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H. L. LEWIN
METHOD OF ATTACHING CLOSURE CAPS
Filed March 31, 1939

Serial No.
265,334
2 Sheets-Sheet 1

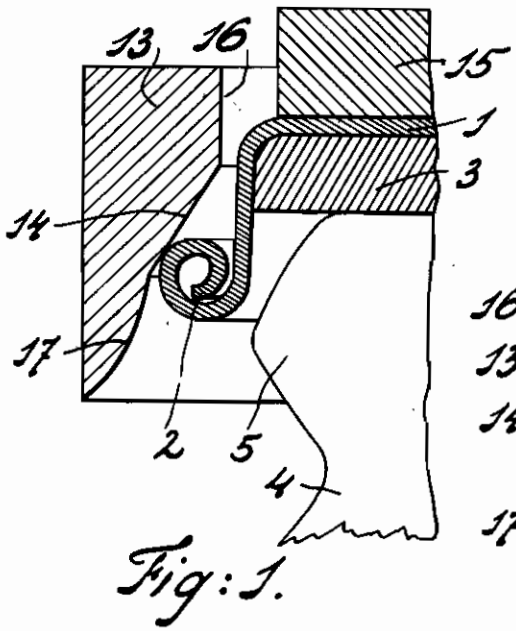


Fig: 1.

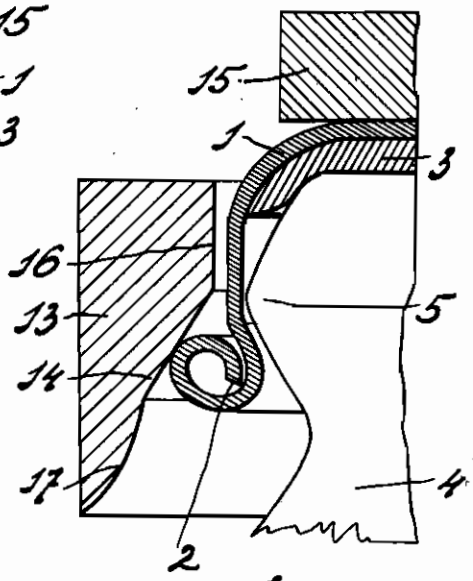
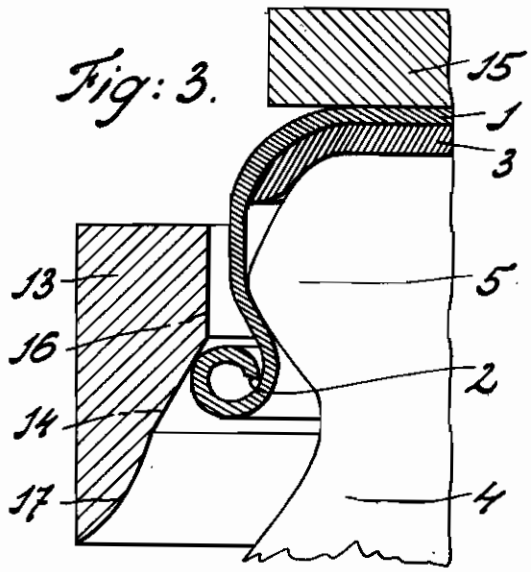


Fig: 2.

Fig: 3.



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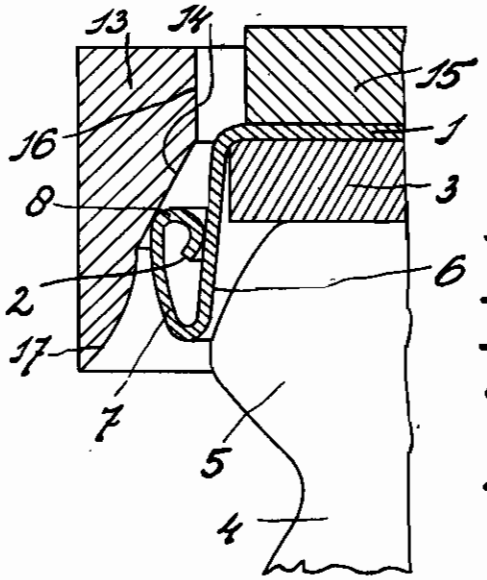

Fig: 4.

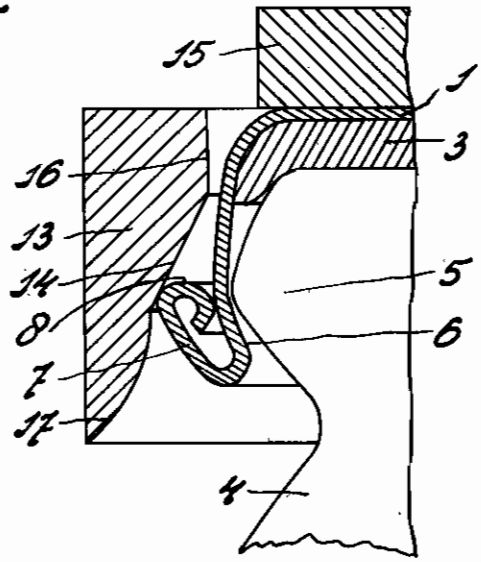

Fig: 5.

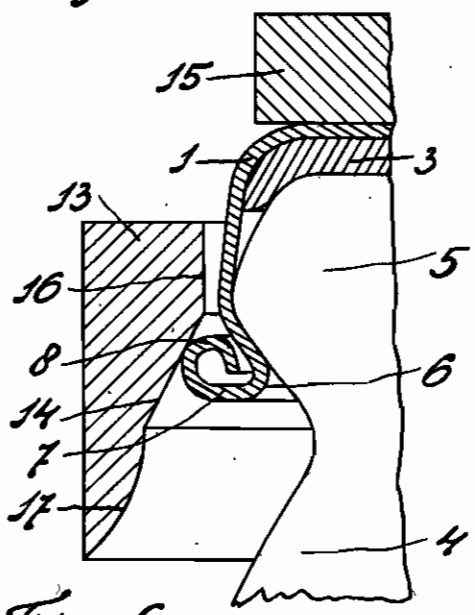

Fig: 6.

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ALIEN PROPERTY CUSTODIAN

METHOD OF ATTACHING CLOSURE CAPS

Herman Lewin, Rosmalen, Netherlands; vested in the Alien Property Custodian

Application filed March 31, 1939

The present invention relates to a receptacle closure and more particularly pertains to a cap for sealing a bottle or similar container. This application is a division of my co-pending application Serial No. 100,568, filed September 12, 1936.

One of the objects of the invention resides in the provision of a cap which is particularly simple in construction and having a smooth exterior and the invention includes the method of attaching the cap to a bottle in such a manner as to be removable therefrom with the application of a relatively small force and the cap is particularly suitable for bottles wherein the contents are under a relatively high pressure.

The cap is constructed to be applied to a bottle of the usual type wherein the neck is provided with an enlargement or an annular ridge around the outer part of the neck and the method of applying the cap to such a bottle includes the downward and inward movement of the rolled skirt portion of the cap so as to cause the rolled portion to engage the neck of the bottle below the annular enlargement.

Other and further features of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and the following description wherein several exemplary embodiments of the cap construction are disclosed and wherein the steps of the method are illustrated and described.

In the drawings:

Figure 1 is an enlarged sectional view of the cap and the preliminary relationship thereof with respect to the bottle neck.

Figure 2 is a similar view illustrating the position of the cap during the attachment thereof to the bottle neck.

Figure 3 is a sectional view of the cap after the same has been fixed on the bottle neck.

Figure 4 is a sectional view of a modified cap construction and arranged in a preliminary position upon the bottle neck.

Figure 5 is a sectional view of the cap shown in Figure 4 illustrating the position of the parts during an intermediate stage of the attaching operation.

Figure 6 is a sectional view of the modified cap illustrating the final position of the parts with the cap attached to the bottle neck.

Referring to Figure 1 the cap 1 consists of relatively thin metal and is provided with a depending skirt having an outwardly rolled lower edge portion. The rolled edge portion may be rolled until the outer edge 2 faces away from the depending skirt of the cap. A sealing disc 3 is arranged within the cap 1 in a well-known manner. The upper part of the bottle neck is indicated at 4 and the neck is provided with an annular enlargement 5.

In attaching the cap to the bottle the upper face of the cap 1 lies against a presser member 15. As illustrated in Fig. 1 a block member 13 is arranged over the cap. The block member 13 is provided with a straight hollow cylindrical upper part 16, a straight conically expanding inner part 14 and a convexly curved conically expanding hollow end part 17.

As the block 13 is moved downwardly as shown in Fig. 2 the rolled skirt portion of the cap is pressed somewhat downwardly and inwardly under the annular enlargement 5 whereby the cap is securely fixed on the bottle neck, and the final position of the parts are shown in Fig. 3.

The form of construction of the cap according to Figs. 4 to 6 has a rolled part 8 which forms the end of a bent-over part 7 which is relatively straight and forms with the depending skirt 6 a V-shaped lower end for the cap when viewed in section.

The method of attaching this type cap to the bottle neck will be apparent from a consideration of Figures 4, 5 and 6 wherein the initial shape of the cap prior to application to the bottle neck is illustrated in Fig. 4. During the initial movement of the block 13 in a downward direction the ductile lower edge of the cap is pressed downwardly and inwardly whereby the relatively straight portion or the part 7 is moved from a generally upright position as shown in Figure 4 until the straight portion 7 lies substantially in a horizontal direction as shown in Figure 6.

During the downward movement of the block 13 the conical portion 14 first engages the upper part of the V-shaped skirt as illustrated in Figure 5. Further downward movement of the block 13 causes the lower end of the V-shaped skirt to move inwardly and downwardly and finally the skirt is deformed into a position as illustrated in Fig. 6 to securely fix the cap to the bottle neck.

Experiments have shown that the cap according to the first form of construction as shown in Fig. 3 is able to withstand a pressure up to about eight atmospheres while the cap according to the second form of construction and application as shown in Fig. 6 will withstand a pressure of approximately 12 atmospheres within the bottle.

While the invention has been described with reference to specific constructional features of the cap and with reference to a particolar method of deforming such caps and attahing the same to a bottle neck it will be apparent that changes may be made therein by those skilled in the art.

HERMAN LEWIN.