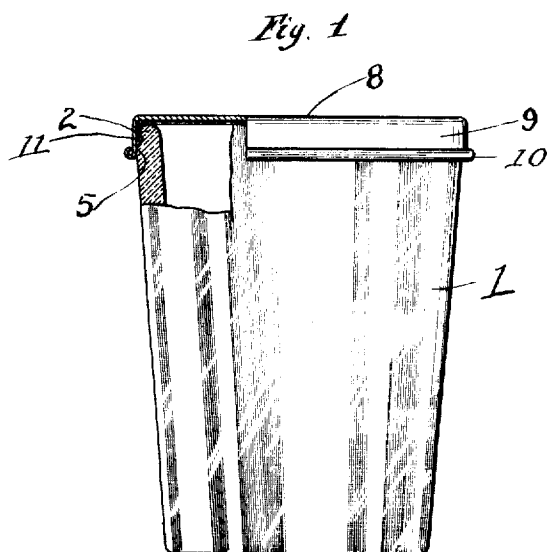
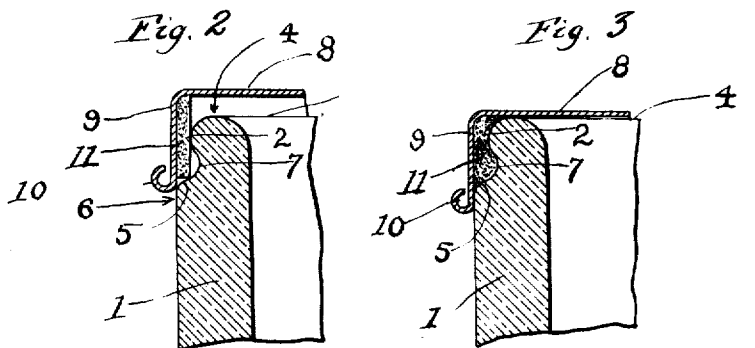


H. E. TOWNSEND.
SEALING CAP.
APPLICATION FILED OCT. 10, 1916.

1,242,741.

Patented Oct. 9, 1917.



INVENTOR
Harry E. Townsend
BY
Ramsey and Parmelee
ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY E. TOWNSEND, OF BROOKLYN, NEW YORK, ASSIGNOR TO ANCHOR CAP & CLOSURE CORPORATION, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

SEALING-CAP.

1,242,741.

Specification of Letters Patent.

Patented Oct. 9, 1917.

Application filed October 10, 1916. Serial No. 124,861.

To all whom it may concern:

Be it known that I, HARRY E. TOWNSEND, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Sealing-Caps, of which the following is a specification.

This invention relates to packages and more particularly to a package comprising a glass container to which a suitable metallic cap may be hermetically sealed.

One object of the invention is to provide an improved side sealing device to effect a union between the closure and the container; another object is to utilize atmospheric pressure to retain or to seal the cap in position when the package is sealed in a vacuum; and a still further object is to secure a combined mechanical and pressure seal.

Other and further objects will in part be obvious, and will in part be pointed out hereinafter by reference to the accompanying drawings wherein like parts are represented by like characters throughout the several views thereof.

Referring now to the drawings, Figure 1 is an elevation, partly in section, of my improved package. Fig. 2 is a sectional detail showing the position of the closure before sealing. Fig. 3 is a similar detail showing the position of the parts after sealing.

In the packing of products, especially food products in glass and under a vacuum, various methods of sealing the closure to the glass container have been used. One method heretofore in use, known as the "top seal" employs a metallic closure having a sealing gasket of suitable material located between the closure and the top of the container wall, whereby when the cap is placed in position and the air is exhausted from the container, atmospheric pressure will tend to press the cap downward upon the container, thereby compressing the gasket and maintaining a more or less effective seal so long as there is a substantial difference of pressure inside and outside of the package. For certain uses this seal is unsatisfactory because the loss of the vacuum within the package for any reason may reduce the holding power of the closure so that rough handling as in shipping may cause the cap to fall off

thus exposing the contents of the package. Another difficulty encountered in the use of such caps is that in the manufacture of the glass containers, the most imperfect part of the glass is the top edge, which is often filled with "sand cracks" and rough broken edges which prevent the formation of an airtight seal such as is necessary not only to protect the contents of the package, but also to maintain the cap upon the container.

These defects are not present in a second method heretofore in use in which a "side seal" is employed. In this instance the cap is provided with a beading that surrounds the upper part of the container wall and incloses the gasket which is mechanically forced against the side wall of the container to effect the seal. The glass at this point is generally free from flaws, and as the seal is mechanically formed, the closure will continue to grip the container, even should the package lose its vacuum. On the other hand, however, this form of cap is more costly than the type first described, and it requires more complicated and expensive machinery to perform the capping operation.

In the packing of food products especially, it is not only of vital importance to protect the contents of the package effectively; but it is also of vital importance to reduce the cost of the package to the lowest possible amount.

By my invention, I am able to retain all the advantages of the side sealing closure and at the same time provide a package that is no more expensive to manufacture than the top seal style, and one that may also utilize atmospheric pressure to help maintain the seal.

As shown in the drawings, I may construct the wall 1 of the container with a concave beading 2 located near the upper part of the wall. This beading 2 is located sufficiently below the top 4 of the wall, to prevent its being substantially affected by sand cracks or rough edges. Below the beading 2 a shoulder 5 is formed which joins the beading to the glass wall of the container as at 6. Between the beading 2 and the shoulder 5, I preferably form the glass into a convex beading 7, the diameter of which is somewhat less than the diameter of the shoulder 5. A section through the

sealing surface comprises an ogee curve extending substantially vertically from the main side wall.

The closure in its preferred form has a flat top 8, a depending flange 9, with the flange terminating in a beading roll 10. The depending flange 9 is preferably a straight walled cylinder, the interior diameter of which is substantially that of the exterior diameter of the main side wall adjacent the shoulder 5, so that when the flange 9 engages the side wall, as at 6, a relatively tight joint is formed to prevent undue leakage of the gasket material from beneath the flange. The material comprising the gasket 11, as shown in Fig. 2 is preferably formed rectangular in section and is inserted in the cap abutting the inner side of the flange 9. Its thickness as shown in the figure is preferably equal to the difference between the radius of the beading 2 and the radius of the side wall 6 where it joins the shoulder 5. The flange 9 of the cap on closure forms a rather close fit over the shoulder 5.

In applying the cap, it is first put upon the container as shown in Fig. 2, with the gasket 11 resting upon the shoulder 5. A direct downward pressure is then applied which forces the gasket material into the form shown in Fig. 3. This downward movement creates more or less lateral pressure upon the gasket material so that a mechanical seal is effected which has considerable holding and sealing power whether there is a vacuum within the package or not. When the container is exhausted of air before the cap is pressed downward, the atmospheric pressure upon the cap which also acts in a downward direction will tend to slightly cup the cap and draw the gasket more firmly against the beading thus helping to maintain the seal. This is an additional advantage secured over the side seal cap now in use, as in the latter style of cap, the atmospheric pressure does not assist in holding the cap in place; while with my cap, I not only secure all the advantages of side sealing and mechanical sealing; but I also utilize the atmospheric pressure to render the seal still more permanent in all cases where the container is sealed under vacuum.

Realizing that it is possible to slightly vary the specific construction herein disclosed, I desire that this specific disclosure be considered as illustrative rather than in the limiting sense.

Having thus described my invention what I claim is:—

1. In combination, a container having a rounded bead adjacent the mouth thereof, a groove beneath said bead and forming a shoulder with the exterior wall, a sealing cap having a skirt the interior diameter of which is substantially coincident with the

diameter of the exterior wall of the container and greater than the diameter of the bead and with the edge of said skirt in close engagement with said wall, and a gasket under compression and filling the space between said skirt and said groove.

2. In combination a container having a sealing surface substantially representing an ogee curve in cross-section and extending to the outer main side wall, a cap provided with a substantially cylindrical skirt with an interior diameter substantially the same as the exterior diameter of the main side wall where said side wall joins the sealing surface whereby the skirt of the cap is enabled to closely engage the main side wall of the container, and a gasket substantially filling the space between the sealing surface and the said skirt.

3. In combination a substantially cylindrical container provided on its upper end with a bead and a recess, said bead being of less diameter than the exterior diameter of the main side wall of said container, a cap provided with a skirt having an interior diameter substantially the same as the exterior of the main side wall where said wall joins said bead, and a gasket under compression adapted to fill the space between said skirt and said sealing surface.

4. In combination a container provided with a sealing surface upon the upper side wall thereof, said sealing surface including a projecting member and a depression beneath and adjacent said projecting member, a cap provided with a substantially cylindrical skirt adapted to extend over said projection and depression and to closely engage the side wall of said container, and a gasket filling the space between the sealing surface and the said skirt.

5. As an article of manufacture, a package comprising a container provided with a sealing surface which is upwardly and inwardly inclined and of substantially S-shaped cross-section, a substantially flat sealing cap provided with a cylindrical skirt adapted to extend over said sealing surface, and a gasket filling the space between said sealing surface and said skirt, the construction and arrangement of parts being such that where a vacuum is maintained within the sealed package the cap is drawn inwardly and downwardly to more securely compress the gasket against the sealing surface.

6. The method of sealing a container which comprises; providing a container with a bead and groove sealing surface, the groove forming a shoulder with the side wall of said container; providing a substantially flat sealing cap having a substantially cylindrical skirt; and further providing a relatively plastic gasket in the form of a section of a tube and adjacent said skirt;

then forcing said skirt over said shoulder and flowing the gasket into the groove and under the beading.

7. The method of sealing a package which includes providing a container having a sealing surface comprising a groove adjacent the mouth thereof and a side wall adjacent said groove, said wall comprising the maximum diameter of the said container;

then providing a cap having a skirt of slightly less diameter than the said side wall and carrying a malleable or plastic gasket; then forcing said skirt over said side wall and flowing said gasket under compression into the space between said skirt and the sealing surface.

HARR - E. TOWNSEND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."