May 9, 1933. C. A. MacCORDY 1,908,037

BOTTLE CAP

Filed Aug. 12, 1929

FIG. 1.

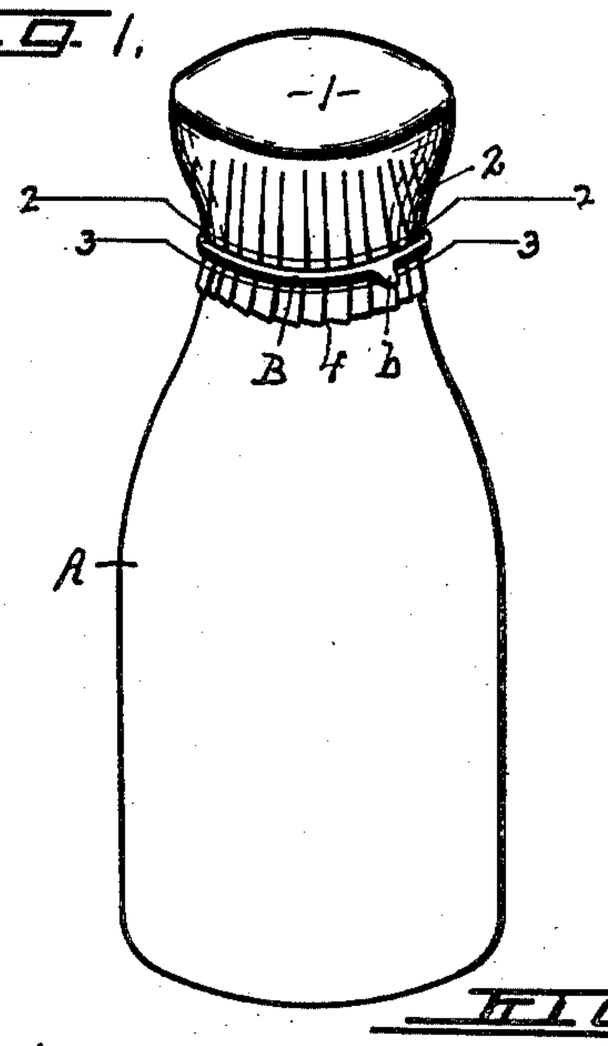


FIG. 2.

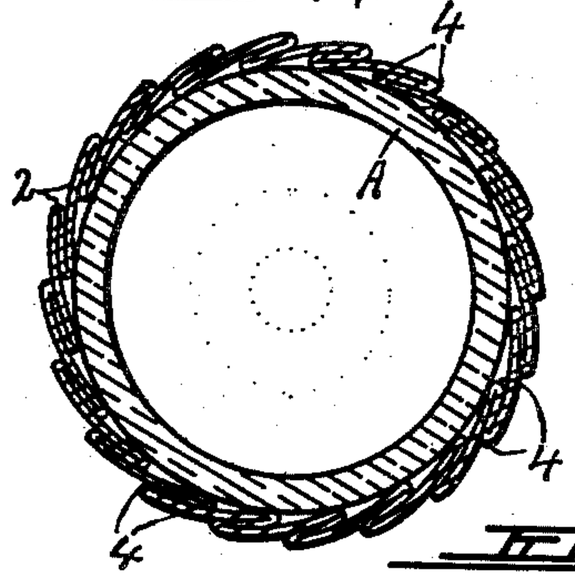


FIG. 3.

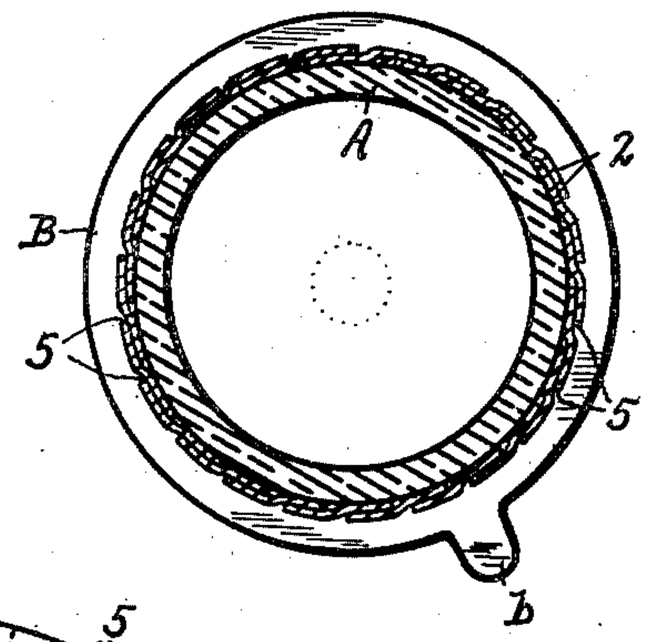


FIG. 4.

FIG. 5.

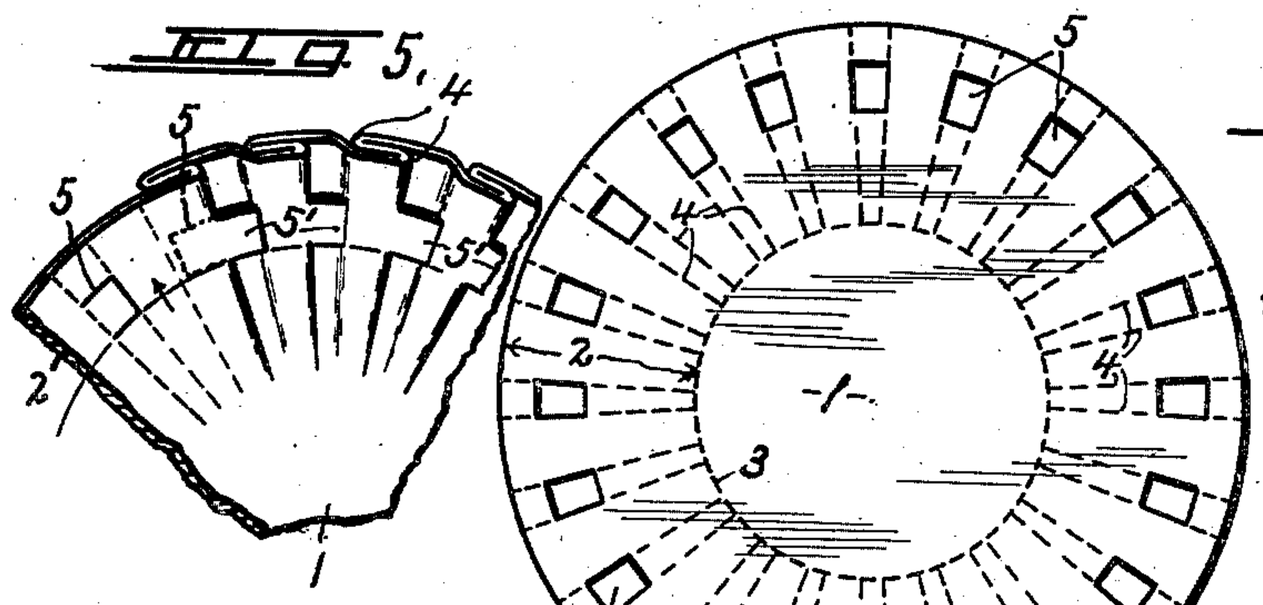
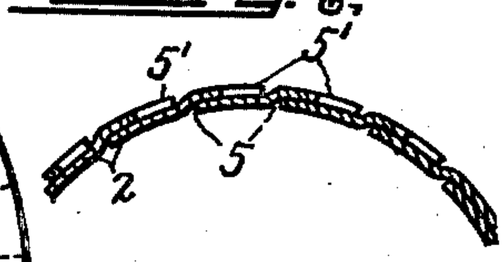


FIG. 6.



WITNESS

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Patented May 9, 1933 1,908,037

UNITED STATES PATENT OFFICE

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BOTTLE CAP

Application filed August 12, 1929. Serial No. 385,170.

This invention relates to sealing device for milk bottles and analogous containers and refers more particularly to a bottle cap of paper or equivalent material adapted to be placed over and upon the mouth of the bottle and provided with a flexible skirt to be crimped or folded around the neck of the bottle below the top bead by means of a retaining ring or band to hold the cap in operative position in a manner somewhat similar to that set forth in my pending application, Serial No. 247,097, filed January 16, 1928.

The skirts of these caps are preferably scored radially at regular intervals throughout their lengths from their marginal edges inwardly toward the center of the cap and subsequently folded along the score lines to permit the skirts to be contracted closely around the neck of the bottle to be held in that position by a retaining ring, cord or equivalent fastening means.

The material from which the cap is made is necessarily of sufficient thickness and tenacity to withstand the treatment to which it is subjected both in its formation and application to the bottle and, when applied to the container, should hermetically seal the same against the entrance of dust, external air and other foreign matter.

The main object of the present invention is to provide the intermediate layers of the several folds of the skirt with circumferentially alined apertures or openings of sufficient size and shape to permit the outer and inner layers of each fold to be brought into close contact with each other and therefore into closer relation to the neck of the bottle when secured in place by the retaining means and thereby to secure a more perfect seal than has heretofore been practiced with this type of cap.

In other words I have sought to reduce the thickness of the skirt at the line of application of the retaining band or ring therewith so as to obtain a more perfect sealing of that portion of the skirt against the neck of the bottle than would be possible without the perforation.

Other objects and uses relating to specific parts of the device will be brought out in this following description.

In the drawing:—

Figure 1 is a perspective view of a bottle with my improved cap mounted thereon.

Figures 2 and 3 are enlarged sectional views taken in the planes of lines 2—2 and 3—3, Figure 1.

Figure 4 is a face view of the detached cap before folding the skirt thereof.

Figures 5 and 6 are respectively a perspective view and a sectional view of portions of the skirt of a modified form of cap.

As illustrated the cap comprises a circular disk of paper or equivalent material having a relatively stiff circular central portion —1— and a flexible skirt —2— integrally united to the central portion —1— along a circular score line —3— and provided with a plurality of pairs of radial score-lines —4— in uniformly spaced relation circumferentially and extending inwardly from the marginal edge of the skirt to the circular score line —3—.

The spacing of the radial score lines —3— of each pair is slightly less than the spacing of the several pairs, the segment between the score lines of each pair being provided with an aperture or opening —5— (preferably rectangular) extending from one score line to the other and arranged nearer to the marginal edge of the skirt than to the circular score line —3— so that the entire series of openings will be in a circular row equal distances from the center of the cap for a purpose presently described.

When the cap is applied to the container the skirt —2— will be folded along the lines —4— and therefore along opposite sides of the openings —5— so that the outer folds

will overlap in one direction upon the inner folds, thereby bringing the apertured segments or intermediate layer of each fold between the inner and outer layer of the same fold and also causing the outer and inner folds to cover and close opposite ends of the openings.

It will also be observed that this folding operation will bring the portions of the inner and outer layers of each fold adjacent the openings into direct and close contact with each other through the opening thereby reducing the thickness of the skirt along the line of the openings by at least the thickness of one of the layers so that when the skirt is contracted along said line by means of a ring as —B— or equivalent clamping or tightening device the outer and inner layers of the adjacent portions of the skirt will be firmly compressed against each other and the inner layer firmly pressed against the neck of the bottle.

Under these conditions the engagement of the skirt with the neck of the bottle will be practically continuous and will effectively seal the cap on the bottle against the entrance of air, dust and other foreign matter while the ring —B— will serve to firmly hold the cap against accidental displacement.

The ring —B— is preferably made of more or less fragile cast metal similar to that shown in my pending application referred to and is provided with a finger-piece —*b*— projecting radially therefrom to serve as a convenient handle by which the ring may be broken when desired to permit the removal of the cap and when thus broken prevents its reuse.

After the sealing ring —B— has been broken the paper cap retains its integrity and may be reused as a temporary closure for the container or, by reason of its negligible cost, may be thrown away.

The folds of the skirt of the cap are preferably formed by the application of the mold-sections thereto immediately preceding the casting of the ring —B— around and upon the skirt after which the mold sections are removed and the skirt is retained in its folded condition upon the neck of the bottle by the ring.

In Figures 5 and 6 the openings —5— are formed by cutting through the skirt around three sides of the opening leaving the fourth integrally united thereby forming the tabs —5′— which, when the marginal edges are folded as shown in Figures 5 and 6, causes the tabs —5′— to over lap upon the adjacent outer surfaces of the skirt so that there will be two thicknesses only of the skirt along the line of the openings —5—, the free ends of the tabs terminating short of the adjacent folds so as to avoid more than two thicknesses of the skirt along the line of the openings.

What I claim is:—

A bottle cap provided with a flexible skirt having its marginal edges folded at regular spaced intervals in the direction of its length and the intermediate layer of each fold provided with an aperture to permit the adjacent portions of the outer and inner layers to be brought into close contact through the perforations.

In witness whereof I have hereunto set my hand this 7th day of August, 1929.

CHARLES A. MacCORDY.