, ALBERT D. RAY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Bottle-Closures, of which the following is a specification.

My present invention relates to bottle closures, and its object is to provide an improved sanitary closure for milk bottles and the like, which may be securely attached to the bottle and whereby dust, dirt, etc., may be excluded therefrom. This and any other objects appearing hereinafter, are attained by, and the invention finds preferable embodiment in, the devices hereinafter described and illustrated by the accompanying drawings, in which:—

Figure 1 is a side view, partly in section, of a form of my bottle closure; Fig. 2 is a similar view of the same applied to the bottle; Fig. 3 is a like view of a modified form of my bottle closure; Fig. 4 is a similar view of the same applied to the bottle; Fig. 5 is a like view of a second modified form of my bottle closure; Fig. 6 is a similar view of the same applied to the bottle; Fig. 7 is a like view of a third modified form of my bottle closure; Fig. 8 is a similar view of the same applied to the bottle; Fig. 9 is a like view of a fourth modified form of my bottle closure; Fig. 10 is a similar view of the same applied to the bottle; Fig. 11 is a like view of a fifth modified form of my bottle closure; and Fig. 12 is a similar view with the disk closure omitted.

My bottle closure consists of a cap 1 adapted to close a bottle 2 having an annular neck bead 3. This cap is of suitable non-metallic material, as paper, and has a downwardly-extending flange portion 4 receiving the neck of the bottle and extending below the bead. The portion of said flange thus below the bead is now re-formed or "upset"—*i. e.* thickened by a sufficient compressing force,—to form a ring 5 on the bottom portion of the flange, around the bottle's neck and below and engaging the bead, such ring being much more rigid than the flange before such "upsetting" process. It will be seen that by this process the cap is securely held in place. The cap may be formed plain as shown in Fig. 1, or with crimps or folds 6 as shown in other views. These crimps conduce to a proper and uniform shaping of the ring 5 by the upsetting process. The crimps may be variously disposed: In Fig. 3 they are horizontal, whereby the mouth or bottom of the cap may be distended to pass over the bead; in Fig. 5, they are arranged one above another; in Fig. 11 the crimps are vertical on the flange; and in Fig. 7, they are disposed helically or diagonally as shown. It will be seen that as thus arranged, the mouth of the cap may be distended to pass over the bottle bead, and that thereupon it will through its own elasticity contract to engage below the bead and will thus hold in place without "upsetting"; and further, that this formation of the crimps conduces to the upsetting process whether effected by a force exerted from below, or from the side or in a rotary direction; in Fig. 9 the crimps are disposed helically in opposite directions so as to intersect each other. A suitable adhesive may be applied to the flange, preferably on the outside, to hold the re-formed or "upset" flange securely in such re-formed or "upset" condition. An ordinary disk bottle closure 7 may be employed in connection with my device.

Not confining myself to details of construction shown or described, I claim:—

1. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic flange adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead.

2. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic flange adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead, said flange being coated with an adhesive adapted to retain the flange in said upset condition.

3. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic crimped flange adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead.

4. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic crimped flange adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead, said flange

being coated with an adhesive adapted to retain the flange in said upset condition.

5. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic flange with helically-disposed crimps and adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead.

6. A bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending non-metallic flange with helically-disposed crimps and adapted to receive the bottle's neck and upset or thickened by compression around the bottle's neck and below the bead, said flange being coated with an adhesive adapted to retain the flange in said upset condition.

7. For a bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending flange with helically-disposed crimps and adapted to receive the bottle's neck and to be contracted below the bead.

8. For a bottle having an annular neck bead, a bottle-closing cap having a downwardly-extending flange with helically-disposed crimps and adapted to receive the bottle's neck and to be contracted below the bead, said flange being coated with an adhesive adapted to retain the flange in said contracted condition.

In testimony whereof I have hereunto set my hand in presence of subscribing witnesses.

ALBERT D. RAY.

Witnesses:
CYRUS W. RICE,
CLARENCE E. BIGELOW,
MARION A. THOMPSON.