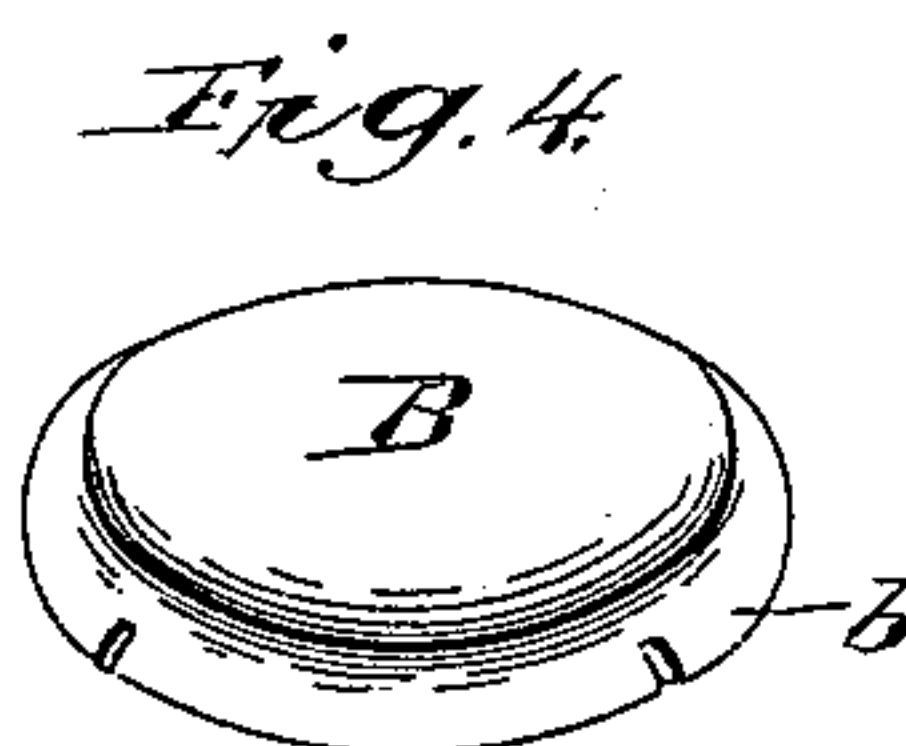
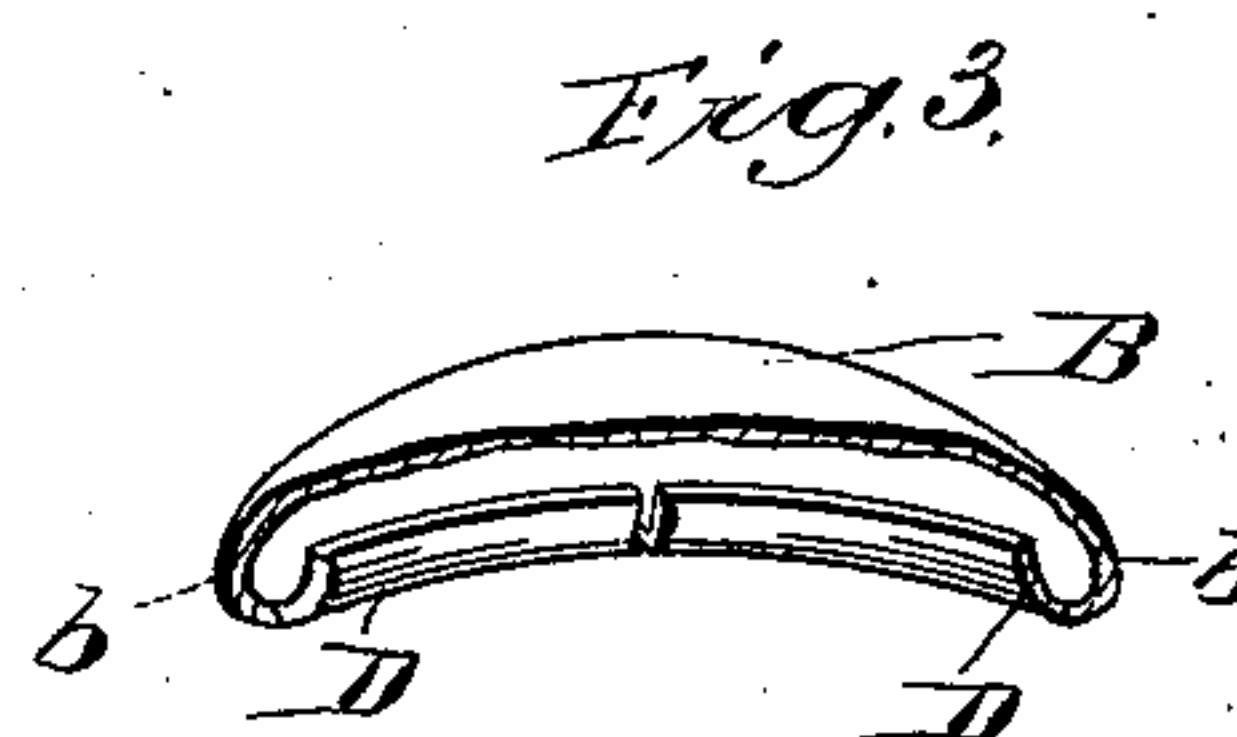
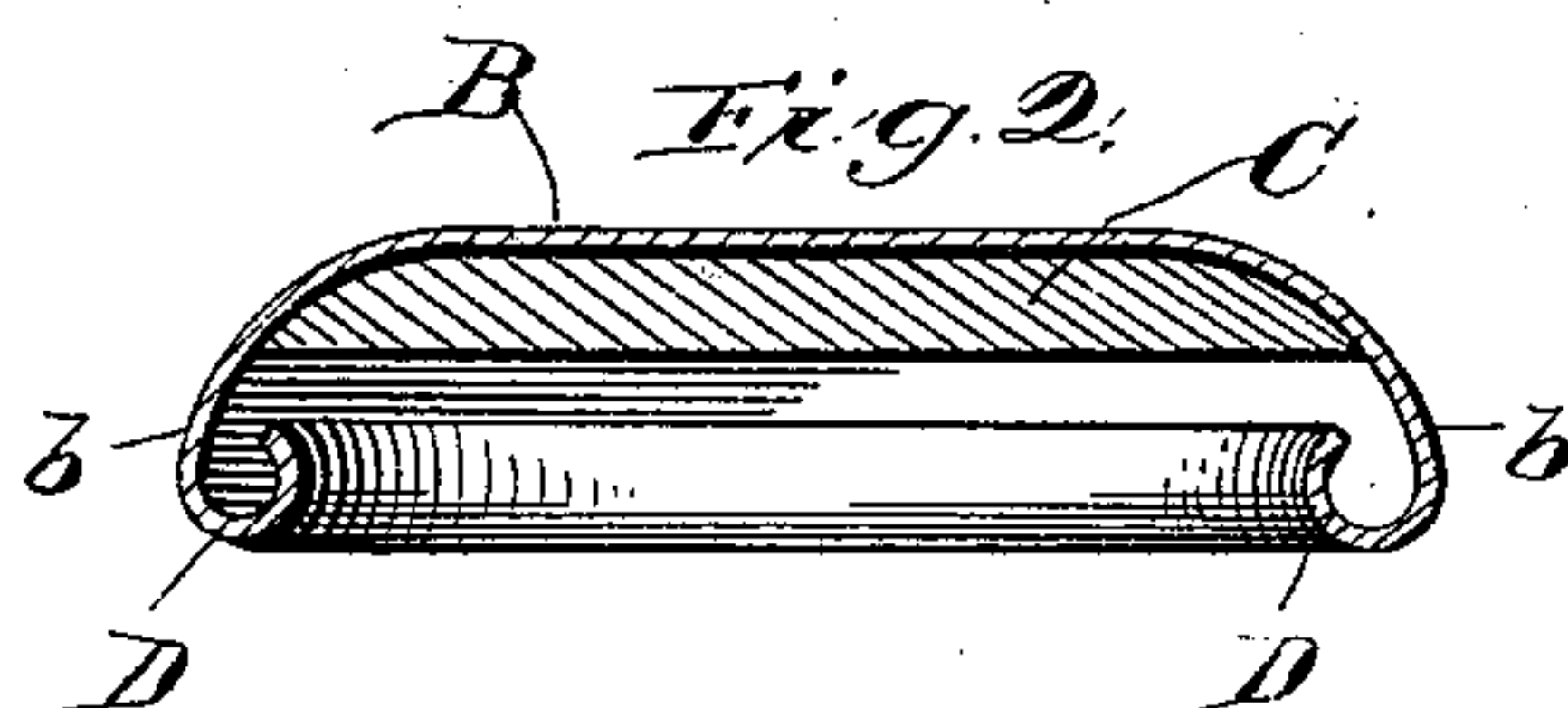
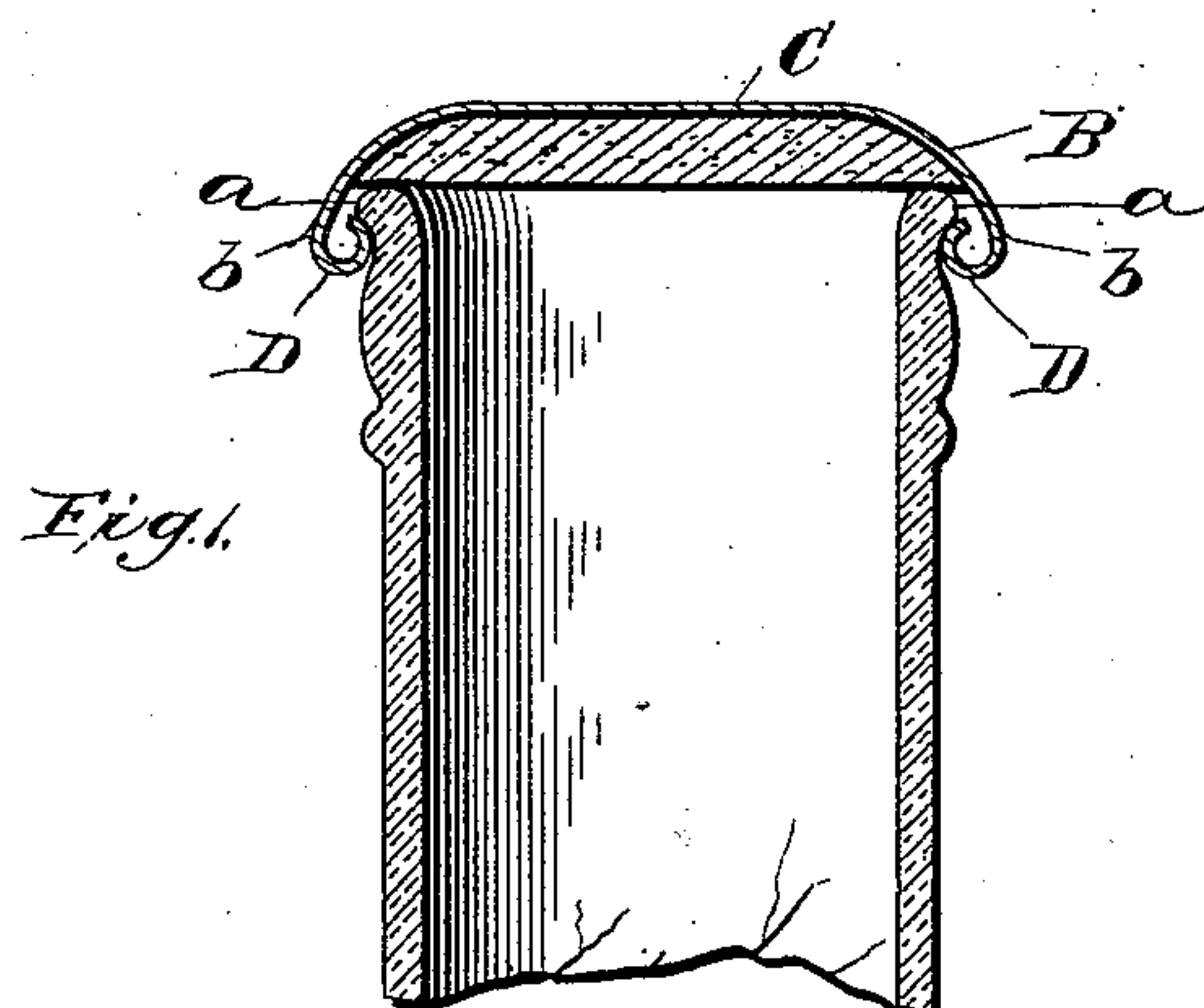


(No Model.)

R. FLANIGAN.  
CLOSURE FOR BOTTLES.

No. 521,788.

Patented June 26, 1894.



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# UNITED STATES PATENT OFFICE.

ROBERT FLANIGAN, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF  
TO J. S. DETRICK, OF SAME PLACE.

## CLOSURE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 521,788, dated June 26, 1894.

Application filed December 14, 1893. Serial No. 493,648. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT FLANIGAN, of the city of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Closures for Bottles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to that class of closures adapted more especially for use on bottled beer and beverages, in the consuming of which the closure is usually destroyed or removed and lost, while the bottle is preserved, and hence it becomes highly desirable to provide a very simple and cheap closure, but one which will at the same time form a secure and tight fastening.

The invention consists in certain novel details of construction and combinations and arrangements of parts all as will be now described and pointed out specifically in the appended claims.

It has been heretofore proposed to employ a bottle having a suitable lip-flange or annular enlargement around the mouth with a cap adapted to fit over the mouth of said bottle and around the enlargement, the downwardly extending portion of the cap being crimped to form inwardly extending projections for co-operation with the enlargement to hold the cap in place, and a disk of sealing material, such as cork being placed within the cap to form an air tight closure. Such devices in actual use have been found inefficient, the difficulties being due to the fact that there is little, if any latitude for inequalities in the conformation of the bottle mouth and enlargement, thus making it impossible to fit the closure accurately, especially as it is found to be practically impossible to obtain bottles which are strictly accurate and uniform in their conformation.

One of the main objects of my invention is to overcome this difficulty and further, to provide for the use of the closure upon bottles differing slightly in size.

Referring to the accompanying drawings:  
Figure 1 is a vertical section through a bottle

and closure constructed in accordance with my invention. Fig. 2 is an enlarged detail section through the closure itself. Fig. 3 is a perspective view of a closure and Fig. 4 a detail perspective showing the beaded flange slitted to provide for a wider range of elasticity than can be secured with the construction illustrated in Figs. 1 and 2.

Like letters of reference in the several figures indicate the same parts.

The bottle A in the accompanying drawings, it is obvious may be of any of the ordinary or of any preferred form, it only being essential that it be provided with a lip flange or enlargement *a* on the outside near the mouth, or that it be so conformed at this point as to afford an under cut bearing surface beneath which the closure may grip.

A cap B preferably struck up from sheet metal is provided for fitting over the mouth of the bottle, and within it, there is located a sealing diaphragm or washer C of cork or similar somewhat elastic substance, which will form a water and air tight closure by being pressed against the mouth of the bottle. The downwardly flanged portion of the cap lettered *b* is at the lower edge, beaded, the flange being turned inward and then outward to a point in proximity to but not touching the inner surface of the part *b*. The effect of this is to form an inwardly turned opened bead D, which constitutes a gripping ledge adapted to co-operate with the undercut of the lip flange on the bottle and retain the cap in position. By beading the downwardly extending portion or flange of the cap, it will be seen that I am enabled to secure a somewhat elastic bearing against the enlargement on the bottle, and hence it is not absolutely necessary to slit or break the continuity of the flange or bead at all, although it is desirable in some instances to do so, as illustrated in Fig. 3. The rounded inner surface of the bead co-operates with the rounded under cut of the projection on the bottle and forms a long drawing surface so to speak, that is to say, as the smallest diameter of the bead passes the largest diameter of the projection on the bottle, the elasticity of the bead will cause the same to contract and in doing so,



will draw the body of the cap down and the tendency at all times will be to hold the cap tightly in place. Where it is desirable to have a greater range of lateral elasticity, the body of the flange as well as the bead may be cut vertically, as illustrated in Fig. 3, or the bead alone may be slitted or cut as illustrated in Fig. 4. The latter form gives a somewhat greater range of vertical elasticity and enables the device to conform more readily to inequalities in the vertical thickness of the lip-flange or of the sealing disk located within the cap as well as a wider range of elasticity in a lateral direction. The solid downwardly extending flange affords a firm support and limits the movement of the beaded portion so as to prevent any undue strain or setting of the metal constituting the bead.

The whole device it will be seen is extremely simple and use demonstrates the fact that it will form an exceedingly strong closure, is not liable to leak or be knocked off by accident or otherwise in use.

Having thus described my invention, what I claim as new is—

1. The combination with the bottle having the undercut near its mouth, of the integral metallic cap having the downwardly extending flange fitting around the bottle mouth, and turned back upon itself at its lower edge to form a hollow bead, rounded on its inner surface, cooperating with the undercut in the

bottle, and the sealing disk within the cap; substantially as described. 35

2. The combination with the bottle having the under-cut near its mouth of the integral cap having the downwardly extending flange, fitting around the bottle mouth with the inwardly beaded lower edge cooperating with the under-cut on the bottle, the upwardly extending edge of said beaded portion being turned out, into proximity to, but not in contact with the inner surface of the body of the flange, and the sealing disk in said cap; substantially as described. 40 45

3. A closure for bottles consisting of the integral cap having the downwardly extending flange formed with a hollow bead at its lower edge, the beaded portion formed with a rounded inner surface and being slitted vertically to provide for a greater range of elasticity and the sealing disk within said cap; substantially as described. 50

4. A closure for bottles consisting of the integral, metallic cap having the downwardly extending flange with the inwardly beaded lower edge, the upwardly extending edge of said beaded portion being turned out into proximity to, but not in contact with, the surface of the body of the flange; substantially as described. 55 60

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