Aug. 31, 1937. E. A. O'NEIL 2,091,877

CLOSURE FOR CONTAINERS

Filed Sept. 9, 1936

Fig. 1

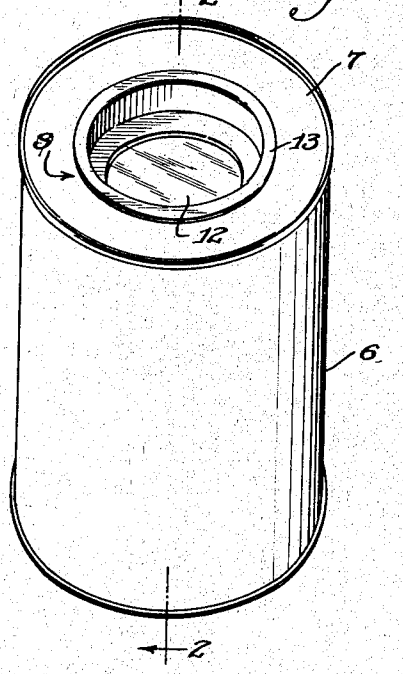


Fig. 2

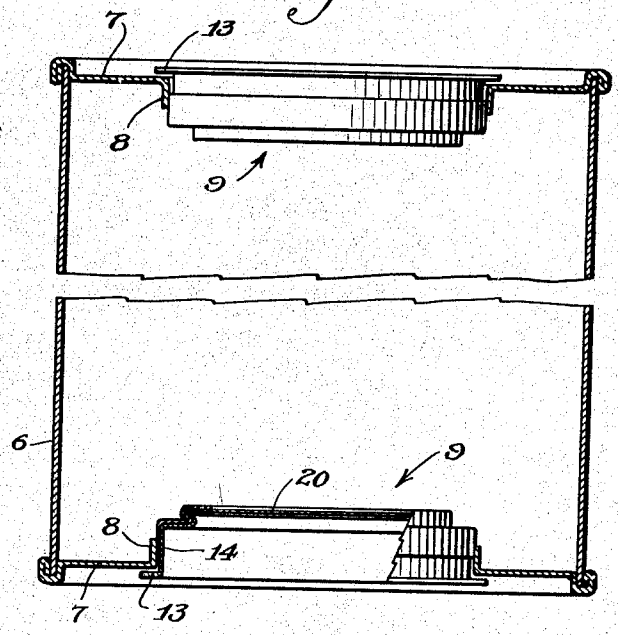


Fig. 4

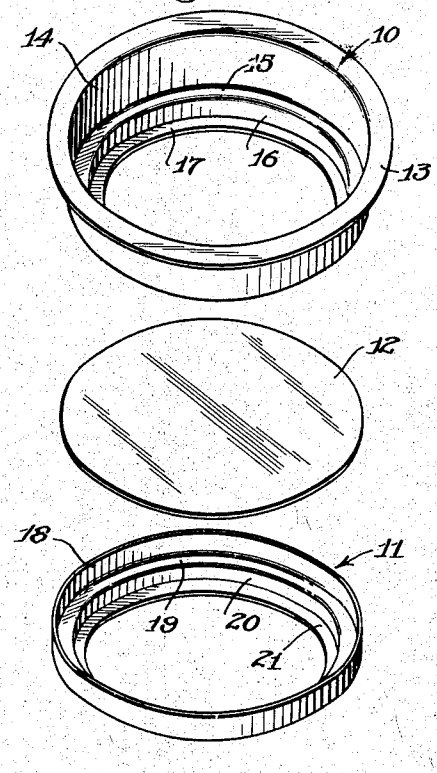
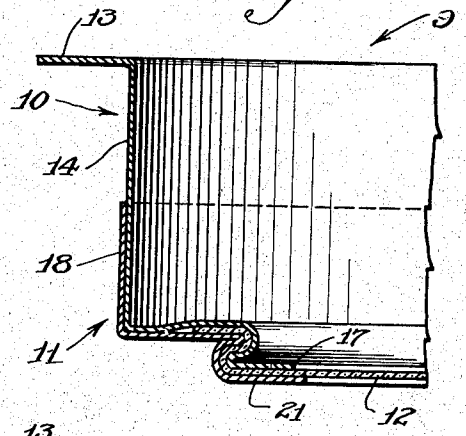


Fig. 3



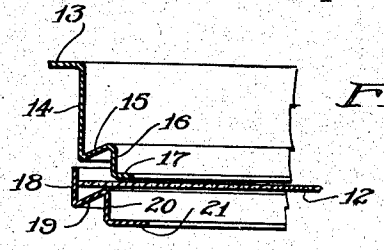


Fig. 5

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CLOSURE FOR CONTAINERS

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4 Claims. (Cl. 220—27)

The present invention relates to closures or sealing devices for containers and the like, and more particularly to articles of this character wherein is provided a window or opening having a closure of transparent material.

The primary object of the invention is to provide a closure or sealing device adapted for use in conjunction with standard types of containers now in common use, the closure being formed of transparent material thereby affording visual inspection of the contents of the container without destroying the seal thereof.

A further and more specific object resides in the provision of a sealing device for containers, the same comprising complemental ring members of novel form so that upon the application of pressure the ring members will be caused to securely grip a sheet of transparent material thereby forming a hermetic seal for the container thru which the contents may be inspected.

A further object of the invention is to provide seal forming rings or flanges adapted to be affixed to a metallic container or can, the novel formation of the rings being such as to permit economic fabrication by the well-known production methods.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms part of the application.

In the drawing:

Fig. 1 is a perspective view of a typical container or can including the sealing device affixed thereto.

Fig. 2 is a central vertical section thru the container taken on line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary sectional view thru the sealing device illustrating the manner of crimping the sealing members to retain the transparent closure element.

Fig. 4 is a perspective view of the several sealing elements of the device; and

Fig. 5 is a sectional view similar to Fig. 3 but illustrating the elements arranged preparatory to forming the seal.

Briefly stated, the invention resides in the provision of a pair of complemental rings, one of the rings being adapted for attachment to a suitable wall of the container, the rings being so formed that on the application of the pressure as by suitable dies, a disk of flexible transparent material is securely crimped or fixed between the mentioned rings so as to form a hermetic seal for the container and thereby afford an inspection opening thru which the contents of the container may be readily examined.

Reference is now had to the accompanying drawing for a more detailed description thereof in which the numeral 6 indicates a typical container or can, the same being of cylindrical form having end walls 7. Either or both of the end walls 7 have an aperture therein preferably centrally disposed and thru which the contents of the container may be removed, the aperture being preferably bordered by an inturned flange 8.

Into the aperture bordered by the flange 8 is inserted an assembled closure 9, the same comprising an inner ring 10, an outer ring 11 and a disk 12 of transparent material such, for example, as cellophane. The ring 10 forms the body of the closure 9, and comprises an upstanding cylindrical wall 14, having open ends, one end of which has an outwardly directed flange formed thereon and its opposite end is inturned to form an annulus 15 from which projects, at its inner edge, a cylindrical flange 16. The free edge of the cylindrical flange 16 is preferably inturned as indicated at 17 to form a reinforcing flange thereon.

The outer ring 11 is formed similarly to portions of the inner ring 10, it being composed of a cylindrical wall 18 and an annulus 19 from the inner edge of which is formed a depending flange 20, the latter being formed in an inturned flange 21 at its free edge. It is to be noted here that the annuli 15 and 19 are each inclined at a suitable degree in the same direction forming thereby a conical wall. It will be seen by reference to Fig. 3 that the confirmations of the ring 10 and the ring 11 serve to securely grip the disk 12 as the mentioned rings are subjected to pressure between suitable dies, during which the inclination of the annuli 15 and 19 serve to cause the crimping of the corresponding portions of the rings 10 and 11 in substantially S-shaped formation so as to securely grip the disk 12 therein, and thus form a hermetic seal.

The mentioned dies employed in the assemblage of the closure device comprise merely an anvil having a substantially flat surface and a cooperating plunger between which elements rings 10 and 11 are pressed. Preparatory to assembling the closure device 9 by the application of pressure in the mentioned dies, the rings 10 and 11 and the disk 12 are assembled in correlation substantially as illustrated in Fig. 5. At the application of pressure the wall 18 of the ring 11 telescopes the wall 14 of the ring 10, and

similarly the flange 20 slips over the flange 16 during which the marginal portions of the disk 12 are flanged cylindrically to be gripped between the flanges 16 and 20. As the application of pressure continues, a compound action takes place during which the flanges 16 and 20 being telescoped with each other are collapsed to the form shown in Fig. 3 and coactively the annuli 15 and 19 are pressed into a substantially flat form between which marginal portions of the disk 12 are gripped. From this it will be seen that the periphery of the disk 12 is securely crimped between the rings 10 and 11 to take the assembled form as shown in Fig. 3.

In the preferred embodiment of the invention as illustrated in the drawing, the container 6 is of the type usually employed for packaging powdered or pulverized dry materials such as baking powder, flour, etc. In this instance the closure 9 serves as a removable cover being withdrawn by the use of a tool under the flange 13 thereof. In such instances the closure 9 is frictionally engaged in the opening of the container specifically in the flange 8 thereof.

The closure 9 may be fabricated to form an integral and permanent part of the container 6, the same being assembled to the cylindrical wall thereof in the well-known manner usually employed in the sealing of metallic cans. In this instance the flange 13 of the closure 9 may be crimped over the ends of the cylindrical wall of the container 6 so that the assembled closure 9 entirely forms the end walls of the container 6. In this use of the invention, the disk 12 being of relatively soft material may be readily cut away to open the container, and also afford inspection of the contents of the container before the seal is broken. This form is especially desirous when the container is used for packaging liquid materials. In view of the frangible character of the transparent seal it will be noted that same is adapted to be broken for discharge of the contents and cannot therefore be replaced, thus rendering the container non-refillable.

It is to be understood that this improvement is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

What is claimed as new is:

1. A closure for a container and comprising a body having an opening therein, a collar member crimped to said body, said crimped portion being of substantially S-shaped formation, a closing member for the opening and having its marginal edge disposed between the body and the collar and clamped in the crimped portion to hermetically seal the opening.

2. A closure for a container and comprising a flanged body having an opening therein with the flange disposed about the opening, a flanged collar and the flange thereof and the flange of the body being crimped about each other in substantially S-shaped formation, and a closing disk having its marginal edge clamped in the crimped portion to hermetically seal the opening.

3. A closure for a container and comprising a tubular body having an opening therein, a stepped flange on the body about the opening, a tubular collar telescopically mounted about the body, a stepped flange on the collar and the flange thereof and the flange of the body being crimped about each other in substantially S-shaped formation, and a disk of transparent material closing the opening and having its marginal edge disposed between the body and collar and clamped in the crimped portion to hermetically seal the opening.

4. A closure for a container and comprising a body for attachment to the container and including a cylindrical wall, an inwardly directed stepped flange formed on one end of the wall, a collar including a cylindrical wall telescopically mounted about the wall of the body, an inwardly directed flange on the wall of the collar, said flanges being crimped about each other in substantially S-shaped formation and a fragile disk having its marginal edge clamped and hermetically sealed in the crimped portion.

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