H. E. TOWNSEND.

TOP AND SIDE SEAL CLOSURE.

APPLICATION FILED JAN. 10, 1917.

1,292,541. Patented Jan. 28, 1919

Fig. 3.

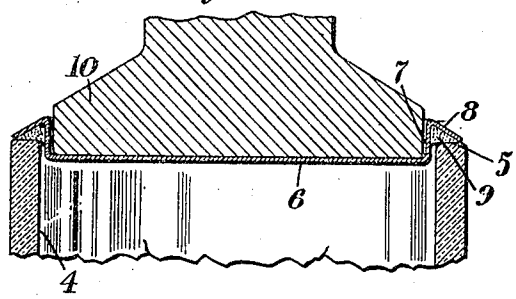


Fig. 2.

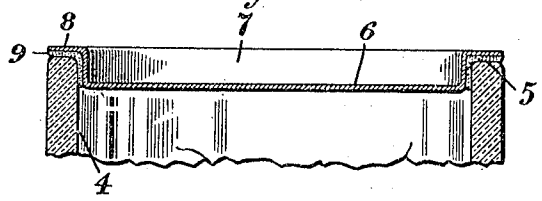
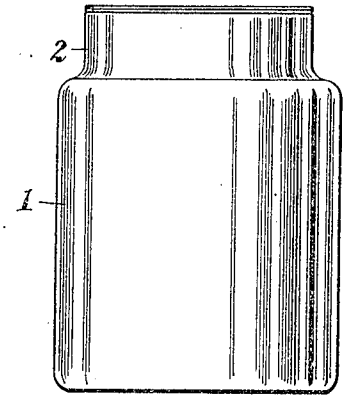


Fig. 1.



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UNITED STATES PATENT OFFICE.

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TOP AND SIDE SEAL CLOSURE.

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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 Top and Side Seal Closures, of which the following is a specification.

This invention relates to closures and more particularly to a closure constructed to be formed into a top and inside seal, and also to the method of forming such a seal.

Among the various objects of this invention is the provision of a closure adapted to seal upon the top and inside of substantially a straight walled glass container; and also to provide a seal which does not extend outwardly beyond the side walls of the glass container to obviate the loosening or breaking of the seal during shipment or handling of the sealed package. This type of seal also obviates breakage in that the seal may be positioned without the action of clamping dies and the major sealing forces are sustained directly by the upper edges of the straight walled container which are better adapted to sustain such forces than is any other portion of the glass container. This type of cap also provides a very economical closure, both from the manufacturing and the sealing standpoint.

This invention also includes the method by which a secure closure may be effected by a top and inside seal.

Referring now to the drawings—Figure 1 is an elevational view illustrating a glass container with a closure in position thereon.

Fig. 2 is a sectional view through the mouth of the glass container and showing the closure seated thereon.

Fig. 3 illustrates the closure loosely positioned upon the glass container and prior to the beginning of the sealing operation.

It is the modern tendency to package food products in small hermetically sealed packages and the cost of suitable closures is of very great importance, since these closures are adapted to be used but once and then are destroyed. There are certain types of packages wherein hermetic sealing is of primary importance, and such sealing usually requires a relatively expensive closure and relatively expensive sealing machinery, particularly where such hermetic seals are formed under vacuum.

The device comprising the present invention, and which will hereinafter be explained in detail by reference to the accompanying drawings, comprises a shallow cup adapted to fit within the mouth of a suitable glass container with a slight clearance between the side walls of the cup and the inside side walls in the mouth of the container, and having an annular flange inclined downwardly and outwardly from the side walls of the cup to provide a receptacle for suitable gasket material and to provide a construction wherein the edge of the rim rests upon the top of the glass container. Where this closure is used in forming a seal under vacuum the closure is loosely placed in position on the mouth of the glass container and after the vacuum has been formed the closure is positioned by forcing the closure downwardly within the mouth of the container. This causes the edges of the annular ring to seat tightly upon the top of the glass container thereby forming a seal of sufficient strength to cause the gasket material to flow inwardly and downwardly over the side walls of the closure and the inner side walls of the glass container thereby effecting a top and side seal with sufficient mechanical retention to retain the closure upon the container to form a completed package. Since the closure is stamped from flat sheet metal originally and is formed in shape by suitable dies, it will be noted that when the closure is finally positioned the annular ring has been returned to substantially flat relation which is the normal stable condition of the metal, hence there is substantially no tendency to metallic spring in any of the parts which might tend to loosen the closure.

Referring now to the drawings, the glass container 1 may, if desired, be provided with a slightly restricted mouth portion 2 which preferably has a straight walled interior surface, as at 4, and preferably is provided with a straight top walled surface 5. The closure is provided with a cover portion 6 which depends from vertical annular side walls 7 to which are integrally attached a downwardly and outwardly inclined ring 8, thereby forming an under receptacle or groove for a suitable plastic gasket 9. When vertical pressure is brought to bear against the gasket, as for example by means of the internal sealing head 10, the ring 8 is slightly

flattened to substantially right angles to the annular walls 7. During this operation the plastic gasket is flowed over the top of the container wall and between the annular wall 7 of the closure and the side walls 4 of the glass container.

Since the side walls of the closure are spaced from the inner side walls of the container and this space is filled by the flowing of a suitable plastic gasket it will be noted that this type of closure allows for variation in glass sizes since such variation is taken up by the plastic gasket. Furthermore, any rough variations on the upper surface are likewise, accommodated by the plastic gasket which extends between the said upper edge and the flattened ring of the closure.

Having thus described my invention what I claim is:

1. A closure comprising a cover member adapted to fit within the mouth of a straight walled container, a substantially smooth cylindrical rim extending at substantially right angles to said cover member and adapted to be parallel with the inner wall of said container, an annular ring carried by said rim and angularly disposed relatively thereto in such manner that a diametrical cross-section through said closure discloses an acute angle between said rim and said ring, said ring comprising the frustum of a cone, and a plastic gasket material filling the said acute angle whereby the increasing of the acute angle between the ring and the rim due to resting the ring on the end wall of the container and applying pressure to the cover portion will displace the gasket material downwardly and inwardly.

2. A sealed package comprising a container with substantially incompressible side walls, in combination with a closure formed of a cover member fitting within the mouth of said container, a substantially smooth cylindrical side wall extending upwardly and substantially parallel to the side wall of the container, a ring carried by said side wall and extending outwardly therefrom, and a gasket flowed inwardly between said ring and the end of said container to comprise a top and side seal to maintain a vacuum within said container whereby air pressure on said cover is sustained by said ring with the periphery of said ring sustaining the major portion of said pressure.

HARRY E. TOWNSEND.

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