July 5, 1927. 1,634,724

G. RAMSEY

SEALING CAP AND PACKAGE

Filed Jan. 27, 1921

Fig. 1.

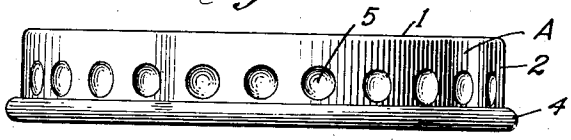


Fig. 3.

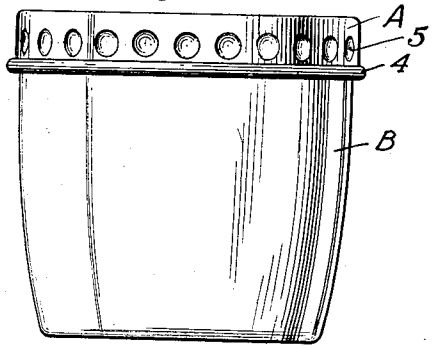


Fig. 2.

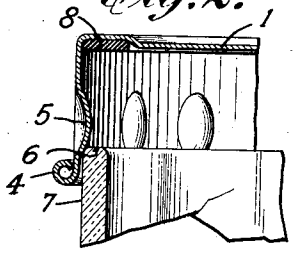


Fig. 4.

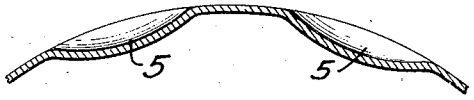


Fig. 5.



Fig. 6.

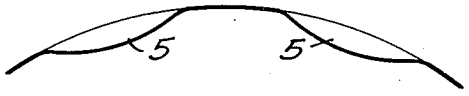
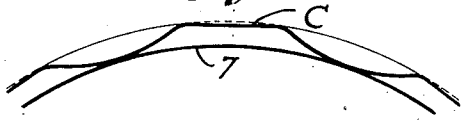


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE RAMSEY, OF BROOKLYN, NEW YORK, ASSIGNOR TO ANCHOR CAP AND CLOSURE CORPORATION, OF LONG ISLAND CITY, NEW YORK, A CORPORATION OF NEW YORK.

SEALING CAP AND PACKAGE.

Application filed January 27, 1921. Serial No. 440,300.

This invention relates broadly to closures and packages, and more specially to a closure of the friction type.

The principal object of the present invention is to provide a friction cap with an elastic skirt provided with friction buttons located at intervals around the skirt of the cap.

A further object of the present invention is a cap of the character specified wherein the skirt of the cap is provided with depressions forming a row of buttons on the interior of the skirt with cylindrical portions in the skirt between the buttons.

A still further object of the present invention is a cap of the character specified wherein the cylindrical portions are adapted to flatten when the cap is forced over the mouth of a suitable container so that the cylindrical portions become elastic tangential connecting members between the friction buttons.

A still further and primary object of the present invention is a package formed by forcing a cap of the character specified over a suitable container, preferably one having a substantially incompressible side wall, whereby the spots or buttons are tightly clamped against the side wall of the mouth of the package to hold the cap in position.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter in the specification following by reference to the accompanying drawings forming a part of this application and wherein like parts are represented by like characters throughout the several figures thereof.

It is realized that the present invention may be embodied in constructions other than those specifically herein shown therefore it is desired that the present disclosure shall be understood as illustrative and not taken in the limiting sense.

Figure 1 is an elevational view of the cap forming one embodiment of the present invention.

Figure 2 illustrates a section of the cap showing a gasket above the friction buttons and being adapted to form a top seal with the end wall of a suitable container.

Figure 3 illustrates a package with the cap in place thereon.

Figure 4 is an enlarged sectional view through a portion of the skirt of the cap.

Figure 5 illustrates the portion of the cap skirt shown in Figure 4 in position on the side wall of the container.

Figure 6 is a diagrammatic view of the part shown in Figure 4.

Figure 7 is a diagrammatic view illustrating the deformation of the cap, as shown in Figure 5, when applied to a suitable container.

Heretofore in the art of friction caps there has been several types, the most common comprising cylindrical walled cap which was usually used on metal containers such as tin cans, or the like, having suitable elasticity in the container sealing wall. Another type of friction cap has comprised a cap having a depending skirt provided with a continuous sealing bead therein. In this type of cap the entire bead acts as a constricting member to provide a very tight sealing zone and to afford further limits in sealing than was provided by the cylindrical walled cap.

A still further type is a type of cap having continuous configurations in the skirt of the cap whereby the entire skirt tends to stretch during the sealing operation. In this type of cap a further elasticity is obtained and a relatively tight seal is provided.

The present invention provides a sealing cap adapted to be taken off and replaced frequently thereby necessitating a wide range of elasticity in the skirt of the cap so that the cap may be used many times without destroying the holding features and without requiring excessive force to remove the cap, whereby danger of breaking or spoiling the cap is minimized during removal and application otherwise the cap could not be re-used.

While the cap comprising the present invention may be embodied in different forms the preferred embodiment comprises a cap having a substantially cylindrical skirt depending from the cover portion and wherein a plurality of wedge-like friction members are spaced apart in the cap skirt sufficiently to permit the material in the skirt to flatten from the cylindrical or rounded form into a plurality of flattened surfaces or tangential portions, between the friction buttons. Since the straightening of the cylindrical portion of the skirt permits a slight outward movement of the buttons it affords a slight

increase of diameter for the innermost portions of the buttons and thereby enables the cap to be yielding while being forced over the end of the suitable container.

Where the device is utilized on glass this ability of the buttons to slightly move outward permits the cap to be used on a wider range diameters of ware than is possible with a continuous sealing bead.

Furthermore the shape of the buttons, being preferably that of a portion of a sphere, facilitates the forcing of a cap over the edge of the container mouth by acting as wedge members which slide over the end wall of the container. Where it is desired to maintain a hermetic seal, a suitable gasket may be utilized with the cap in order to provide an air tight joint between the cap and the container, while the buttons may be relied upon to maintain the gasket in engagement with the end wall of the container when the cap is once securely seated in position.

Referring now to the drawings which illustrate one embodiment of the invention, a cap A comprises a cover portion 1 from which a suitable skirt 2 depends and the edge of the skirt may be provided with a rolled bead or the like 4. Preferably the skirt 2 is substantially cylindrical in form and is provided with a plurality of buttons 5 comprising depressions on the exterior of the skirt and projections on the interior of the skirt. These interior projections are preferably formed to comprise portions of spherical surfaces whereby the projections may be forced over the edge 6 of the sealing zone 7 on a suitable container B with a wedge-like action when force is applied to telescope the cap and the container. These buttons 5 preferably are slightly spaced apart to provide cylindrical portions of the cap between adjacent buttons as is illustrated in section in Figure 4 and diagrammatically in Figure 6; these buttons are shallow in depth and have a wide spread, both circumferentially and lengthwise of the skirt of the cap thereby transmitting the expanding force (when the cap is forced over a container) as a bending action to the cylindrical portion of the cap between the buttons 5. When the cap is applied over the non-yielding side wall, as for example, the side wall 7 of a glass container as indicated in Figures 5 and 7, the cylindrical portions tend to flatten as at C Figures 5 and 7. Dotted lines indicate the original position of the cylindrical portions and shows how the skirt of the cap stretches when the cap is applied. The skirt of the cap normally tends to return to cylindrical form due to elasticity of the metal and therefore continually forces the buttons 5 tightly against the side wall of the container. The bead 4 when used not only forms a finish for the lower edge which also forms a strengthening member which adds to the tendency of the portion C returning to cylindrical form and thereby adds to the effectiveness of the cap.

From the foregoing it will be clear that the cap may be easily applied by telescoping the same relatively to the mouth of the container thereby forming a package from which the cap may be readily removed, and where a hermetic seal is desired a gasket 8 may be applied to the upper edge of the cap so that the gasket will rest upon the end wall of the container when the cap is telescoped completely to its extreme limit of movement relatively to the container.

Having thus described my invention, what I claim is:

1. A closure cap comprising a cover portion, a cylindrical skirt depending from said cover, a plurality of rounded sealing buttons in said cylindrical skirt, the depth of said buttons being small as compared with the diameter thereof, and said buttons being spaced from each other a distance substantially equal to the diameter of a button, the portion of the skirt between the buttons being cylindrical before application to a vessel and deformed as a result of application.

2. A closure cap comprising a cover portion, a skirt depending from said cover, a plurality of rounded sealing buttons in said skirt on a common circumference, the depth of said buttons being small as compared with the diameter thereof, and said buttons being spaced from each other a distance substantially equal to the diameter of a button, the portion of the skirt between the buttons being cylindrical before application to the vessel and deformed as a result of application, and a rolled edge about the bottom of said skirt.

3. A package comprising a container having a substantially cylindrical sealing portion adjacent the mouth thereof, in combination with a closure cap comprising a cover portion, a cylindrical skirt depending from said cover portion, a single row of sealing buttons extending circumferentially of said skirt, said buttons comprising small portions of spherical surfaces having a relatively large radius, the depth of said buttons being small as compared with their width, whereby said buttons have a wide spread both circumferentially and transversely of said skirt to afford greater flexibility in a circumferential direction, thereby to accommodate containers having a greater range of variation from a standard size.

GEORGE RAMSEY.