Aug. 31, 1965 P. E. BINDSCHEDLER 3,203,570

CLOSURE CAP FOR CONTAINERS

Filed Feb. 20, 1961 2 Sheets-Sheet 1

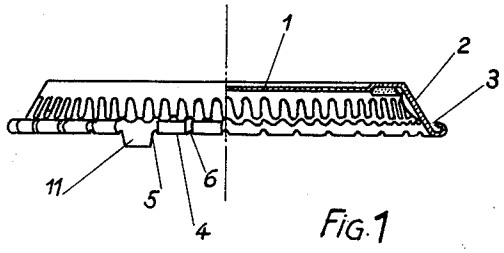

Fig. 1

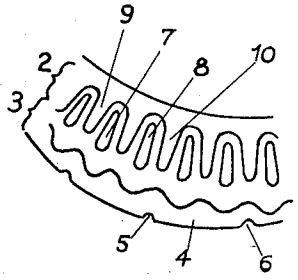

Fig. 2

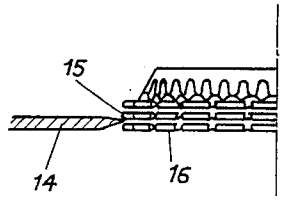

Fig. 4

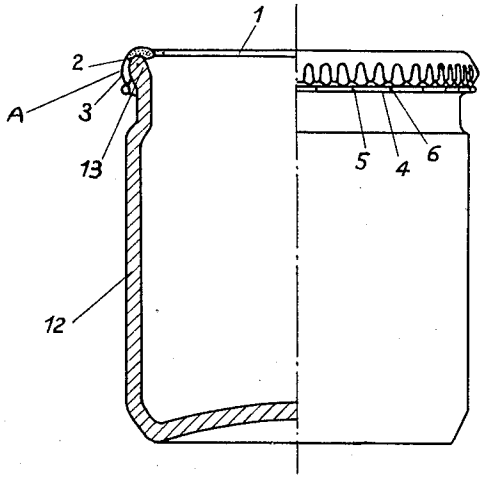

Fig. 3

Aug. 31, 1965 P. E. BINDSCHEDLER 3,203,570

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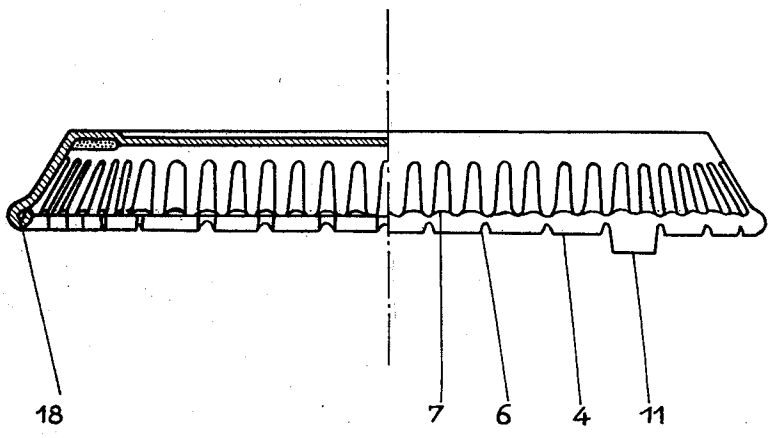
Filed Feb. 20, 1961 2 Sheets-Sheet 2

FIG. 5



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3,203,570

CLOSURE CAP FOR CONTAINERS

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5 Claims. (Cl. 215—39)

The present invention relates to caps for sealing bottles, jars and other receivers, of the type comprising a bottom and a corrugated skirt extending around the bottom.

Such "crown" type caps are generally used for sealing receivers having a neck terminated by a bead. In order to seal a receiver or vessel by means of such a cap, the latter is placed on the neck mouth and the skirt is then tightened around and under the bead, thus firmly engaging the receiver neck. Such caps have a sharp edge and this causes many inconveniences which will be mentioned hereinafter.

The invention provides an improved cap of the above type.

In the cap according to the invention, the corrugations stop at a certain distance from the edge of the skirt and the rim portion, which is free of corrugations, is upturned to provide a rounded rim portion.

The invention will be best understood from the following description and appended drawing, given solely by way of example and wherein,

FIG. 1 shows, in elevation and partly in section, a cap according to the invention;

FIG. 2 is an enlarged perspective view of a portion of the inner surface of the cap of FIG. 1;

FIG. 3 shows, partly in elevation and partly in section, a cap, similar to that shown in FIG. 1, sealing a preserve jar;

FIG. 4 shows a cap according to the invention while it is being separated from a stack of such caps; and

FIG. 5 shows another embodiment of the cap according to the invention.

The same reference numerals designate the same elements throughout all the figures.

A cap according to the invention may be obtained, for example, from an aluminum or tin plate stamping blank. It comprises a bottom 1 and a flared skirt 2 having a non-continuous rounded rim 3.

Rim 3 is formed with rounded claws 4 which would at first sight appear to be of a rather conventional type. However, according to an important feature of the invention and as may be readily seen from the drawing, the rounded claws 4 formed at the rim of skirt 2 are separated from each other by cut-outs 5 and 6. For the sake of clarity, one of the claws is shown unfolded in FIG. 1 at 11.

The shape of the notches or corrugations with which skirt 2 is provided is more particularly shown in FIG. 2. These corrugations are of a conventional type. However, it should be noted that they do not extend until the edge of the skirt and that a portion of the skirt rim which is rounded, i.e., outwardly upturned in the embodiment of FIG. 1, is not provided with corrugations or notches. This important feature of the invention may be particularly observed from FIG. 1, wherein one claw 11 is shown unfolded, and from FIG. 2.

In the embodiment shown in FIG. 1, it may be seen that each upturned claw portion extends over a length corresponding to two corrugations 7 and 8. The cut-out portions 5 and 6, separating each claw 4 from those adjacent thereto, extend respectively over the length corresponding to one cavity separating two adjacent convex corrugations 9 and 10.

FIG. 3 shows the manner in which any kind of vessel or receiver, which in the example shown in a jar for preserves 12, can be sealed by means of a cap according to the invention. The sealing device (not shown) applies the cap against the mouth of the jar, and a reciprocating sleeve, while urging skirt 2 towards the neck of the jar, causes the claws to pivot at A towards neck 13 of jar 12, just under the bead which terminates the neck.

It may thus be seen that the sealing is performed in the same manner as in conventional corrugated caps, i.e., those having no rounded rim portion. However, the sealing is not performed by virtue of the claws which are not the sealing element properly speaking and this distinguishes the cap according to the invention from certain known caps having no corrugations or notches and wherein the sealing operation is performed by a rounded rim only.

In the cap according to the invention, as is more particularly shown in FIG. 3, the rounded rim portion need not and actually does not intimately engage the neck portion 13 of the sealed jar 12. However, while claws 4 pivot under the action of the closing sleeve, they come nearer to each other, the cut-outs between the claws being thus closed and, when the sealing operation has been performed, adjacent claws contact each other. In this respect, it is of paramount importance to make cut-outs separating claws 4 from each other before the cap has been used for sealing a receiver, not too short, lest the claw should be deformed during the sealing operation, and not too long, lest they should prevent the claws from contacting each other when the sealing has been performed. Any separation betwen the claws after sealing may be detrimental in that the edges of the cap might become oxidized and injure the user's fingers during the unsealing of the jar.

It should be noted that these two risks, which are quite significant in so far as conventional caps are concerned, i.e., those which have a corrguated skirt and which are sometimes designated as "crown" type caps, are thus entirely eliminated with a cap according to the present invention. The unsealing operation is also made simpler.

A further advantage of the caps according to the invention is that they are particularly convenient for stacking and are thus particularly suitable for use in automatic sealing machines. As may be readily seen from FIG. 4, a separation member is readily inserted between the respective rounded rims 15 and 16 of two caps stacked upon each other, without any danger of scratching the varnish covering the cap. It is obvious that such a stacking is not possible with conventional caps having sharp edges.

Another advantage of the cap according to the invention is that it is strengthened by the rounded rim. A substantial pressure may be exerted on the cap during the sealing operation without any risk of the cap's bottom being deformed. This may result in the further advantage of making it possible to use caps of thinner material.

FIG. 5 shows another embodiment of a cap according to the invention. Under certain conditions, it may be desirable that the external surface of the cap, once the sealing has been performed, should be entirely smooth. It is also sometimes desirable that no portion of the inner surface should be visible as, for example, when the color of the inner surface of the cap is not the same as that of its outer surface. Such is obviously not the case with the outwardly upturned rounded rim of the cap of FIGURES 1 to 4.

To avoid such an arrangement, the rim portion may be inwardly upturned as shown at 18 in FIG. 5, instead of being outwardly upturned as in FIG. 1. In other respects the cap of FIG. 5 is entirely similar to that of FIG. 1.

It will be noted that the cap shown in FIG. 1 or 5

may also be used for tightly sealing a neck provided with a screw thread or other protruding portion adapted for screwing. The skirt corrugations, undergo deformation and provide close engagement of the cap with the neck of the container. When unscrewing the cap, the user entails no risk of hurting his fingers by virtue of the rounded rim of the cap.

Of course, the invention is not limited to the embodiments shown in the drawing and which are given merely by way of example, since many modifications may be made in a cap according to the invention without departing from the scope and spirit of the invention.

What we claim is:

1. A cap of the crown type for sealing the mouth of a vessel which has a peripheral bead, said cap comprising a bottom portion adapted for resting on said peripheral bead to cover the mouth of the vessel, a depending skirt on said bottom portion extending beyond said peripheral bead when the bottom portion rests on the mouth of the vessel, said skirt having corrugations and a smooth corrugation-free terminal rim portion, said rim portion having a free edge and spaced cut-outs extending from said free edge towards said corrugations and defining claws which are upturned and which are separated from one another by said cut-outs, and said cut-outs being restricted to said corrugation-free terminal rim portion and extending to a position spaced from the corrugations to provide a smooth portion in said skirt between the corrugations and the rim portion containing the cut-outs, said cut-outs having a width sufficient to cause adjacent upturned claws

to laterally contact each other as said corrugations on said skirt are brought into contact with said bead on the vessel and said rim portion is inwardly deformed to a spaced position with respect to said bead.

2. A cap as claimed in claim 1 wherein said claws are upturned outwardly.

3. A cap as claimed in claim 1 wherein said claws are upturned inwardly.

4. A cap as claimed in claim 1 wherein said corrugations are convex and said skirt is provided with valleys between said corrugations.

5. A cap as claimed in claim 1 wherein said cut-outs are spaced one for every other corrugation so that each claw extends for a length corresponding to two corrugations.

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