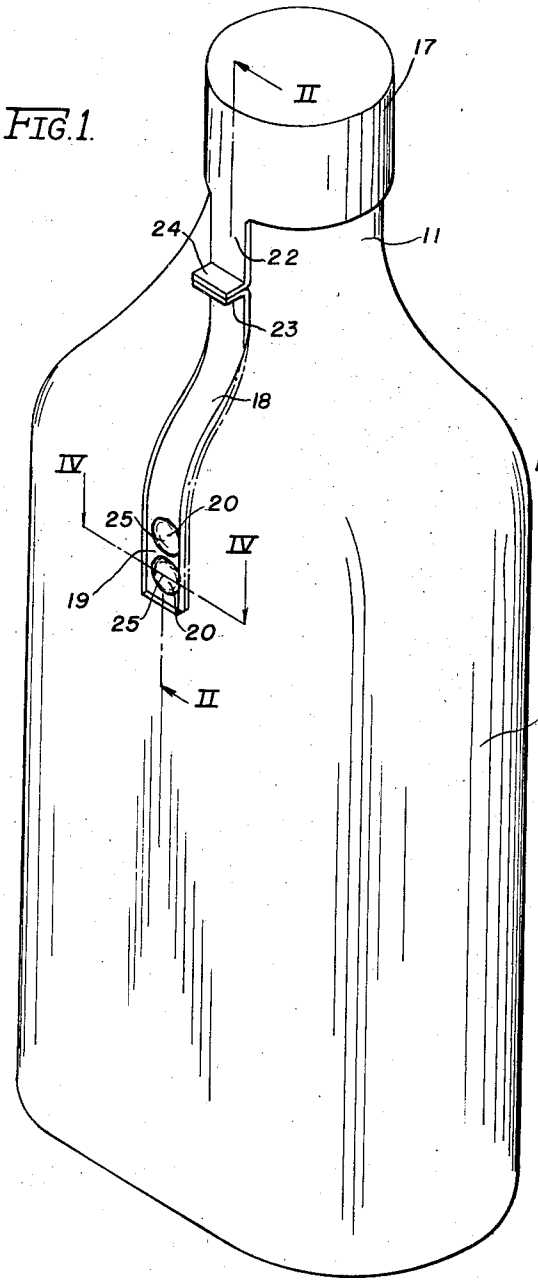
Sept. 3, 1940. E. R. REHFELD 2,213,932

CONTAINER CAP AND SEAL

Filed June 21, 1937 2 Sheets-Sheet 1

FIG. 1.



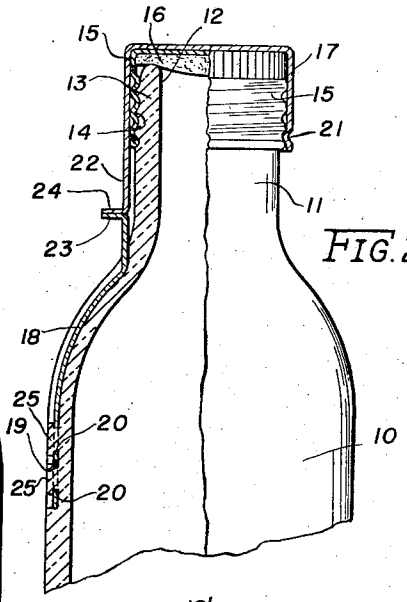


FIG. 2.

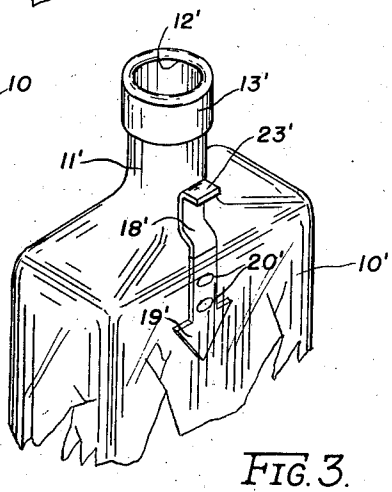


FIG. 3.

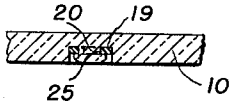


FIG. 4.

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CONTAINER CAP AND SEAL

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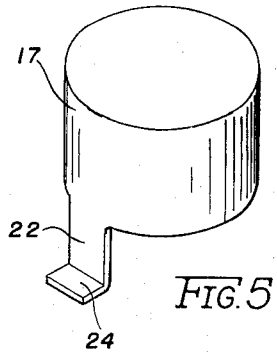


FIG. 5

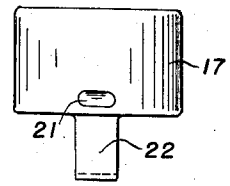


FIG. 6.

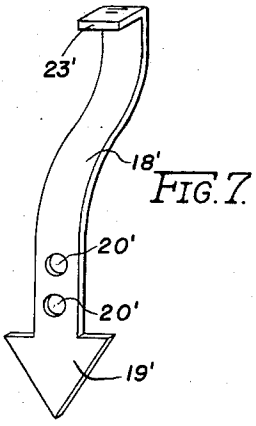


FIG. 7.

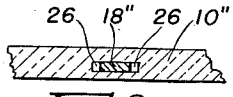


FIG. 9.

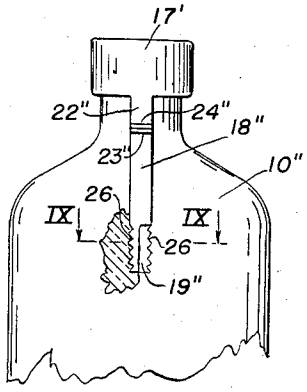


FIG. 8.

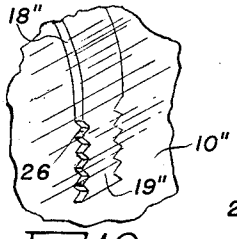


FIG. 10.

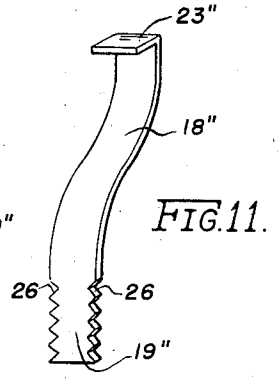


FIG. 11.

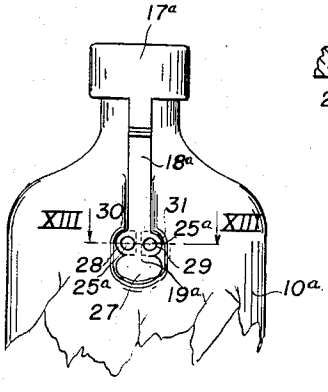


FIG. 12.

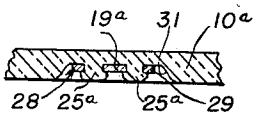


FIG. 13.

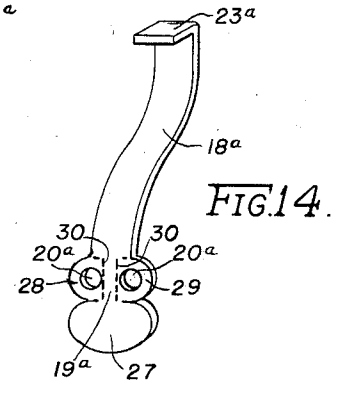


FIG. 14.

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UNITED STATES PATENT OFFICE

2,213,932

CONTAINER CAP AND SEAL

Earl R. Rehfeld, Chicago, Ill.

Application June 21, 1937, Serial No. 149,337

7 Claims. (Cl. 215—83)

This invention relates to containers and more particularly to improved sealing means therefor 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 novel closure sealing means for containers to comprise a permanent part thereof so as to 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, but these have not proven entirely satisfactory and advantageous both from a production and practical standpoint. It is advantageous that the status of the container be known to the purchasing public so that a refill container may be distinguished from an original and genuine product. This is especially important in the commercial exploitation of liquors that are counterfeited and "bootlegged" by the placement of inferior contents in a container that is labeled for the genuine contents upon which the good will and reputation of a business depends.

The most popular form of expedient 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. Then, too, wire and metal seals have also been employed, but these are not permanently attached to the glass of the container. After the carton has been removed for demonstration or other purposes or known metallic seals removed, 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. Thus counterfeiting is not altogether eliminated with known sealing expedients.

Then, too, the purchasing public must be informed through extensive advertising and otherwise that the container itself does not constitute the original package without involving the carton or its metallic seal, thereby providing opportunities for counterfeiting to the purchasing public that is not informed regarding the sealed carton that originally enclosed the container. Difficulty has been encountered in providing a commercially practical method of applying such a 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 special machinery is available or delay is permissible in their attachment.

One object of the present invention is to simplify the construction and improve the effect of container seal 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 glass container that requires some degree of mutilation in order to enable contents removal.

Still another object is to provide a new and novel expedient for effecting a non-replaceable joinder between a metallic cap or guard member and a glass container utilized in conjunction therewith to preclude the use thereof as a refill container.

A further object is to provide a container with a cap or guard having cooperating or interengaging expedients that permit their 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 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 countersunk formations on a glass container body that enable the attachment of a closure guard or cap to preclude the refill use of the container.

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

My other copending applications Serial Nos. 108,326 and 108,327, filed October 30, 1936, are directed to other phases of the sealing arrangement disclosed herein.

In the drawings:

Figure 1 is a perspective view of a container having a 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 fragmentary perspective view similar to Figure 1 with a somewhat modified sealing expedient.

Figure 4 is a fragmentary sectional view taken substantially along line IV—IV of Figure 1.

Figure 5 is a perspective view of a container closure guard having a sealing expedient shown in association therewith.

Figure 6 is a front view of the closure guard shown in Figure 5.

Figure 7 is a perspective view of a sealing medium embodying the features of the present invention.

Figure 8 is a fragmentary rear view in elevation of a modified metallic closure used in conjunction with a glass container.

Figure 9 is a sectional view taken substantially along line IX—IX of Figure 8.

Figure 10 is a fragmentary perspective view of the region of the container shown in Figure 8 to illustrate the non-replaceable connection of the sealing medium thereto.

Figure 11 is a perspective view of the sealing strap shown in Figures 8, 9 and 10.

Figure 12 is a fragmentary rear view in elevation of a modified metallic closure used in conjunction with a glass container.

Figure 13 is a sectional view taken substantially along line XII—XII of Figure 12.

Figure 14 is a perspective view of a sealing strap shown in Figures 12 and 13.

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 the peripheral region 13 to provide the mouth 12 of the container 10 for content filling and discharge purposes. The form and configuration of the containers 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.

As shown, the orifice 12 has its peripheral external region 13 molded or otherwise formed with an external thread 14 to receive, in this instance, the metallic closure 15 that envelops the orifice region 13 and closes the opening by orifice 12 so as to seal the contents of the container 10 to prevent accidental discharge. The metallic closure or cap 15 is, in this instance, stamped, spun or otherwise shaped to permit a cylindrical configuration having threads upon or stamped therein to serve as a complement to the threads 14 of the container 10 so as to establish an adjustable connection therewith.

It is worthy of note that the interior closed end of the closure 15 is provided with a disc 16 prepared from cork or other suitable material so as to engage the peripheral edge of the opening or orifice 12 and to effect a hermetic sealing engagement responsive to the threaded connection of the closure 15 with the orifice end 13 of the container 10. A metallic cup-shaped closure guard 17 is telescopically disposed over the threaded closure 15 to extend to or beyond the peripheral open edge thereof. To seal the contents in the container 10 and to provide detection as to original removal thereof by necessary mutilation of the sealing means before access to the interior is available, a metallic sealing strap 18 is provided between the body of the container 10 and the metallic closure 15. To this end, the metallic strap 18 has, in this instance, the extremity 19 thereof provided with apertures 20, in this instance two, to afford permanent attachment to the container 10 as will appear more fully hereinafter.

Attachment of the sealing strap 18 through its extremity 19 to the body of the container 10, is preferably effected during the production of the container body 10 while it is being blown or molded to assume any predetermined shape. In its production any suitable mold may be employed and the design, shape and the details of mold 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, and the mold (not shown) is provided in the vicinity of the neck forming portion with means to maintain one or more sealing members 18 therein so as to become joined to the body of the containers 10 during its formation.

In the present embodiment, there is one sealing member or strap 18 provided for attaching the closure guard 17 to the body of the container 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 sealing member 18 should not be construed as a limitation or a requirement, but merely is illustrative and may be varied from a single sealing member to any number that may be found necessary or most practical. In the preferred embodiment of the invention, however, one sealing strap 18 is provided in the container 10 and, consequently, the closure guard 17 is provided with an indentation 21 to engage a thread of the closure 15 diametrically opposite to a sealing strap extension 22 formed integral with and depending from the closure guard 17. The sealing strap 18 of the container 10 and the guard extension strap 22 have their free extremities terminating in offset or horizontally disposed flanges 23 and 24 that align and contact each other when all the elements are in their operative assembled position after the container 10 has been filled with its contents as will appear more fully hereinafter.

It is to be noted that the strap member 18 is shaped or curved to conform with the exterior contour of the container body 10. With the sealing strap 18 formed to assume the corresponding shape of the container neck 11 and shoulder, the complemental strap extremities or flanges 23 and 24 are bent to extend outwardly in a horizontal plane to contact each other after the closure 15 and guard 17 have been placed in position. The curved sealing strap 18 with its extremity 19 is disposed within the body of the container 10 during its formation, and the molten glass is blown and caused to flow within the strap apertures 20 to form flanged heads 25 larger than the apertures 20 provided in the extremity 19 of the metallic sealing strap 18, but in axial registry therewith to effect a joinder of the sealing strap extremity 19 with the body of the container 10.

This is accomplished by placing the preformed mouth region 13 of the container 10 to be formed in axial relationship with the cavity of the mold sections (not shown) and, thereupon, glass is blown or poured in molten condition to form the body of the container 10 with the sealing strap 18 in intimate joinder therewith responsive to the customary blowing operation. Molten glass will, therefore, be blown through the apertures 20 of the sealing strap extremity 19 to cooperate with complemental cavities in the mold to form enlarged heads 25 that effects attachment

of the sealing member extremity 19 within the body of the container 10. It will be observed that the enlarged glass heads 25 comprise a part of the container body 10 and are formed integral therewith so as to preclude the removal of the sealing strap 18 without mutilation thereof or breaking of the heads 25 comprising a part of the container 10.

To avoid obstruction during packing of the containers 10 or while they are packed adjacent to each other as well as preclude accidental injury to the sealing strap 18 and its retaining glass heads 25, the latter do not extend beyond the exterior surface of the container body 10.

Containers 10 are thus formed with the sealing strap 18 attached thereto and its laterally directed extremity 23 thereof extending substantially in horizontal alignment with the lowermost and corresponding shaped offset extremity 24 of the sealing strap extension 22. After the container 10 has been filled with the desired contents, the cap or closure 15 is screwed or otherwise associated therewith and the closure guard 17 disposed thereover so that the sealing strap extension 22 with its offset flange 24 will align with and be disposed adjacent to the correspondingly sized and shaped offset flange 23 of the sealing strap 18.

Consequently, the closure guard 17 is attached or associated with the mouth end 13 of the container 10 and sealing is effected with the guard 17 in a position that effects alignment of the flanges 23 and 24 of the sealing strap members 18 and 22. In this position, contact is established between the offset flanges 23 and 24 of the sealing strap elements 18 and 22 of the closure guard 17 so that such may be permanently spot welded together or otherwise connected for permanent joinder depending upon the requirements or dictates of commercial practice. With this arrangement, the closure guard 17 is sealed to the container 10 and cannot be removed without permanent impairment to or rupture of the sealing strap 18 or the glass heads 25 of the container 10 that establishes the permanent connection thereof with the sealing strap extremity 19.

It is worthy of note that the sealing strap 18 may be provided (Figures 3 and 7) with an enlarged tap such as a substantially arrow-shaped extremity 19' to preclude the removal of the strap 18' from the body of the container after it is joined therewith. With the provision of the arrow-like substantially enlarged tab 19' on the extremity of the sealing strap 18' the apertures 20' are optional. Another modification of the sealing strap 18'' is shown in Figures 8 to 11 wherein the side edges thereof in the region of its lower extremity 19'' is provided with a series of serrations 26 to effect inter-engagement with the fused glass of the wall wherein the sealing strap extremity 19'' is embodied in the container 10''. The substantially arrow-shaped extremity 19' shown in the preferred embodiment may be resorted to should commercial practice so dictate in conjunction with the serrated edges 26.

In the modified embodiment illustrated in Figures 12 to 14 it will be observed that the sealing strap 18^a and the lower extremity 19^a terminates in an enlarged substantially elliptical tab 27 that affords the finger grasp thereof. The lower region 19^a of the sealing strap 18^a is, in this instance, provided with transversely disposed ears 28 and 29 immediately above the enlarged tab 27 to accommodate horizontally aligned apertures 20^a. The apertures 20^a are horizontally spaced relative to each other so that the region therebetween may be provided with parallel vertically disposed score lines 30 that connect the enlarged tab 27 with the sealing strap 18^a between the apertures 20^a.

In consequence thereof, the score lines 30 will present lines of weakness to afford the removal of the sealing strap 18^a independent of the enlarged ears 28 and 29 that are fused to the container wall by means of a portion of the glass extending therethrough during the molding of the container body 10^a to present enlarged securing means 25^a in much the same manner as described in connection with the embodiment shown in Figures 1 and 2. It will be observed, therefore, that the first removal of the closure guard 17^a is effected by grasping the enlarged tab 27 and exerting a pull thereon so as to detach the sealing strap 18 from the ears 28 and 29 by severing along the score lines 30 which present a weakened region for that purpose.

By so doing, the sealing strap 18^a may be removed and the guard 17^a detached without requiring destruction of the joinder presented by the beads 25^a that permanently connect the sealing strap ears 28 and 29 to the container 10^a. It is worthy of note that the container body 10^a is formed with a depression 31 in the wall thereof to accommodate the sealing strap 18^a and its enlarged tab extremity 27 together with the intermediate region 19^a thereof so that the thickness of the wall 10^a will not be any greater in the region of the fused joinder presented by the beads 25^a than it is elsewhere. This affords a compact and unobstructed point of attachment so that the usual cartons may be employed when packing the containers 10. Further, such a structure does not present an obstruction to adjacently stacked containers 10^a when confined on shelves or in a case for shipment.

It will be observed that an effective sealing medium has been provided that can be utilized without disrupting production operations in the filling of containers and their sealing, since spot welding can be effected as a step in production operations. 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. In a device of the character described, the combination with a glass container having an open discharge orifice, of a metallic closure for said container, a sealing strap having an enlarged tab extremity permanently joined at spaced points to the body of said container, there being two substantially parallel spaced lines of weakness impressed in said tab between said points of attachment to facilitate the authorized severance of said sealing strap from said tab attaching points, a sealing strap extension formed integral with said closure and extension in alignment with said first named sealing strap, confronting portions of said sealing strap and extension being in overlapping relation, and a permanent fused joinder between said last named overlapping confronting portions to seal said closure to said glass container.

2. In a device of the character described, the combination with a glass container having an

open discharge orifice, of a metallic closure for said container, a sealing strap having an enlarged tab extremity with a portion permanently joined to the body of said container, the other portion of said tab being separated from said joined portion by lines of weakness impressed therein to facilitate the authorized severance of said other portion of said sealing strap from said joined portion of said tab, a sealing strap extension formed integral with said closure and extending in alignment with said first named sealing strap, confronting portions of said sealing strap and extension being in overlapping relation, and a permanent fused joinder between said last named overlapping confronting portions to seal said closure to said glass container.

3. In a device of the character described, the combination with a glass container having an open discharge orifice, of a metallic closure for said container, a sealing strap having an enlarged tab extremity with a portion permanently joined to the body of said container, the other portion of said tab being separated from said joined portion by lines of weakness impressed therein to facilitate the authorized severance of said other portion of said sealing strap from said joined portion of said tab, the body of said container and sealing strap attachment together not extending beyond other portions of the container wall, a sealing strap extension formed integral with said closure and extending in alignment with said first named sealing strap, confronting portions of said sealing strap and extension being in overlapping relation, and a permanent spot-weld joinder between said last named overlapping confronting portions to seal said closure to said glass container.

4. A glass bottle seal embodying a metal cap fitted over the bottle mouth and cap sealing means therefor comprising: an integral metal tearing strip portion extending from said cap and integral therewith and a lower perforate glass-sealed metal portion united in sealed relationship with said tearing strip portion and permanently embedded within the bottle wall longitudinally of the major axis thereof and sealed therein by integral portions of the glass of said wall which project through said perforate metal portion in interlocking relationship therewith and by an integral portion of said glass which overlies said perforate metal portion, said cooperating interlocking and overlying integral glass portions constituting said perforate metal portion an inseparable part of said bottle wall.

5. A glass bottle seal embodying a metal cap fitted over the bottle mouth and cap sealing means therefor comprising: an integral metal tearing strip portion extending from said cap and integral therewith and a lower perforate glass-sealed metal portion welded in sealed relationship with said tearing strip portion and permanently embedded within the bottle wall longitudinally of the major axis thereof and sealed therein by integral portions of the glass of said wall which project through said perforate metal portion in interlocking relationship therewith and by an integral portion of said glass which overlies said perforate metal portion, said co-operating interlocking and overlying integral glass portions constituting said perforate metal portion an inseparable part of said bottle wall.

6. In a device of the character described, the combination with a glass container having a discharge orifice, of a metallic closure for said orifice, a sealing strap having an extremity permanently joined at spaced points to the glass wall of the body of said container, said extremity having a tab portion beyond said points of attachment adapted to be gripped by the fingers, there being lines of weakness in said extremity between said points of attachment such that tearing force exerted on the tab pulls away said tab and a portion of the strap lying between said attachment points to separate said strap from the container wall, said closure having a portion in juxtaposition to a portion of said strap and permanently attached thereto.

7. A sealed container comprising a glass bottle having a neck portion defining a filling and discharging opening and provided with a circumferential bead, a removable closure for the opening, and means for sealing the closure to the bottle including a metal cap covering the closure and having an integral depending skirt portion contracted about the bead, said skirt having an integral tab extending from said section and integral therewith and a lower perforate glass-sealed metal portion permanently joined in the bottle wall and sealed directly therewith by integral portions of the glass of said wall which project through said perforate portion in interlocking relationship therewith and constitute said perforate metal portion an inseparable part of said wall, the bottle wall at the point of attachment of said perforate metal portion being no thicker than elsewhere, said perforate metal portion having an integral strip extending upwardly therefrom in parallelism with the major axis of the bottle and inseparably united to said tab by welding to form an integral strip the maximum axial dimension of which is not greater than the axial distance between the point of connection of the tab with the skirt and the point of attachment of the strip to the bottle, whereby said closure cannot be removed without leaving on the bottle visual evidence of its removal.

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