

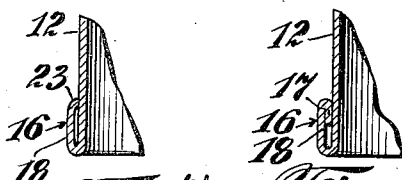
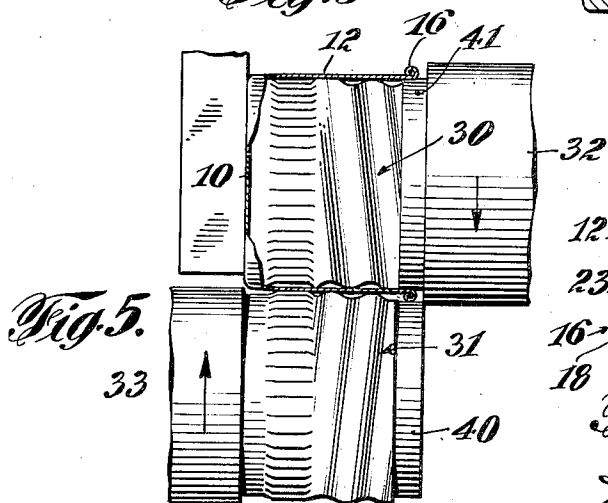
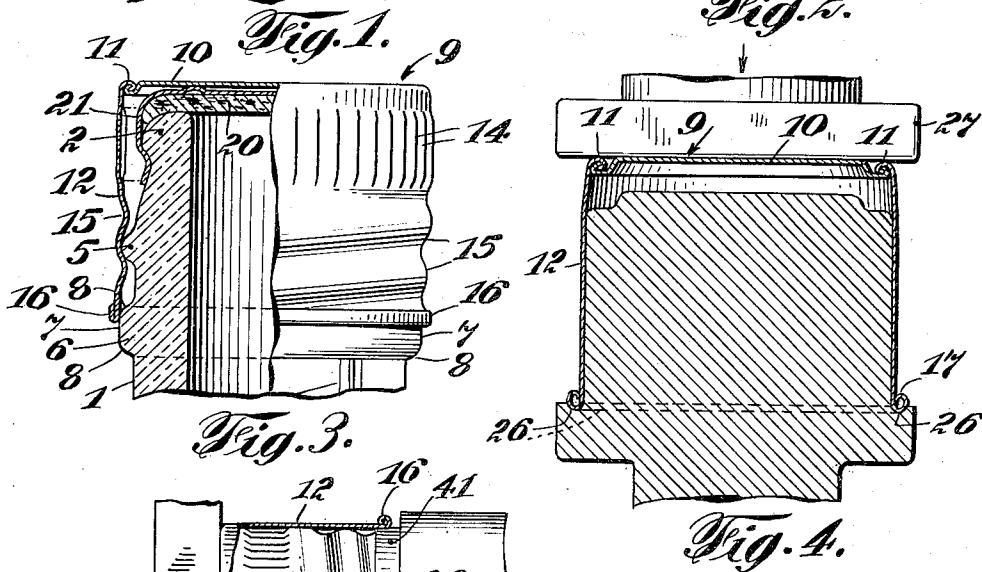
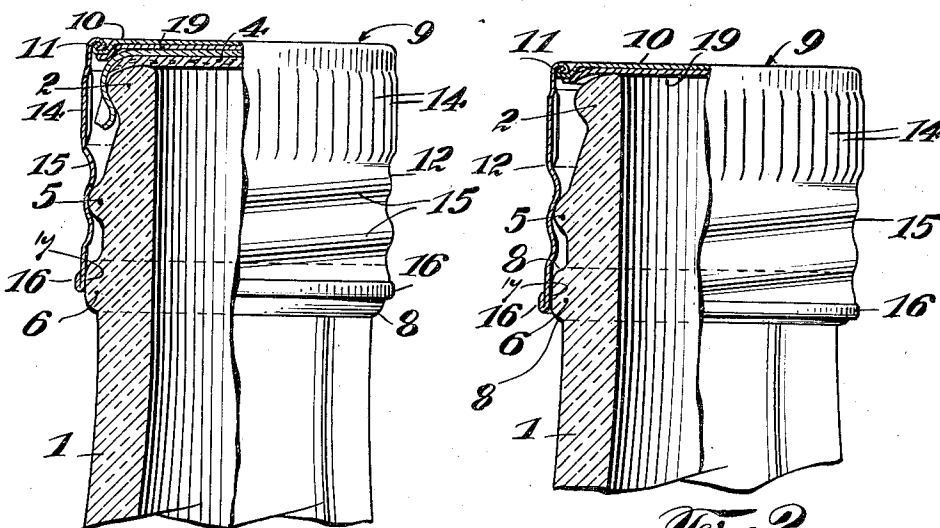
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A. PODEL

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SEALED PACKAGE

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INVENTOR
Abraham Podel
BY
Norman A. Holland
his ATTORNEY

UNITED STATES PATENT OFFICE

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SEALED PACKAGE

Abraham Podel, New York, N. Y., assignor to
Anchor Cap & Closure Corporation, Long Is-
land City, N. Y., a corporation of New York

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5 Claims. (Cl. 215—43)

The present invention relates to closures, and more particularly to closure caps for bottles and the like, and the method of making.

A common form of package for ketchup, and similar products, comprises a bottle having a crown finish adapted to receive a hermetic closure such as a crown cork cap, and having threads below the crown finish for securing a cover cap upon the bottle. Preferably, the cover caps are made in two pieces, that is, a top portion or disc member is secured to a tubular skirt member. Heretofore, it has been customary to provide the lower edge of the skirt with a relatively large circular, hollow bead which was adapted to abut against, or be spaced from, an arcuate or rounded shoulder on the container.

A serious objection to the above construction is that the large bead on the cap and the shoulder on the container give the package a top-heavy and disproportionate appearance. The shoulder on the container, while provided for decorative purposes, fails to accomplish its intended function and, at the same time, impairs the mechanical utility of the package. When the hermetic closure is removed, the cover cap, to provide a reseal, should be telescoped further downwardly upon the container. This, however, is not possible, since the shoulder limits the downward movement of the bead of the cap and, for this reason, the top part of the cover cap cannot be sealed against the mouth of the container. Consequently, the cover cap is not adapted to provide an effective reseal to preserve the remaining contents of the container. Furthermore, packers use hermetic inner seals of varying thickness, whereby a definite relation between the bead and the shoulder cannot be maintained with the several types of inner seals without having a different glass finish for each.

The present invention aims to overcome the above difficulties and objections by providing a container having a glass finish adapted to receive the bead portion of the cap, both during the initial seal and when the cover cap is applied to provide a reseal, irrespective of the type of inner seal used. The present invention also provides an improved bead, or wire edge, which is not conspicuous and cooperates with the shoulder on the container to provide an attractive package, and an improved method for making the bead of the cap, which reduces the manufacturing cost thereof.

An object of the present invention is to provide a closure cap having an improved wire bead in the skirt thereof.

Another object of the invention is to provide a simple, inexpensive method for making the closure caps of the present invention.

Another object of the invention is to provide a cap and container wherein a simple glass finish will provide an attractive package and an effective seal, independently of the thickness of the hermetic closure.

A further object of the invention is to provide an attractive, serviceable, sealed package which overcomes the difficulties and objections noted above.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein

Fig. 1 is a side elevational view, partly in section, illustrating a preferred embodiment of the present invention;

Fig. 2 is a side elevational view, partly in section, illustrating a closure cap of the present invention sealed upon the container after the hermetic closure, such as shown in Figs. 1 and 3, has been removed;

Fig. 3 is a side elevational view, partly in section, illustrating the present invention utilizing a different form of hermetic closure;

Fig. 4 is a sectional view illustrating the first step in the formation of the bead in the skirt of the cap;

Fig. 5 is a side elevational view, partly in section, illustrating the second step in the formation of the bead in the closure;

Fig. 6 is an enlarged fragmentary sectional view, illustrating a preferred form of the finished bead; and

Fig. 7 is an enlarged fragmentary sectional view, illustrating a modified form of the finished bead.

Referring again to the drawing, and more particularly to Figs. 1 and 2, there is shown a container 1, such as a bottle for ketchup or the like, having an annular portion 2 adjacent to the mouth thereof, which provides a suitable crown finish on the glass. Preferably, a crown cork closure cap is sealed on the glass finish of

the container in the usual manner, to provide a hermetic seal.

In order to facilitate the application of a cover cap, such as will be described hereinafter, suitable thread means 5 are provided on the container below the crown portion 2. The thread means 5 are illustrated herein as a single continuous thread but, if desired, several interrupted or divided threads may be advantageously utilized. At a convenient distance below the thread 5, or other cap engaging means, an annular shoulder or bead 6 is formed on the container, which is adapted to permit the lower edge of a closure cap to be telescoped thereover. Preferably, the shoulder comprises a straight vertical or cylindrical zone 7, so that the lower edge of the cap skirt is always adapted to be in contact therewith, even when the effective depth of the cap skirt varies with respect to the container finish. In order to enhance the appearance of the shoulder 6, the upper and lower portions thereof are rounded or bevelled, as shown at 8.

The cover cap 9 illustrated herein may be constructed of metal such as tin plate, having a decorative coating of lacquer thereon, and may comprise a cover portion or disc member 10 secured at 11 to a tubular depending skirt 12. The upper part of the skirt may be corrugated or knurled, as shown at 14, to facilitate gripping the cap during application and removal thereof. Below the corrugations 14, suitable thread means 15 are provided, which are adapted to engage the thread means 5 on the container.

In order to hide the raw edge of metal at the lower edge of the skirt, it has been customary to form a relatively large tubular bead. These beads are not satisfactory because they spoil the appearance of the sealed package and interfere with the proper function of the cover cap. Furthermore, it is not feasible to reduce the size of such beads by present methods of manufacture.

The present invention overcomes the above difficulties by forming the bead in two stages; first by curling the lower edge of the skirt into substantially a bead, and then by rolling the bead into a substantially flat wire edge 16, as shown more particularly in Fig. 6. The edge 17 of the skirt is curled slightly inwardly and downwardly, so that it abuts the tubular part of the skirt and is concealed. The portion 18 is folded over the skirt and pressed inwardly, whereby the bead is only substantially twice the thickness of the material utilized for the skirt. In this manner, an attractive and serviceable bead is provided, which enhances the appearance of the cap and package.

The shoulder 6 on the container is substantially cylindrical and of smaller diameter than the inner periphery of the cap skirt, so that the bead 16 may be telescoped thereover. Also, the cylindrical portion 7 of the shoulder is of sufficient width to permit the bead to be always in contact therewith, irrespective of the thickness of the hermetic closure 4, and irrespective of the presence or absence thereof. By making the bead of the container slightly smaller than the bottom of the cap, the bead is not used as a stop for limiting the downward movement of the cap and positioning it with respect to a shoulder on the container.

Fig. 1 illustrates the closure 4 applied to the crown part 2, and the cover cap 9 telescoped thereover in the manner in which the package is sold to the ultimate consumer. While the parts of the package are assembled in this relation, the bead 16 engages the zone 7 substantially

at the middle portion thereof. In Fig. 2, the parts are shown as they are assembled by the consumer to provide a reseal, after the hermetic seal has been removed. The cover cap is now adapted to be telescoped further downwardly whereby the bead 16 engages the zone 7 substantially at the lower portion thereof and the cover part 10 forms a seal on the crown part 2 of the container. If desired, a liner or sealing disc 19 may be placed in the cover cap to provide a more effective reseal.

In Fig. 3, a slightly different hermetic closure 20 is shown, which comprises a metal disc, preferably of aluminum, having a skirt 21 spun into engagement with the finish 2 of the container. Usually, this type of seal is slightly thicker than a crown cork cap, but nevertheless, the bead 16 will cooperate with the shoulder 6 to engage the zone 7 at substantially the upper portion. When the closure 20 is destroyed and removed, the parts of the package may be assembled to provide a reseal, as shown in Fig. 2.

In Fig. 7 a modified form of bead is shown, wherein the lower edge of the skirt of the cap is not curled inwardly and downwardly, but the extreme edge 23 of the skirt is set slightly inwardly so that the raw edge of the metal abuts against the tubular part of the skirt. In this manner an attractive bead or flat wire edge is provided from two thicknesses of metal pressed against each other.

The new method of making the caps of the present invention is illustrated more particularly in Figs. 4 and 5. Usually, the tubular skirt 12 is formed on a suitable device, commonly known as a horn. After leaving the horn, the skirt members are delivered to a turret, or cylindrical member 25, adapted to present the cap skirts or bodies to an assembling mechanism which secures the top portions or cover disc 10 thereto by providing a seam 11 in the customary manner. The turret is preferably provided with a suitable arcuate groove, as shown at 26 herein, adapted to curl the lower edge of the skirt outwardly and upwardly when the cap is presented to a bumping mechanism, of which member 27 is shown herein. The bumping mechanism preferably moves the tubular skirt axially upon the turret, forming an enlarged tubular bead by curling up the lower edge of the cap.

After the caps are removed from the turret, they are delivered to a suitable rolling device, such as shown in Fig. 5, for forming screw threads, or other container engaging means, and corrugations in the skirt of the cap. Preferably, the inner roller 30 and an outer roller 31, mounted upon suitable shafts 32 and 33 respectively, for forming the threads, are provided with corresponding surfaces 40 and 41 to engage the curled bead portion and exert radial inward pressure thereon to compress the skirt and the shape of the bead 16, as shown in Figs. 6 or 7. These surfaces 40 and 41 are effective upon the cap skirt during the formation of the threads 5 and corrugations 14, and complete the formation of the bead during the threading operation.

It will, of course, be understood that the present invention may also be applied to closures formed of a single piece of metal, wherein the cover part and skirt are integral. Such closures also may be thereafter delivered to a rolling device which forms a flat wire edge and container engaging means.

In forming the sealed package shown herein, the hermetic closure 4 or 20 is sealed upon the

5 crown part 2 of the container by a suitable cap
applying mechanism. The cover cap 9 is then
placed over the hermetic closure and is screwed
upon the threads of the container until the un-
derside of the cover part 10, or the sealing liner
19, abuts against the top part of the hermetic
closure. When the parts of the closure are as-
sembled in this relation, the bead 16 will engage
or coincide with the cylindrical portion 7 of the
10 shoulder 6.

It will be seen that the present invention pro-
vides a new and novel cap and a simple and in-
expensive method of making. The wire edge is
inconspicuous and enhances the appearance of
15 the package. Likewise the raw edge of the metal
is concealed and will not corrode. The shoulder
on the container cooperates with the wire bead
of the cap, whereby the bead engages the cylin-
drical zone independently of the presence of the
20 hermetic closure. In this manner, the cover
caps also provide an effective reseal in every in-
stance. The parts of the package are rugged in
construction and capable of withstanding any
rough usage to which they may be subjected.

25 As various changes may be made in the form,
construction and arrangement of parts without
departing from the spirit and scope of the inven-
tion and without sacrificing its advantages, it is
to be understood that all matter herein is to be
30 interpreted as illustrative and not in a limiting
sense.

Having thus described my invention, I claim:

1. In a sealed package, the combination of a
container having cap engaging means thereon
35 and a bead having a substantially cylindrical
cap engaging portion, a closure cap having means
in the skirt thereof for engaging said means upon
said container, and a flat wire bead at the lower
edge of the skirt telescoped over and engaging
40 said bead on the container.

2. In a sealed package, the combination of a
container having cap engaging means thereon,
a substantially cylindrical bead below said
means, a member sealed upon the mouth of said
45 container to provide a substantially hermetic
seal, a closure cap having means in the skirt
thereof for engaging said means upon said con-
tainer, and a flat wire bead at the lower edge of
the skirt for engaging said cylindrical bead on
50 the container before and after said sealed mem-
ber is removed from the mouth of the container.

3. In a sealed package, the combination of a

container, a closure sealed to the upper end of
the container, a cover cap extending over said
closure and having a rolled edge at the bottom
thereof; said rolled edge being flattened to de-
crease the external diameter of the bottom of 5
the cap, and a bead on said container adjacent
the bottom of said cover cap, said bead being rel-
atively wide and substantially cylindrical, the
maximum diameter of the bead being slightly
less than the diameter of the bottom of the cap 10
to permit the bottom of the cap to be tele-
scoped varying distances over the bead.

4. In a sealed package, the combination of a
container adapted to receive a hermetic sealing
cap and a cover cap, a hermetic sealing cap se- 15
cured to the mouth of said container, a cover
cap telescoped about the upper end of said con-
tainer and said sealing cap, an annular bead
on said container having a cylindrical zone of a
diameter substantially equal to the inner di- 20
ameter of the bottom of said cover cap adapted
to permit the bottom of said cover cap to be
telescoped over and engage said bead, said cylin-
drical zone being of greater width than the ver-
tical thickness of the hermetic sealing cap at a 25
portion extending across the mouth of the con-
tainer.

5. In a sealed package, the combination of a
container having a finish adapted to accommo-
date a sealing cap and a screw-threaded cover 30
cap, a sealing cap on the end of the container
having a sealing liner of substantial thickness
therein, a cover cap telescoped about the seal-
ing cap having screw threads in the skirt there-
of adapted to mate with threads on the container, 35
said cover cap having a reinforced lower edge
form of a flattened doubled-back portion of the
skirt, and a bead on the container adjacent the
bottom of the cover cap adapted to receive the
reinforced edge of the cap, said bead having an 40
annular cylindrical zone of substantial width and
having a diameter slightly smaller than the in-
ternal diameter of the lower edge of the cap to
permit the lower edge of the cap to be telescoped
over it, said cylindrical zone being of greater 45
width than the reinforced edge and the thick-
ness of the sealing liner, whereby, when the seal-
ing cap is removed, the lower edge of the cover
cap may extend down further over the cylindri-
cal zone of the bead without impairing the ap- 50
pearance of the package.

ABRAHAM PODEL.