Sept. 9, 1941. E. R. REHFELD 2,255,570

CONTAINER SEAL AND ITS APPLICATION TO CONTAINERS

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Fig. 1.

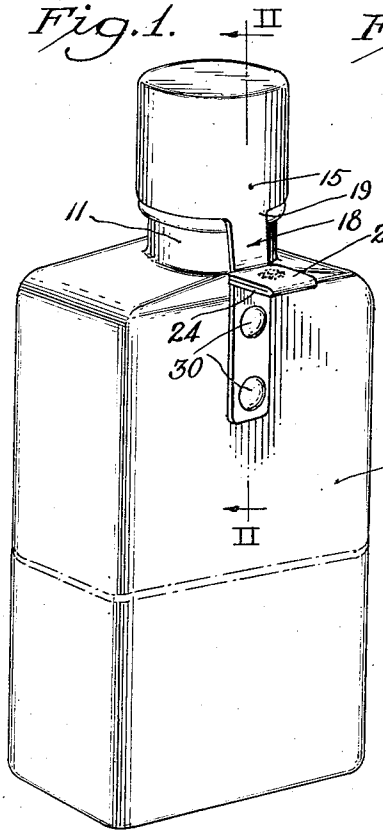


Fig. 2.

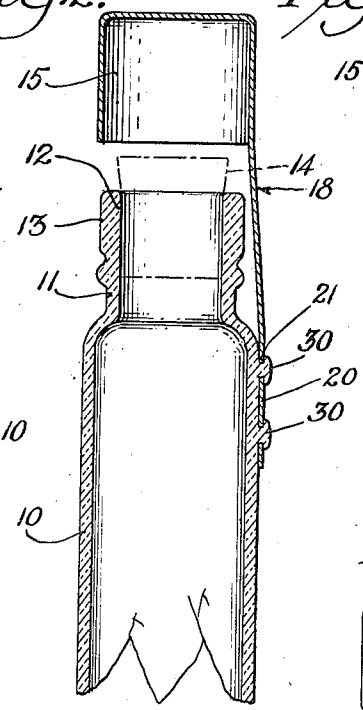


Fig. 3.

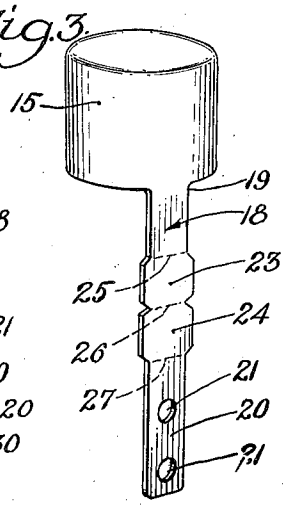


Fig. 4.

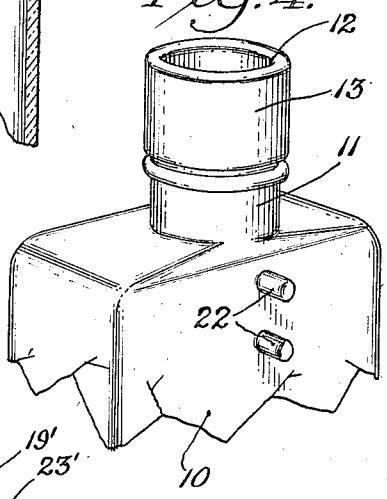


Fig. 5

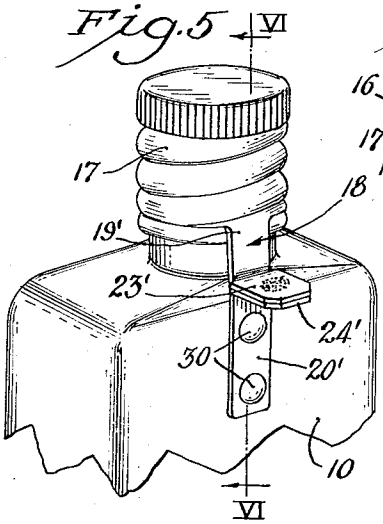
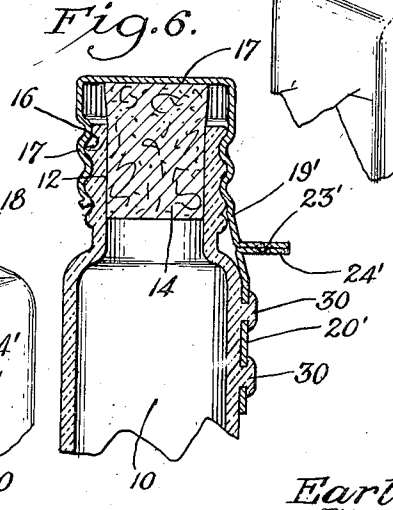


Fig. 6.



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CONTAINER SEAL AND ITS APPLICATION TO CONTAINERS

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Fig. 7.

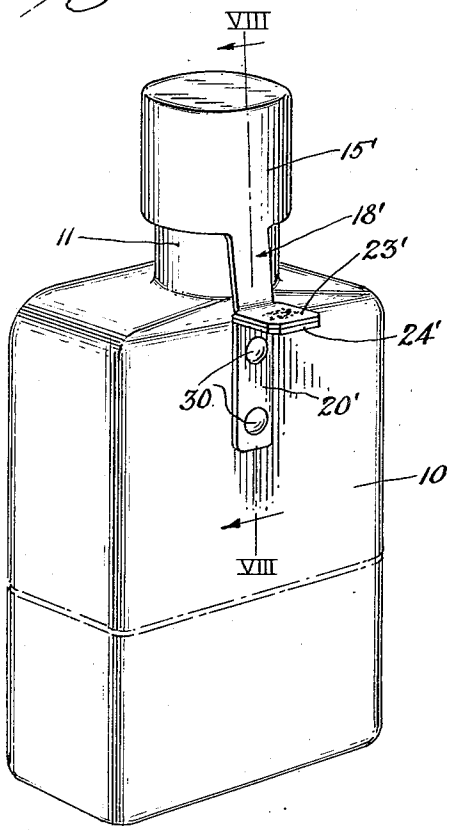


Fig. 8.

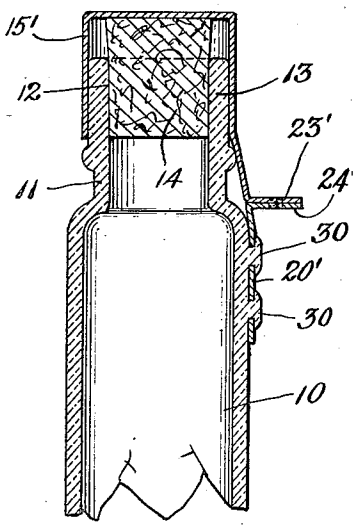


Fig. 9.

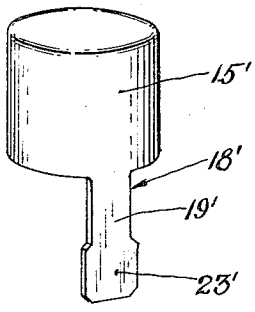
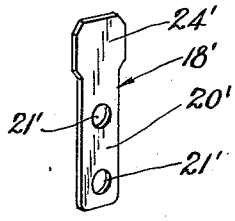


Fig. 10.



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UNITED STATES PATENT OFFICE

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CONTAINER SEAL AND ITS APPLICATION TO CONTAINERS

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Application October 30, 1936, Serial No. 108,326

4 Claims. (Cl. 215—83)

This invention relates to containers and more particularly to container seals and their method of application to containers to serve as indicating means therefor in order to discourage the repeated use thereof as refill containers, although certain features thereof may be employed with advantage for other purposes.

It contemplates more especially the provision of a novel method of sealing and/or attaching an indicating medium so as to comprise a permanent part of a container and require impairment thereto to a degree sufficient to indicate the status thereof as an originally filled or refilled container.

Numerous types of expedients have heretofore been proposed for precluding the use of a container for refill purposes without detection, since it is advantageous that the status of the container be known to the purchasing public from a standpoint of comprising an originally filled or refilled commodity. This is especially important in the commercial exploitation of liquors that are prone to be counterfeited and "bootlegged" by the placement of inferior contents in a container that was designed, labeled and first used for the genuine contents that may or may not be noted, specified and identified on the exterior thereof.

The most popular form of expedient commercially resorted to at the present time is the provision of a carton that confines the original container and requires mutilation in order to render access to the container confined therein. While this expedient serves as a detector to preclude counterfeiting of the contents, yet it is not entirely infallible and renders necessary an appreciable expense both in the provision of the additional carton and the equipment necessary to provide the sealed container. This entails a substantial investment and after the carton has been removed for demonstration or other purposes, there still is a possibility of utilizing the container as a refill for commodities or contents of inferior grade or quality to those specified or identified thereon.

Then, too, the purchasing public must be informed through extensive advertising and otherwise that the container itself does not constitute the original package without the confining carton, thereby providing opportunities for counterfeiting to the purchasing public that is not informed regarding the sealed carton that originally enclosed the container. Then, too, difficulty has been encountered in providing a commercially practical method of applying a permanently attached sealing medium, since present production operations in the filling of containers renders it necessary to apply the sealing medium without interfering with the continuity of production operations or entailing any appreciable expense or time requirements therefor. No sealing devices of any consequence have heretofore been regarded as effective or capable of application on a production basis so that they could not be generally adopted to serve their intended purposes unless intricate special machinery is provided and interruption to the continuity of present production operations is effected. While many attempts have heretofore been made to fuse seals to the glass body of containers, yet these have proven impractical and, therefore, incapable of commercial adoption.

One object of the present invention is to simplify and improve the construction as well as the effect of container detectors to preclude the use thereof as a refill for commodities that are not genuine.

Another object is to provide a sealing detector comprising a permanent adjunct to a container that requires some degree of detectable mutilation in order to enable contents removal.

Still another object is to provide a new and more effective expedient for effecting the fused joinder between a metallic cap or guard member and a glass container utilized in conjunction therewith.

A further object is to provide a container with a cap or guard having cooperating or inter-engaging expedients that permit their fused joinder so as to preclude removal of the container contents without some permanent mutilation thereto.

A still further object is to provide means for effecting the fused joinder of a metallic closure with a glass container so as to require sufficient mutilation thereto in effecting the opening thereof for contents removal to preclude the use of the container as a refill.

Still a further object is to provide formations on a glass container simultaneous to the application of a sealing element serving as a complement thereof to effect fused permanent attachment to the container body for suitably connecting a closure guard or cap thereto to preclude the use of a container as a refill medium.

An additional object is to provide a novel method of applying sealing mediums of the character mentioned to a glass container body so as to render such practical for production operations

in conjunction with the content filling of containers.

Still an additional object is to provide a metallic seal having overlapping portions permanently attached to a container closure and body, respectively, for permanent interconnection to provide an effective container sealing indicator.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawings:

Figure 1 is a perspective view of a container having sealing medium embodying features of the present invention.

Figure 2 is a fragmentary sectional view taken substantially along line II—II of Figure 1.

Figure 3 is a perspective view of a metallic closure and sealing device embodying features of the present invention and illustrated in conjunction with the container shown in Figure 1.

Figure 4 is a fragmentary perspective view of a container body having formations provided thereon in the process of applying the sealing medium of the type shown in Figure 3.

Figure 5 is a fragmentary perspective view of a container body provided with a modified sealing medium embodying features of the present invention.

Figure 6 is a fragmentary sectional view taken substantially along line VI—VI of Figure 5.

Figure 7 is a perspective view of a container having a still further modified sealing device embodying features of the present invention.

Figure 8 is a fragmentary sectional view taken substantially along line VIII—VIII of Figure 7.

Figure 9 is a perspective view of a container closure guard comprising an element of the sealing medium shown in Figures 7 and 8.

Figure 10 is a perspective view of a sealing strap that is intended for fused joinder to serve as a complement of the closure member shown in Figure 9.

The structure selected for illustration comprises a container 10 molded or otherwise shaped from any suitable material such as glass to provide the usual and customary reduced neck 11 that terminates in an orifice 12 defined by an enlarged peripheral region 13. The peripheral region 13 is reinforced for strength to define the mouth of the container 10 for content filling and discharge purposes. The form and configuration of the container 10 together with its neck 11 and content filling and discharge orifice 12 is capable of wide variation and depends largely upon the purpose of its use and the dictates of commercial practice.

The container 10 may, however, be and usually is provided with any suitable closure expedient for detachable association with the mouth 12 thereof. In this instance, a cork 14 telescopically engages orifice 13 of the container 10 (Figure 2), and a guard or cap 15 is telescoped over the container orifice region 13 to provide an effective guard for the closure 14. For that matter the orifice region 13 may be molded or otherwise formed with an external thread 16 (Figure 6) to receive, in this instance, a metallic closure 17 as a substitute for the plain guard or cap 15 (Figures 1 to 3). The closure 17 envelops the orifice region 13 and closes the opening defined by the orifice 12 so as to compress the interiorly confined cork 14 to seal the contents of the container 10 and prevent accidental discharge of the contents therethrough. The metallic closure or cap 16 is, in this instance, stamped, spun or otherwise shaped to provide a cylindrical configuration having threads spun or stamped therein to serve as a complement to the threads 15 of the container orifice region 13 so as to establish a detachable connection therewith.

To seal the contents in the container 10 and to provide detection as to the original removal thereof by necessary mutilation of a sealing means before access to the interior is available, an elongated metallic sealing strap 18 is provided between the body of the container 10 and the metallic guard closure 15 or 17 (Figures 1 to 4 or 5 to 6). To this end, the metallic sealing strap 18 is integrally joined at one extremity 19 thereof to the closure guard 15 (Figures 1 to 3) or the metallic screw cap 17 (Figures 5 to 6) with its other extremity provided with one or more apertures 21, in this instance two, to enable permanent attachment to the container 10 by fusing with corresponding complemental protruding portions 22 formed on the container body 10 during the production thereof as will appear more fully hereinafter.

It should be noted that the strap 18 is appreciably longer than the distance between the point of closure attachment 19 and the projecting portions 22 of the container body 10, this is for the purpose of providing overlapping intermediate strap portions 23 and 24 that preferably though not essentially are defined by parallel crease or score lines 25, 26 and 27 transversely impressed in the strap 18 to facilitate and render uniform the overlapped folding of the strap 18 so that the portions 23 and 24 will contact each other and extend transversely outward to bring the closure guard 15 into operative engagement with the cork 14 (Figure 1) from its inoperative displaced position beyond the cork closure 14 and the container orifice 12 (Figure 2).

The metallic strap 18 may comprise an integral member as described in connection with the embodiment shown in Figures 1 to 3 or such may be provided in two separate sections 19' and 20' having complemental portions 23' and 24' (Figures 5 to 10). In any event, the overlapping portions 23—24 or 23'—24' are preferably joined and permanently attached after the closure guards 15 and/or 17 are displaced to their operative closed position in engagement with the cork 14 by spot welding in a continuity of operations and in the proper timed sequence of steps. The overlapped folding of the strap portions 23'—24' as well as the spot welding is preferably effected subsequent to fusing the strap extremity 20 or 20' with the container body 10 or 10' as will presently appear. It is important that the overlapping portions 23—24 or 23'—24' of the sealing strap 18 or 18' are permanently joined by fusing or preferably welding so that there is a cohesive attachment of an integral and permanent nature.

Attachment of the sealing strap 18 or 18' through its apertured lower extremity 20 or 20' to the body of the container 10 or 10', is preferably effected during the production of the container body 10 while it is being blown to assume any predetermined shape. In its construction, a mold comprising a plurality of sectional members (not shown) are shaped to provide an interior cavity that conforms with the intended shape of the container body 10. The sections of the mold may be held together in any suitable manner, and the details of construction

may vary depending upon the dictates of commercial practice and the requirements of any particular type of container. Suffice it to say that the mouth region 13 is first completed in the ordinary course of production prior to blowing or otherwise forming the container body 10 or 10' and the mold is provided in the vicinity of the neck forming position with means to retain one or more sealing members 18 or 18' in a predetermined position so as to become fused with the body of the container 10 or 10' during its formation. After the container 10 or 10' has been formed and the sealing member 18 or 18' joined thereto, the mold is removed therefrom.

In the present embodiment, there is only a single sealing member or strap 18 provided for attaching the guard 15 or the closure cap 17 to the body of the container 10 or 10', but two or even more may be used depending upon the dictates of commercial practice. For that reason, reference to the provision of a single sealing member 18 or 18' should not be construed as a limitation or a requirement, but merely an arbitrary selection and may be varied from a single sealing member to any number that may be found necessary or most practical within the dictates of commercial practice. In the preferred embodiment of the invention, however, one sealing strap 18 or 18' is provided in the container 10 and, consequently, it is disposed adjacent the interior surface of one of the sectional mold members. In consequence thereof, the strap member 18 or 18' may be shaped or curved to conform with the interior neck and shoulder of the container mold cavity or the exterior contour of the resultant container body 10 or 10'. With the sealing strap 18 or 18' formed to assume the corresponding shape of the container neck and shoulders, its adjacent portions 23—24 or 23'—24' are bent to extend outwardly in a horizontal plane, thereby conveniently enabling their joinder by spot welding or the like.

As previously stated, the sealing strap 18 or 18' has, in this instance, its extremity 20 provided with apertures 21 that register with correspondingly shaped and spaced bores formed on the inner surface of the sectional mold members and in axial registry therewith to effect a joinder of the sealing strap extremity 20 or 21' with the body of the container 10 or 10'. This is accomplished by pouring glass in molten condition in the mold members having the strap 18 or 18' previously set therein so as to form the body of the container 10 responsive to the customary blowing operation. As a result, molten glass will be blown through the apertures 21 or 21' of the sealing strap extremity 20 or 20' to form enlarged glass heads 30 on the ends of the projecting body portions 22 (Figure 4) simultaneously formed integral with the container body 10 or 10' to effect attachment of the sealing member extremity 20 or 20' with the body of the container 10 or 10'.

It will be observed that the enlarged glass heads 30 comprise a part of container body 10 or 10' and is formed integral therewith so as to preclude the removal of the sealing strap 18 or 18' without mutilation thereto or breaking the heads 30. Containers 10 or 10' are thus formed with the lower portion 20 or 20' of the sealing strap 18 or 18' permanently attached thereto. The laterally directed overlap 24 of the sealing strap 18 will extend substantially in horizontal alignment with and adjacent the overlap 23 provided on that portion 19 of the strap 18 which is integrally or otherwise attached to the guard cap 15 or the closure cap 17.

After the container 10 has been filled with the desired contents, the closure 14 is inserted and the cap or closure 15 is telescoped thereover or the closure cap 17 is screwed or otherwise associated with the orifice region 13 of the container 10 so that the sealing strap portion 23 will overlap the corresponding portion 24 of the lower half 20 thereof for adjacent contacting alignment.

In this position, contact is established between the overlaps 23—24 of the sealing strap 18 so that such may be spot welded or otherwise connected for permanent joinder depending upon the requirements or dictates of commercial practice. With this arrangement, the closure guard 15 or cap 17 is sealed to the container 10 or 10' that establishes the permanent connection thereof with the sealing strap extremity 20 or 20'. In order to render possible the removal of the contents from the container 10 or 10', it is necessary to rupture or sever the sealing strap 18 or 18' to accomplish the removal of the closure guard 15 or cap 17. Such rupture or severance is of a permanent character and indicates that the container 10 or 10' has once been opened and is not an original or genuinely filled container in view of the ruptured sealing strap or closure guard 14 and/or cap 17.

The sealing member 18 or 18' may be most conveniently ruptured or severed along its transverse score lines 25 or 27, since these are lines of greater weakness than the otherwise solid sealing strap 18 or 18'. It will be observed that an effective sealing medium has been provided that can be utilized without disrupting productions operations in the filling of containers and their sealing, since spot welding can be effected as a step in production operations and the protection feature of the sealing strap 18 or 18' joined to the container 10 or 10' during or subsequent to the content filling operation.

Various changes may be made in the embodiment of the invention herein specifically described without departing from or sacrificing any of the advantages of the invention or any features thereof, and nothing herein shall be construed as limitations upon the invention, its concept or structural embodiment as to the whole or any part thereof except as defined in the appended claims.

I claim:

1. A glass bottle seal comprising in combination, a lower perforate glass-sealed metal portion permanently sealed directly with the bottle wall by integral portions of the glass of said wall which project through said perforate metal portion in interlocking relationship therewith and constitute said perforate metal portion an integral part of said wall, said perforate metal portion having a portion upstanding from said glass seal in parallelism with the major axis of the bottle, and a metal cap covering the bottle mouth and having an apron embracing the bottle neck and an integral tearing strip portion depending in said axial parallelism from the lower edge of said apron, the aggregate axial dimensions of said tearing strip portion and said upstanding portion being greater than the axial distance between the lower edge of said apron and said glass seal whereby said tearing strip

portion and said upstanding portion are disposed in lapped relationship, and means uniting the lapped ends of said portions into an integral strip the maximum axial dimension of which is not greater than said axial distance, thereby connecting said perforate glass-sealed portion in sealed relationship with said cap.

2. A glass bottle seal comprising in combination, a lower perforate glass-sealed metal portion permanently sealed directly with the bottle wall by integral portions of the glass of said wall which project through said perforate metal portion in interlocking relationship therewith and constitute said perforate metal portion an integral part of said wall, said perforate metal portion having a portion upstanding from said glass seal in parallelism with the major axis of the bottle, and a metal cap covering the bottle mouth and having an apron embracing the bottle neck and an integral tearing strip portion depending in said axial parallelism from the lower edge of said apron, the aggregate axial dimensions of said tearing strip portion and said upstanding portion being greater than the axial distance between the lower edge of said apron and said glass seal thereby said tearing strip portion and said upstanding portion are disposed in lapped relationship and bent axially to form a tearing tab, and means uniting the lapped ends of said portions into an integral strip the maximum axial dimension of which is not greater than said axial distance, thereby connecting said perforate glass-sealed portion in sealed relationship with said cap.

3. A glass bottle seal comprising, in combination, a lower perforate glass-sealed metal portion permanently sealed directly with the bottle wall by integral portions of the glass of said wall which project through said perforate metal portion in interlocking relationship therewith and constitute said perforate metal portion an integral part of said wall, said perforate metal portion having a portion upstanding from said glass seal in parallelism with the major axis of the bottle, and a metal cap covering the bottle mouth and having an apron embracing the bottle neck and an integral tearing strip portion depending in said axial parallelism from the lower edge of said apron, the aggregate axial dimensions of said tearing strip portion and said upstanding portion being greater than the axial distance between the lower edge of said apron and said glass seal whereby said tearing strip portion and said upstanding portion are disposed in lapped relationship, and a spot weld uniting the lapped ends of said portions into an integral strip the maximum axial dimension of which is not greater than said axial distance, thereby connecting said perforate glass-sealed portion in sealed relationship with said cap.

4. A glass bottle seal comprising in combination a lower perforate metal portion permanently connected to the bottle wall by integral portions thereof which extend through said perforate metal portion, said metal portion having a metallic tongue projecting upwardly therefrom substantially at right angles to the base of said bottle, a metal cap provided with an apron for embracing the bottle neck, said cap having a metal tearing strip projecting downwardly therefrom into lapping relation with said metal tongue portion and means for permanently uniting said tearing strip and metal tongue so that the axial distance between said bottle mouth and the point of connection of said first named metallic portion is fixed, to thereby form a permanent seal for said bottle.

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