

L. KALLING.
SEALING CAP FOR BOTTLES.
APPLICATION FILED DEC. 2, 1908.

922,286.

Patented May 18, 1909.

Fig. 1.

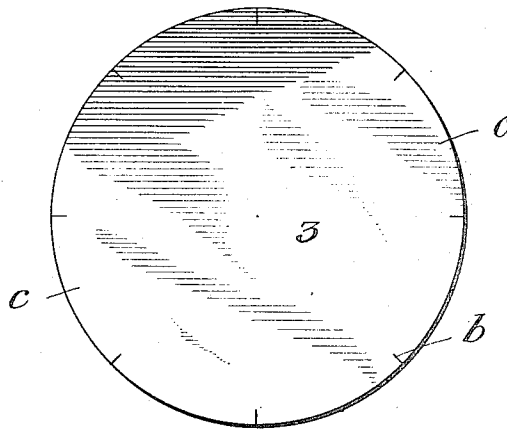


Fig. 2.

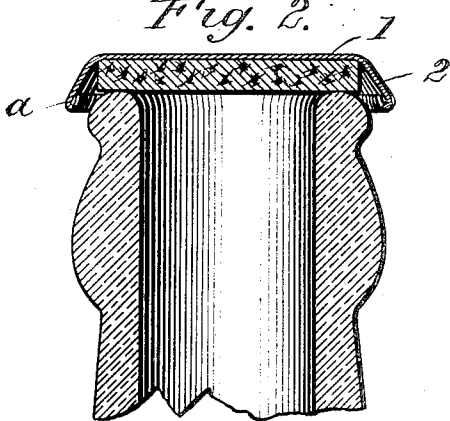


Fig. 3.

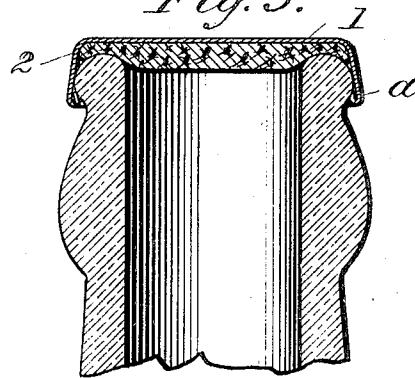


Fig. 4.

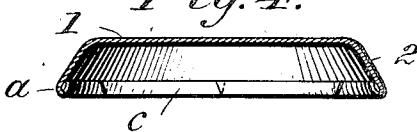
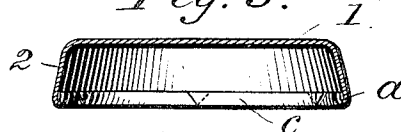


Fig. 5.



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UNITED STATES PATENT OFFICE.

LEWIS KALLING, OF BALTIMORE, MARYLAND.

SEALING-CAP FOR BOTTLES.

No. 922,286.

Specification of Letters Patent.

Patented May 18, 1909.

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To all whom it may concern:

Be it known that I, LEWIS KALLING, of the city of Baltimore and State of Maryland, have invented certain Improvements in Sealing-Caps for Bottles, of which the following is a specification.

This invention relates to certain improvements in that class of sealing caps for bottles, in which the edge of the skirt is provided with an inturned bead or flange which in the sealing operation is forced slightly under the locking shoulder of the bottle head to hold the cap firmly in place.

With sealing caps of the construction above described, the sealing operation is easily and satisfactory performed, but owing to the rigidity of the metal where formed into the bead, the caps are not easily dislodged from the bottle, and in some cases, the force required to effect their dislodgment is sufficient to break the bottle.

The object of the present invention is to give to the inner wall of the bead or that portion of the same which is in locking contact with the shoulder of the bottle head, a distensibility which is in excess of that due to the stretching of the metal, thus reducing in the skirt of the cap, a resistance to distention in the uncapping operation, to practically that offered in a cap having a skirt which is unprovided with a bead, and that without lessening the effectiveness of the bead as a locking element of the cap.

In view of the above described object, I produce in the circumference of the circular blank from which the improved sealing cap is produced, a multiplicity of preferably, radial slits or sheared cuts, which extend inward from its edge to a distance which is less than the width of the inturned portion of the bead or flange subsequently formed. By this expedient in the stamping process in which the bead is produced, and the capping operation in which the skirt and bead are reduced in diameter, the metal of the inner wall of the bead, instead of being wrinkled or compressed, which in either case hardens it, is only slightly affected, the surplus material being taken up by the crossing of the adjoining ends of the segments formed in slitting the circumference of the blank as before stated.

In the further description of the said invention which follows, reference is made to

the accompanying drawing, forming a part hereof, and in which,—

Figure 1 is a flat view of the slitted blank. Fig. 2 is a vertical central section of an unsealed bottle head with a sealing cap resting thereon. Fig. 3 is a similar view of the bottle head, and the sealing cap which is affixed thereto. Fig. 4 is a vertical section of the cap alone, showing the same in the condition in which it appears in Fig. 2 and illustrating the lapping or crossing of the adjoining ends of the segments found in the inner portion or wall of the bead, and Fig. 5 is a similar view with respect to Fig. 3, and shows that the crossing of the ends of the segments, has been increased in the capping operation.

Referring now to the drawing, 1 is the crown of the cap, 2 the skirt and *a* the bead. The slits in the edge or circumference of the blank 3 are denoted by *b*, and the segments produced by slitting the blank, by *c*. In order that the slits *b* will not weaken the skirt proper in the stamping or capping operations, or cause leakage, they are limited in length so as to end at the point where the practically straight portion of the inner wall of the bead begins to round out toward the skirt proper, as shown in Figs. 2, 3 4 and 5. By further reference to Figs. 4 and 5 which as before stated represent respectively, the shape and condition of the sealing cap when completed, and when the same is properly affixed to a bottle, it will be seen that the adjoining ends of the segments *c* are crossed or lapped, a condition due, in the first place to the reduction in diameter of the blank as the same is transformed into a sealing cap; and secondly, to its contraction in diameter in the sealing operation in which the crossing is increased.

It will be understood that in crossing the ends of the segments of the inturned portion of the bead of the cap, as described, the material of the skirt is thickened at several points, and when an annular capping tool is forced over the cap in the sealing operation, these points are brought into locking contact with the shoulder of the bottle, the portions of the segments between the crossed ends, being comparatively loose or not in close contact with the shoulder. By this means, the cap is held in place by what might be termed a multiplicity of points or inward projections which are produced without changing the character or shape of the exterior surface of

the cap. It has been demonstrated in tests corresponding to those met with in the use of the sealing cap commercially, that the closing-in of these slight projections in the skirt, produced as described, is sufficient to hold the cap in any sterilizing operation to which the capped bottle may be subjected; and that the cap is easily removed by means of the ordinary capping tool, in which uncapping operation the cross portions of the segments are partially uncrossed which at once relieves the cap from the clamping strain which up to that time has served to hold it on the bottle head.

I claim as my invention,—

1. A sealing cap having a skirt provided

with a beaded edge, the inner portion or wall of which is divided into segments whose adjoining ends are crossed, substantially as specified.

2. A sealing cap having a skirt provided with an inturned bead the inner wall of which is slitted to form segments whose adjoining ends are crossed, the crossed portions of the segments extending from the edge of the wall to a point where the said wall rounds out to join the skirt proper, substantially as specified.

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