Sept. 20, 1938. E. SCOFIELD 2,130,746

TWO-PIECE KETCHUP CAP

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Fig. 1.

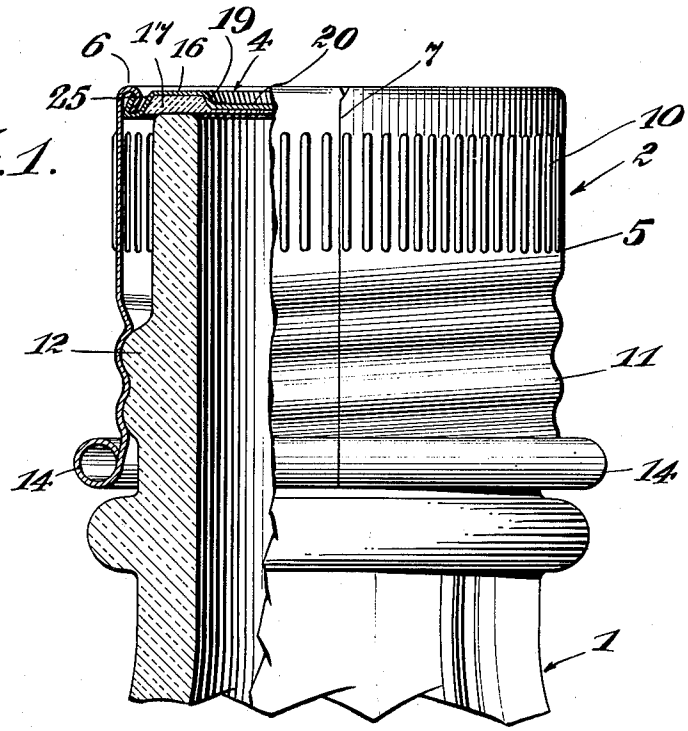


Fig. 3.

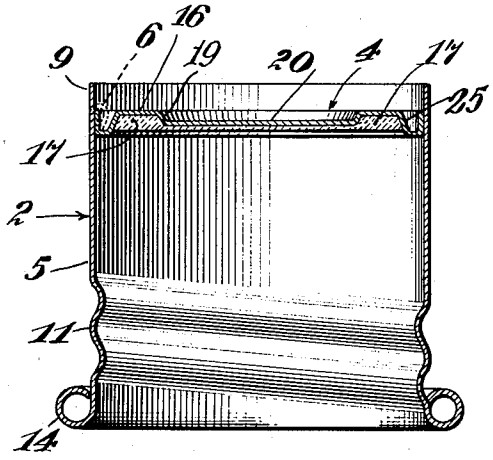


Fig. 5.

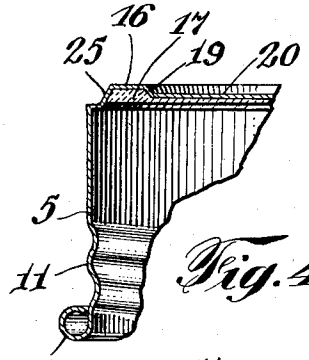
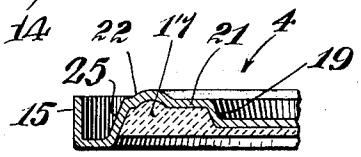


Fig. 4.



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Fig. 2.

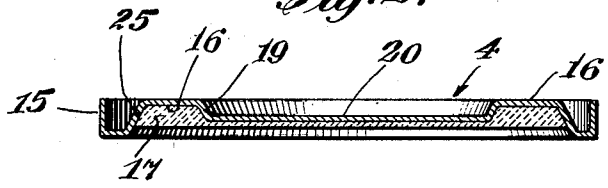


Fig. 6.

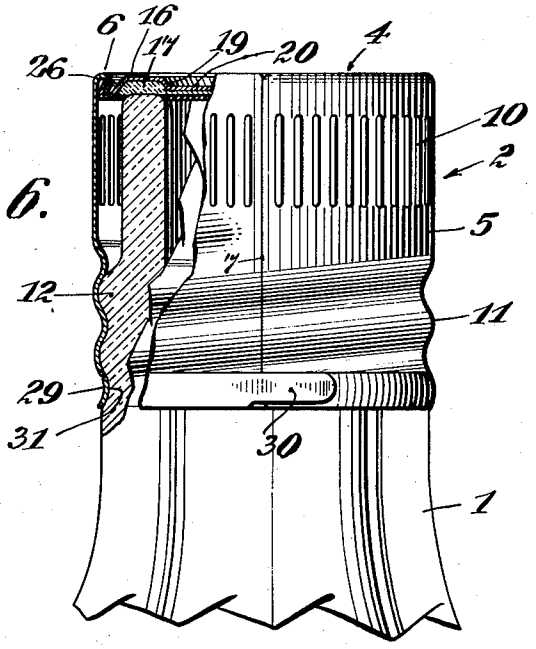
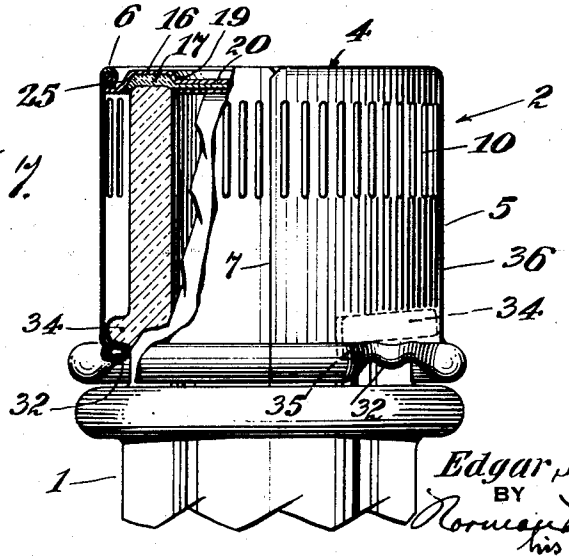


Fig. 7.



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UNITED STATES PATENT OFFICE

2,130,746

TWO-PIECE KETCHUP CAP

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Application July 18, 1930, Serial No. 468,754

4 Claims. (Cl. 215—40)

The present invention relates generally to closure caps and more particularly to two-piece caps.

It is customary to pack food products, such as ketchup and the like, in glass bottles, generally hermetically sealed, from which the contents may be readily dispensed. To accomplish this, packers have utilized two caps, one for the hermetic seal and the other for the reseal.

One type of package in general use, comprises a "crown cork" cap sealed to the mouth of a bottle and a two-piece cover cap screwed upon suitable threads or secured to lugs on the neck of the bottle. Other packages have a small disc with a cork gasket therein secured to the bottle by spinning a strip of soft metal thereover. A suitable cover cap is likewise necessary with this type of seal. A two-piece closure, such as shown in the patent to Robert A. Russell, No. 1,327,967, is used almost exclusively as a cover or reseal cap because of its attractiveness and the decorations possible therewith. The use of two closures on each package is objectionable due to the extra cost required for the additional cap, and due to the additional time and labor required for applying two caps.

The present invention aims to overcome these difficulties by providing a two-piece cap construction which is adapted to form a hermetic seal on a bottle and also adapted to be used as a reseal closure for the bottle while the contents are being dispensed. The invention further contemplates a more effective cover cap which is adapted to hermetically close the bottle successively and, thereby, minimize deterioration of the product.

An object of the invention is to minimize the labor and cost of making and applying bottle closures, particularly closures used for ketchup bottles and the like.

Another object of the invention is to provide a closure cap adapted to be sealed hermetically to a container and also adapted to be used as a reseal closure.

Another object of the invention is to provide a two-piece closure cap having a groove in the cover part, with sealing material flowed therein, which can be readily applied and removed.

Another object of the invention is to provide a closure cap having sealing material in an annular groove in the cover part and a relatively thin coating of sealing material on the central portion of the cover part adapted to protect the cap against corrosion.

Another object of the invention is to eliminate the necessity of a plurality of seals for individual packages and thereby minimize the number of parts required to form an efficient hermetic seal and a subsequent reseal.

A further object of the invention is to provide two-piece closure caps adapted to form hermetic seals on containers such as bottles and the like which can be made by a simple, inexpensive method.

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 drawings, forming a part of the specification, wherein;

Fig. 1 is a side elevational view of a preferred embodiment of the invention, partly in section, illustrating the closure as it appears attached to a container;

Fig. 2 is an enlarged sectional view of a preferred button or cover portion of the cap prior to being assembled with the skirt of the cap;

Fig. 3 is a sectional view showing the cover and skirt portions while being assembled, the position of the connecting seam upon the completion of the assembling operation being illustrated in dotted lines;

Fig. 4 illustrates a slightly different form of button construction having an improved groove therein;

Fig. 5 is a fragmentary sectional view illustrating sealing material flowed onto the central surface of the cover part of a one-piece cap;

Fig. 6 is a side elevational view, partly in section, of a slightly different embodiment of the invention employing a tear-off band; and,

Fig. 7 is a side elevational view, partly in section, illustrating a cap provided with a plurality of lugs formed in the lower edge of the skirt of the cap.

Referring again to the drawings, and more particularly to Figs. 1, 2 and 3, there is shown a container 1, herein illustrated as a bottle, having a closure cap 2 secured thereon. The cap preferably comprises a cover portion or button 4 and a tubular depending skirt or body part 5, suitably attached to the button 4 by an interfolded seam 6. A two-piece closure is preferred because the metal is not subjected to severe drawing or bending operations which might damage

the lacquer coating during the manufacture of the closure.

The skirt portion 5 comprises a strip of metal bent into a cylindrical shape with the free ends interlocked by a seam 7. At the upper end of the skirt, a portion 9 is provided adapted to be joined with the button 4 by rolling the ends thereof inwardly to form the seam 6. Immediately below the seam 6, the skirt of the cap is knurled or provided with corrugations 10 to facilitate a manual grip for removing the cap. Preferably, suitable screw threads 11 extend about the skirt portion of the cap and are adapted to engage corresponding threads 12 on the container. The lower edge of the skirt is rolled to form a wire edge or bead 14 to strengthen the construction of the skirt member and to improve its appearance.

The button or cover portion comprises a disc member having an upwardly extending flange 15 about the outer periphery thereof, which is adapted to be nested within the cylindrical skirt 2 at the upper end 9 and rolled into engagement therewith to form the seam 6. An annular groove or channel 16, relatively wider than the lip or rim of the container, is provided for receiving a suitable sealing material or gasket 17. The present embodiment illustrates a suitable sealing material flowed into the groove 16 which has a slightly gummy nature and, thus, is adapted to seal the container efficiently and to permit an appreciable vacuum to be retained within the package. Such a hermetic seal is highly beneficial when the present invention is applied to ketchup bottles and the like, whereby subsequent spoilage of the foods is prevented.

The groove 16, shown herein, is formed by an outer annular side wall 25 and an inner annular side wall 19 which merges into a depressed central portion 20 at an angle to increase the resiliency of the button and facilitate a better seal. Preferably, the inner wall 19 is relatively shorter than the outer wall 25, whereby sealing material may be flowed into the groove 16 and onto the depressed central portion 20, to coat the underside of the cover part of the cap with the non-corrosive sealing material (Fig. 2). This is very desirable because it prevents products which are packed in the container and have a slightly chemical nature, from corroding the metal of the closure.

In Fig. 4, a slightly different type of groove is illustrated wherein the upper part 21 of the groove is provided with an upwardly extending wedge shaped rib or supplemental groove 22. This rib prevents the sealing material, when poured into the cup, from wrinkling during application of the closure or from shifting in the groove 16 to insure proper sealing of the container when the cap is rotated thereon.

In Fig. 5 the present invention is shown applied to one-piece cap construction. By making the button or cover part integral with the skirt, the seams 6 and 7 are eliminated and the manufacturing operations are simplified.

Fig. 6 illustrates the invention applied to a closure cap, preferably made of relatively pliable metal such as tin plate, having a "tear-off" band 29 at the lower edge of the skirt provided with a tongue or gripping portion 30. The cap is provided with threads 11 adapted to engage the container threads 12 and the band 29 thereafter may be crimped inwardly below a suitable ledge 31 at the side wall of the container. When the package is desired to be opened, the band 29 is torn off and the cap is unscrewed. The threads 11 facilitate the replacement of the cap upon the container for reseal purposes. The sealing material 17, flowed into the groove 16, is adapted to provide a very efficient hermetic seal.

In Fig. 7 of the drawings, another type of closure is shown wherein the top portion 4 and body portion 5 are secured together, as described hereinbefore, with the sealing material 17 in a groove 16. Instead of being provided with threads, as illustrated in Fig. 1, for securing the closure to the container, the cap is provided with a plurality of lugs 32 formed by setting inwardly the rolled edge at the bottom of the skirt of the cap at intervals about the periphery. Any desired number of lugs may be utilized, preferably two or three. These lugs engage corresponding threads or projections 34 on the containers, which are provided with suitable stops 35 for limiting the rotating movement of the cap. These lugs are very efficient as holding means for the cap and pull the skirt downward evenly throughout its periphery to form a very secure seal. In addition, the cap may be applied and removed with approximately a half turn, whereas the continuous thread requires one or more turns of the cap. In addition, the lugs provided at the bottom of the cap permit the upper portion of the cap to be corrugated, as shown, and the portion 36, at the bottom of the cap, may be left plain for printed or other type of advertising matter. These, and other advantages, render this cap particularly useful both with the type of bottle illustrated herein and with types known heretofore in the art.

The caps preferably are made by stamping out the button part 4, placing sealing material into the annular groove and on the disc part 20 while in a plastic condition, permitting the sealing material to harden or set by passing the button part through an oven, and thereafter attaching a skirt part 5 to the button part.

The caps may be applied by hand or automatic sealing machinery, so that the sealing material in the groove fits against the lip or rim of the bottle forming a secure vacuum or hermetic seal.

It will be seen that the present invention provides a construction which may be readily and inexpensively manufactured. It eliminates the necessity of using two closures, namely a packing seal and a reseal cap, by providing a single cap which accomplished both functions. Furthermore, it is adapted to form a more secure seal than those heretobefore employed by reason of the fact that the gasket is of a gummy substance and is held more securely against the rim of the container by the resiliency of the button. Furthermore, the cap may be used to form a hermetic reseal adapted to preserve the contents until dispensed. Similar reseal closures have, heretofore, served merely as cover caps to prevent access of dust and the like. The assembling and packing operations are also simplified by reducing the number of closures applied. The removal of the caps may be facilitated by providing a tear-off band, as shown in Fig. 6. The caps are attractive and fully capable of meeting all the requirements of both the packer and consumer.

As various changes may be made in the form, construction and arrangement of parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all

matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. A cover part for a two-piece closure cap comprising a sheet metal disc member having a peripheral flange bent upwardly therefrom, an annular groove formed in said disc member adjacent to but spaced from said flange, the sides of said groove being of different lengths, with the shorter side nearest the center, the central portion of said disc being substantially flat and level with the end of the shorter side of the groove, and a sealing material of rubber composition in said groove adhered directly to the metal disc and having sufficient depth to form a thin layer extending over the central portion of the disc whereby the sealing material is relatively thick in the groove for engaging the rim of the container to form a seal and relatively thin over the central portion of the disc for protecting the disc against the contents of the container.

2. In a two-piece closure cap, the combination of a cylindrical body member having container engaging means therein for securing the cap to a container, and a sheet metal disc member having a peripheral flange bent upwardly therefrom and seamed to one end of said cylindrical disc member, an annular groove of substantially trapezoidal cross-section formed in said disc member adjacent to but spaced from said peripheral flange, the sides of said trapezoidal shaped groove being of different lengths, with the shorter side nearer the center, the central portion of said groove being substantially flat and flush with the periphery of the shorter side of the groove, and a sealing material of rubber composition in said groove adhered to the metal disc and having sufficient depth to form a thin layer extending over the central portion of the disc, whereby the sealing material is relatively thick in the groove for engageing the rim of the container to form a seal and relatively thin over the central portion of the disc for protecting it against the contents of the container.

3. A closure cap comprising a cover part having an annular groove formed therein substantially at the outer periphery thereof and having a substantially flat central portion, a sealing material flowed into and adhered in said groove and having a greater thickness than the depth of the groove to form a thin layer extending over the central portion of the cover part, whereby the sealing material is relatively thick in the groove for engaging the rim of a container and relatively thin over the central portion of the cover part to protect it against the contents of the container, and a depending skirt having screw means for engaging cap attaching means on a container.

4. In a sealed package, the combination of a container having a rim and screw cap engaging means below the rim, and a closure cap having a cover part and a depending skirt provided with screw means for engaging said screw means on said container, said cover part having an annular channel of greater width than the rim of the container and having a substantially flat central portion, and a sealing material adhered in said groove having the rim of the container embedded therein, said sealing material being of greater thickness than the depth of the groove and extending over the central portion to provide a thin layer of sealing material adapted to protect said cover part against the contents of the container.

EDGAR SCOFIELD.