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E. SCOFIELD

FRICTION RETAINED CLOSURE

Filed Feb. 25, 1925

Fig. 1.

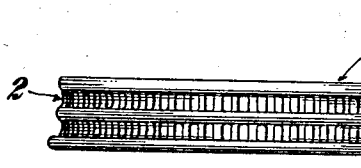



Fig. 2.

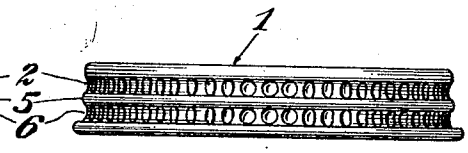



Fig. 3.

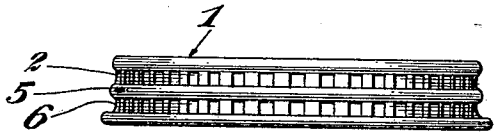
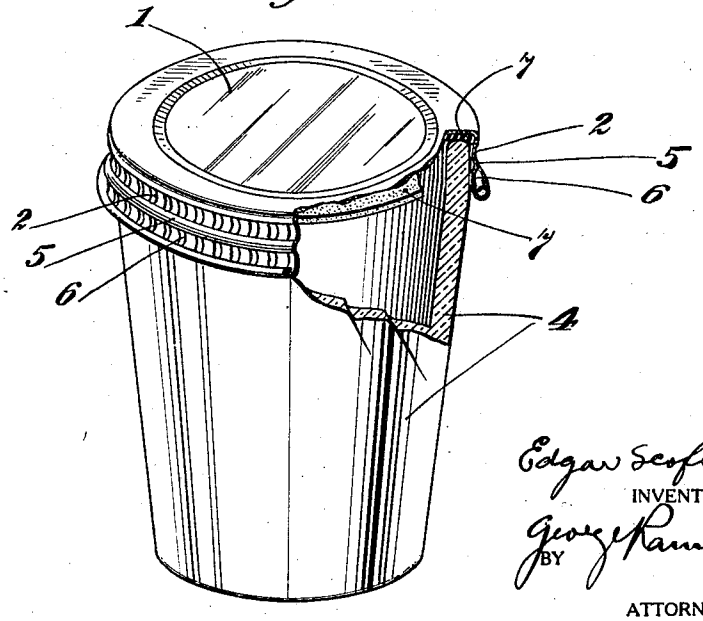



Fig. 4.




Edgar Scofield
INVENTOR

BY George Ramsey
ATTORNEY

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# UNITED STATES PATENT OFFICE.

EDGAR SCOFIELD, OF NEW YORK, N. Y., ASSIGNOR TO ANCHOR CAP AND CLOSURE CORPORATION, OF LONG ISLAND CITY, NEW YORK, A CORPORATION OF NEW YORK.

## FRICTION-RETAINED CLOSURE.

Application filed February 25, 1925. Serial No. 11,433.

This invention relates broadly to closures and more especially to a closure cap of the friction type, and this application for patent is a continuation in part of my prior application Serial No. 390,742, filed June 22, 1920.

The type of friction cap to which this invention belongs is adapted for use upon cylindrical mouthed vessels and is frequently used upon glass containers. In the manufacture of pressed glass packers' jars the portion of the ware adjacent the mouth is usually formed with a slightly inwardly inclined zone near the end of the vessel, so that this portion of the container comprises a small frustrum of a cone. The zone beneath the upwardly inclined portion is either cylindrical or inclined in the opposite direction, namely, inclined downwardly.

Friction caps which have a single sealing zone and contact solely with the sealing wall of the vessel, very close to the mouth thereof, bear upon the inwardly and inwardly inclined surface, which tends to cause the cap to cam off; yet it is desirable that the cap shall be securely held in position at this point because it is desirable to have the rigidity adjacent to the gasket liner, which is usually employed with caps of this character.

The present invention therefore has as an object, the provision of a friction sealing cap having one sealing zone adjacent the lower edge of the skirt of the cap and remote from the end of the vessel when the cap is in place, and also another sealing zone adjacent the crown of the cap to provide rigidity near the gasket.

Another object of the present invention is the provision in a friction cap of a plurality of sealing friction zones which successively come into action when the cap is applied to a vessel.

A further object of the present invention is the provision in a friction cap of a plurality of friction zones so constructed that the sealing of the cap tends to increase the effectiveness of certain of the sealing zones.

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

Realizing that the present invention may be embodied in constructions other than those herein specifically disclosed, the disclosure herewith is to be understood as illustrative and not in the limiting sense.

Figure 1 illustrates a preferred form of the present invention.

Figure 2 illustrates a slight modification in the friction members, otherwise the cap is similar to that shown in Figure 1.

Figure 3 illustrates a still further form of friction contact members.

Figure 4 is a view showing a package with parts broken away, which package is sealed with the cap according to the present invention.

Referring now to the drawings, and more especially to Figures 1 and 4, the cap comprises a crown or cover portion 1 from which depends a corrugated cylindrical skirt that may if desired be finished with a rolled edge. This skirt is provided with a sealing zone 2 which may if desired be constructed with indentations adapted to form contact members with the side walls of a vessel 4. Preferably, a zone 5 adjacent the friction member zone 2 is an outwardly extending bead which acts in the nature of a neutral band between the upper sealing zone 2 and a lower sealing zone 6, which lower zone also may or may not be provided with indentations, as is desired. Preferably, a gasket 7 is arranged beneath the cover portion 1 and is adapted to set against the end wall of the container 4 to form a liquid tight seal.

It has been observed that in applying caps made in accordance with the invention herewith, that as the cap when being telescoped over the packing vessel undergoes an action whereby the upper zone is apparently made smaller so that when the cap is completely pressed home the upper sealing zone exercises a very tight sealing action against the side wall of the vessel and adjacent to the gasket 7. The lower sealing zone 6 is sufficiently removed from the mouth of the container to be away from and below the conical part of the container and therefore tends to tightly hold the cap in position on the container, thereby making a secure and an efficient seal. Furthermore, because of the

provision of the plurality of sealing zones, in which sealing forces are distributed, the present cap seals equally well on vessels having inclined finish as well as those having a cylindrical finish. It has also been found in connection with this cap that the cap may be applied successfully even when canted or tilted in position on the container before the application of sealing pressure, in that the cap tends to straighten itself before it has been distorted, as is often the case with a canted single sealing zone cap in which distortion is liable to make a defective seal.

Having thus described my invention, what I claim is:

1. In a closure cap; a skirt comprising a pair of annular zones spun inwardly to form container grasping means, each of said zones being corrugated to adapt it for expansion to size it to the individual container to which the closure may be applied; and a connecting band between said zones, said band being adapted to be deformed when the closure is applied to a container.

2. In a closure cap; a pair of concave annular zones forming a pair of container grasping means, each of said zones being corrugated to render it expansible and thereby adapt the container grasping means to be sized to the individual container to which the closure may be applied; and an annular convex band connecting said zones together.

3. In a closure cap; a skirt comprising a pair of annular zones extending inwardly to form container grasping means, each of said zones being corrugated to adapt it for expansion to size it to the individual container to which the closure may be applied; and a smooth connecting band between said zones.

4. In a closure cap; a skirt comprising a pair of annular zones spun inwardly to form container grasping means, said zones being formed with alternate indentations and prominences comprising friction means to retain the cap upon a container to which the closure may be applied; and a connecting band between said zones, said band being adapted to be deformed when the closure is applied to the container.

5. In a closure cap, a skirt comprising an annular zone extending inwardly adjacent the lower edge of the skirt to form a container grasping means, a similar zone adjacent the crown of the cap, said zones being formed with alternate indentations and prominences to render the same expansible and thereby adapt the skirt of said cap to be sized to the individual container to which the closure may be applied and a plain annular band between said sealing zones.

6. A package comprising a container having a substantially cylindrical wall adjacent its mouth, in combination with a closure comprising a skirt having a corrugated expanded zone grasping said container contiguous to its mouth, a second corrugated expanded zone grasping said container beneath the first expanded zone and a plain annular band between said sealing zones.

7. A package comprising a container having a substantially cylindrical wall adjacent its mouth, in combination with a closure comprising a skirt having a corrugated expanded zone grasping said container contiguous to its mouth, a second corrugated expanded zone grasping said container beneath the first zone, and a plain band of metal connecting said zones together.

8. In a closure cap, a skirt comprising a pair of concave annular zones adapted to grasp the side wall of a container to which the closure may be applied; and a band connecting said zones together adapted to yield a maximum amount when the closure is applied to a container.

9. As an article of manufacture, a closure cap comprising a cover portion; a depending skirt; a pair of concave annular zones in said skirt adapted to grasp the side wall of a container to which the closure may be applied; and a plain band connecting said zones together to permit said band to yield a maximum amount when the closure is applied to a suitable container.

10. As an article of manufacture, a closure cap comprising a cover portion; a depending skirt; a pair of concave annular zones in said skirt adapted to grasp the side wall of a container to which the closure may be applied; the lower of said sealing zones being slightly larger in circumference than the upper to facilitate application thereof; and a plain band connecting said zones together to permit said band to yield a maximum amount when the closure is applied to a suitable container.

EDGAR SCOFIELD.