Aug. 25, 1964 H. RITZENHOFF 3,145,869

SEALING CAP

Filed Jan. 24, 1963

Fig. 1.

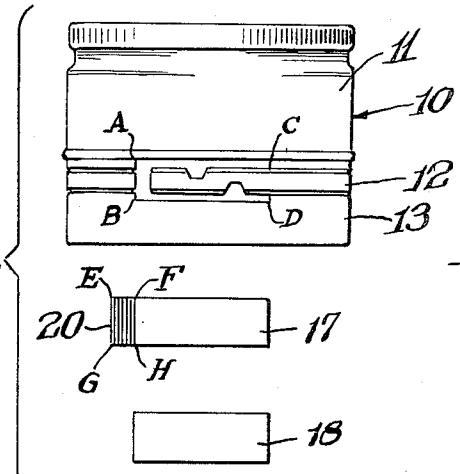


Fig. 4.

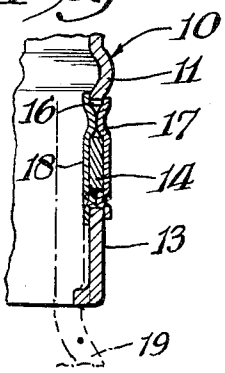


Fig. 2.

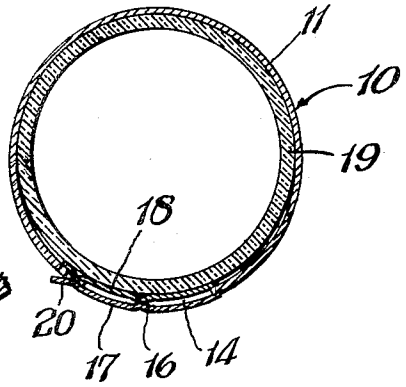


Fig. 5.

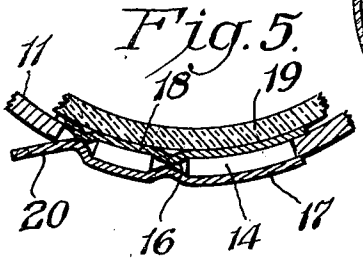
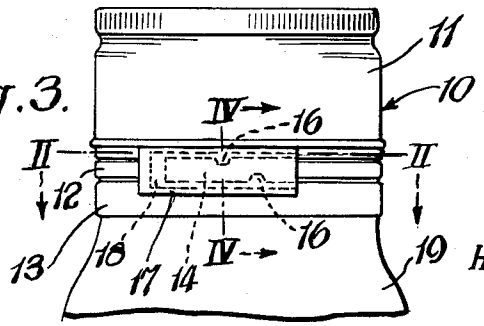


Fig. 3.



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SEALING CAP

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This invention relates to metal sealing caps for sealing containers and more particularly to metal sealing caps having strips predisposed for easy removal.

Sealing caps for bottles, jars, cartons or similar containers are preferably firmly mounted on the container until the first occasion for opening the container. It is then desirable after the opening of the container that the opened state of the container be obvious and at the same time, it is desirable to retain a substantial portion of the original sealing cap as a closure member for the container during further use.

Various types of metal sealing caps may be used to provide these desired features. One suitable arrangement for the opening of such sealing caps is a tear-off strip. The tear-off strip is formed by predisposing weakness in an area of the sealing cap which extends around the cap. The tear-off strips have a tear-off tongue which is seized for ripping the tear-off strip out of the sealing cap. The tear-off tongues of the conventional sealing caps have several undesirable features. In forming the tear-off tongue and the predisposed weakness, sharp edges are frequently formed in the manufacture of the sealing cap which result in injury to the user. Moreover, tear-off tongues which are formed flush with the cap resist easy gripping and a pointed instrument or fingernail must be employed to raise the tongue to a point of gripping. Additionally, the tear-off tongue may be difficult to locate on the cap. Further, the tear-off tongues can be damaged either during shipping or before the completion of the assembly operation and lose their effectivness in initiating the tear-off operation.

It is an object of this invention to overcome the foregoing disadvantages with a novel tear-off tongue arrangement on a tear-off strip in a sealing cap.

It is a further object of this invention to provide a sealing cap having a composite grasping device on a sealing cap removal device.

Still another object of this invention is providing a sealing cap having a tear-off tongue with a non-injurious attachment which permits the tongue to be easily lifted for grasping.

These and other objects of this invention will become more apparent upon consideration of the following description taken together with the accompanying drawings in which:

FIGURE 1 is a front elevation of parts of the cap closure of this invention before final assembly;

FIGURE 2 is a radial section taken through an assembled cap closure of this invention mounted on a container taken on line II—II of FIGURE 3 in the direction of the arrows;

FIGURE 3 is a front elevation of the assembled cap closure of FIGURE 2 on a container;

FIGURE 4 is a vertical section through the tear-off tongue portion of an assembled cap closure of FIGURE 3 taken on line IV—IV in the direction of the arrows; and

FIGURE 5 is an enlargement of a portion of the radial section of FIGURE 2.

This invention provides a tear-off tongue in a sealing cap attached to a tear-off strip, which tear-off tongue is enclosed in at least one foil part. The foil parts are attached together to enclose the tongue and an extended portion of the foil parts extends from the enclosure of the tear-off tongue.

The foil cover entirely encloses the tear-off tongue. The foil cover may be made of one, two or three parts, but comprises preferably a top foil and an inner foil. The top foil is positioned outside of the tear-off tongue on the sealing cap and the inner foil lies within the tongue in the sealing cap. The foils are larger in area than the tongue. The tongue is punched out of the sealing cap to provide apertures through the sealing cap at the tongue. Edges of the foil overlap these punched-out apertures in the sealing cap. The foils are joined together at these overlapping portions through the apertures.

The top foil is formed to extend over the tip of the tongue so that the extended portion may be grasped to bend the tongue out of its position within the sealing cap wall. When thus raised, the tongue may be grasped easily. The foils making up the foil cover may be of any suitable pliable material having tensile strength under pulling; for example, resin film materials are particularly well adapted to this purpose, but it will be understood that foils of paper and aluminum are also useful.

Referring to the drawings, FIGURE 1 shows a sealing cap **10** formed of a thin metal suitable for container closures. The cap **10** has a main body **11**, a tear-off strip **12**, a band **13** beneath the tear-off strip **12**, and a tear-off tongue **14** extending from the tear-off strip **12** into an aperture **15** punched out of the cap **10** around the tear-off tongue **14**.

The aperture **15** is a rectangle defined by the edges between the corner points A, B, C, and D. The tear-off tongue **14** is provided with notches **16** indented from its upper and lower edges. An outer foil **17** and an inner foil **18** are shown in unassembled condition in FIGURE 1. FIGURES 2 and 3 show the assembled cap **10** on a container **19**.

FIGURE 2 shows the assembled cap **10** on the container **19** in a radial section taken on line II—II of FIGURE 3. The foils **17** and **18** are in place on each side of the tear-off tongue **14**. The outer foil **17** overlies the tear-off tongue **14** while the inner foil **18** lies between the tear-off tongue **14** and the container **19**.

FIGURE 3 shows the assembled parts in front elevation with the outer foil **17** overlying the aperture **15**, shown in dotted lines, the tear-off tongue **14**, shown in dotted lines, and the inner foil **18**, shown in dotted lines. The outer foil **17** is larger than the aperture **15**. The inner foil **18** is larger than the aperture **15**. Both the inner and the outer foils overlap the edges of the tear-off tongue **14** in its aperture **15**. The vertical section of FIGURE 4 taken on line IV–IV of FIGURE 3 shows the relationship between the two foils **17** and **18** and the cap **10**, its aperture **15**, and its tear-off tongue **14** in the aperture **15** in the assembled unit. The tear-off tongue **14** positioned in the middle of the assembly is completely enclosed within the combined foils **17** and **18**. The aperture **15** around the tear-off tongue **14** receives the foils **17** and **18** which are joined together where they extend through the aperture and through the notch **16** in the tongue **14**. The junction between the foils **17** and **18** through one of the notches **16** is also illustrated in FIGURE 5. The inner foil **18** joins the outer foil **17**.

Thus, the tear-off tongue **14** is covered completely by the outer foil **17** at its outer surface and by the inner foil **18** at its inner surface. The foils **17** and **18** are fastened by sticking, welding or any other method. As illustrated in the described embodiment, the foils **17** and **18** may be thin resin films joined together by suitable adhesive on the facing surfaces. The adhesive, not shown, also serves to attach the foils to the tear-off tongue **14**. The inner foil **18** attached beneath the tongue **14** is somewhat larger than the rectangle of the aperture **15**. Accordingly, the tear-off tongue is held by the inner foil **18** so that under normal conditions the tongue **14** cannot

be bent out of its position. As the top foil **17** extends over the edges of the aperture **15** at the upper and lower edges, the tear-off tongue **14** is also protected against unintentionally being pressed inwardly of the cap **10**. Thus, the combination of the two foils **17** and **18** is suited to fix the tear-off tongue **14** exactly in alinement with the curvature of the cap **10** as illustrated.

Another desirable feature illustrated is the extension of the top foil **18** over the tip of tongue **14**. The foil **17** has an extended portion **20** defined by the rectangle E, F, G, and H, as shown in FIGURE 1. This tip-like extended portion **20** of the relatively soft foil material lies outside of the periphery of the cap **10**. The extended portion **20** may be grasped when pulling off the tear-off strip **12** to open the cap. The extension portion **20** is first grasped to bend the tear-off tongue out of its position in alinement wtih the curvature of the cap. Then the completely enclosed tear-off tongue **14** may easily be grasped by finger pressure. In lifting the tear-off tongue **14** by pulling on the extended portion **20**, the foils **17** and **18** remain attached to the tear-off tongue **14**. The bond between the foils **17** and **18** at the notches **16** serve to hold the foils **17** and **18** on the tongue during the removal operation.

The arrangement of the foils with the tear-off tongue of this invention and as described above in the preferred embodiment provides a tongue on a container cap tear-off strip which is protected and yet readily accessible. The foil material may be colored differently than the cap so as to make the tongue easily identifiable. Also, it is possible to apply a legend to the outer foil and thus assist in identification of the tear-off tongue. The tear-off tongue thus protected is advantageous in eliminating the possibility of injury through sharp edges.

Various adaptations and modifications are possible within the spirit of this invention and the above-described preferred embodiment is presented for the purpose of illustration only. Therefore, it is intended that the invention be limited only by the scope of the attached claims.

What is claim is:

1. A sealing cap for containers comprising a cap having a main portion and a removable portion, said removable portion being provided with a weakened line girdling said cap, an edge formed within said cap wall defining an aperture through the wall, a tongue formed of said sealing cap with said aperture attached at said weakened line, the peripheral edge of said tongue defining said aperture formed in said cap at said tongue and adjacent to said weakened line; and a foil cover comprised of at least two areas adhered around said tongue and lying partially in said aperture, said tongue being positioned in said aperture so as to provide said partial inter-position of said foil cover.

2. A sealing cap as claimed in claim 1 having notches formed in said tongue lateral to an extension of said weakened line so constructed and arranged as to provide engagement of the adhered together foil areas within the extension of the weakened line.

3. A sealing cap as claimed in claim 1 wherein the foil cover is made up of at least two pieces of foil adhered together at said aperture and around said tongue.

4. A sealing cap as claimed in claim 1 in which said foil cover is composed of a flexible material.

5. A sealing cap according to claim 1 wherein one of said foils extends beyond the end of the tongue constructed and arranged as an extended tip capable of being grasped.

6. A sealing cap according to claim 1 wherein said parts of said foil cover are of greater dimension than said aperture.

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