June 8, 1965 W. E. CHEELEY 3,187,932

CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

Filed Oct. 4, 1961 4 Sheets-Sheet 1

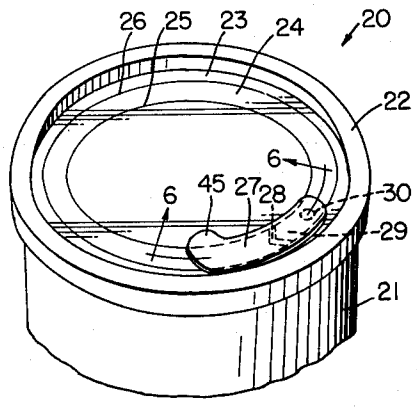


FIG-1

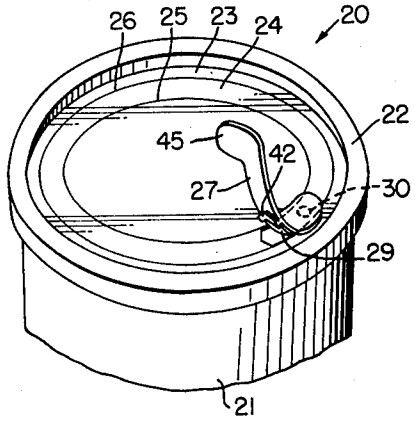


FIG-2

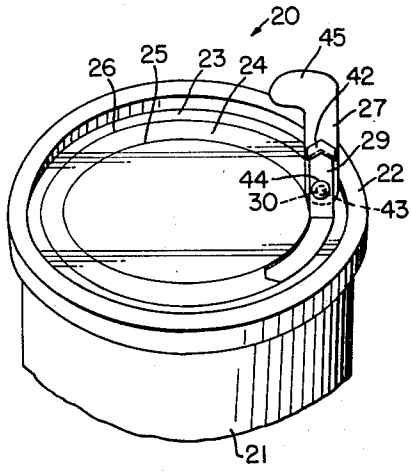


FIG-3

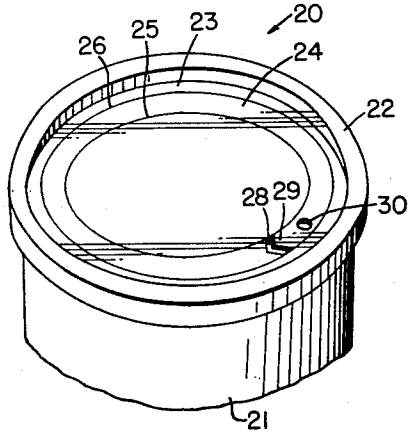


FIG-4

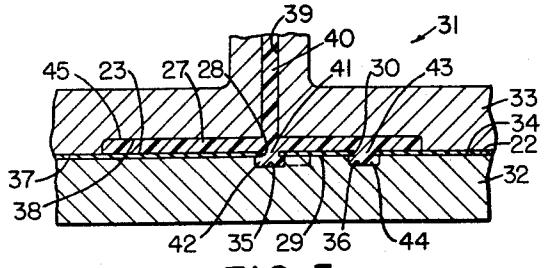


FIG-5

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CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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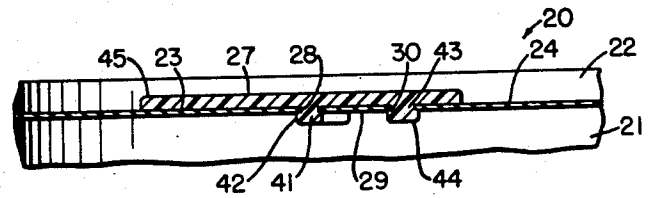


FIG-6

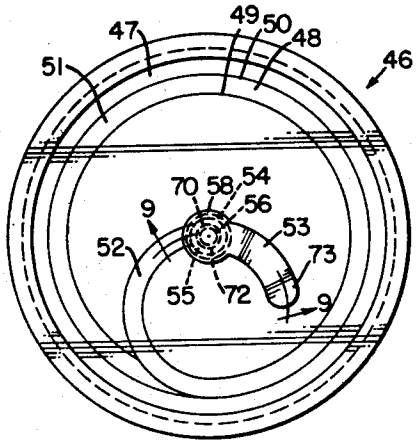


FIG-7

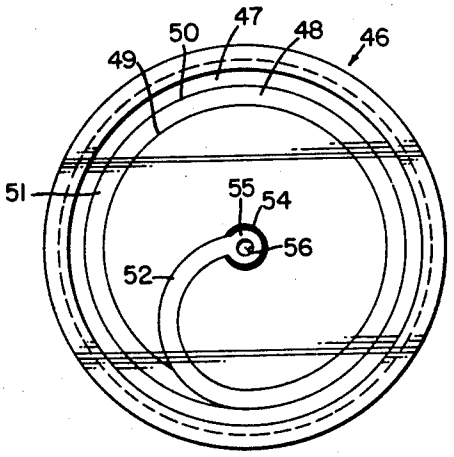


FIG-8

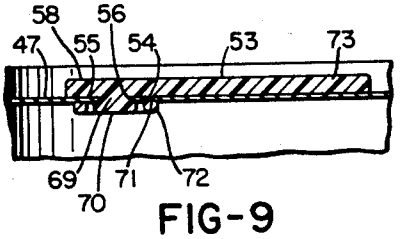


FIG-9

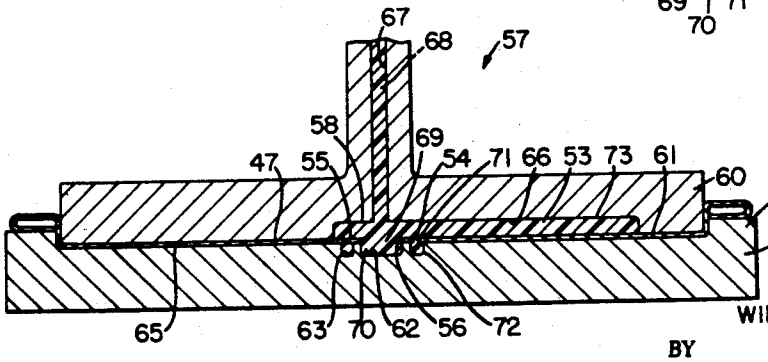


FIG-10

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CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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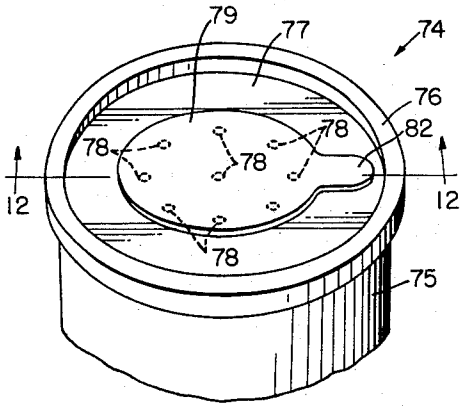


FIG-11

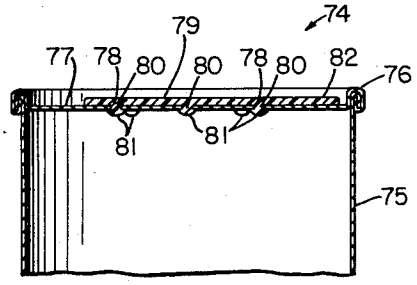


FIG-12

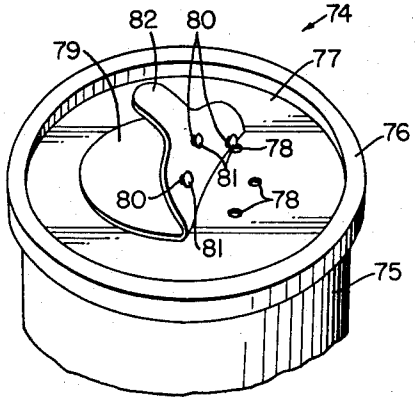


FIG-13

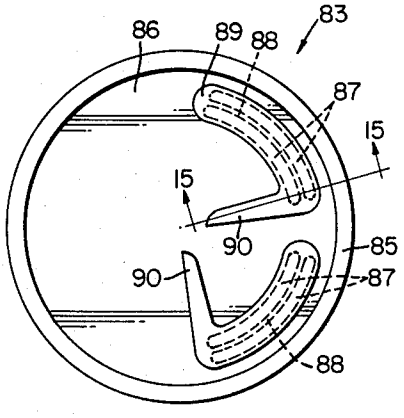


FIG-14

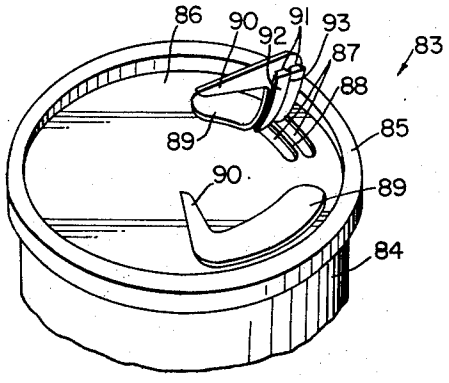


FIG-16

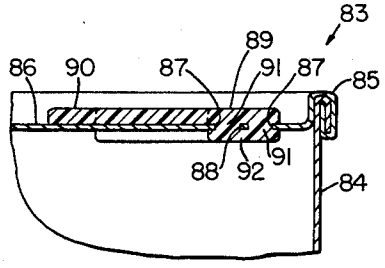


FIG-15

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CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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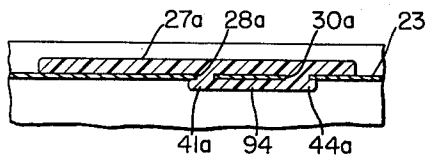


FIG-17

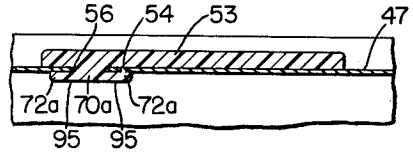


FIG-18

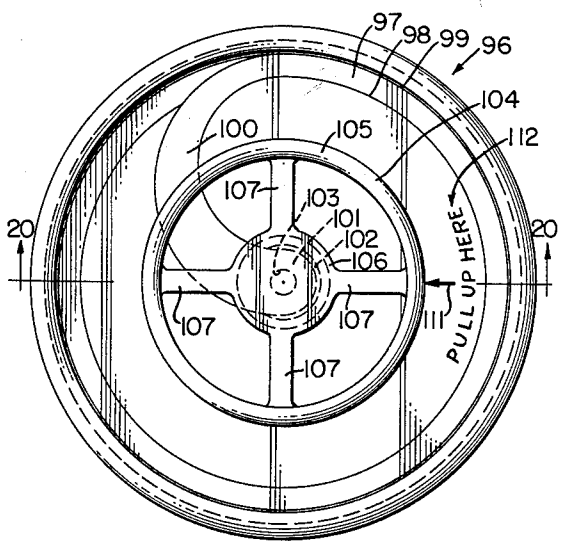


FIG-19

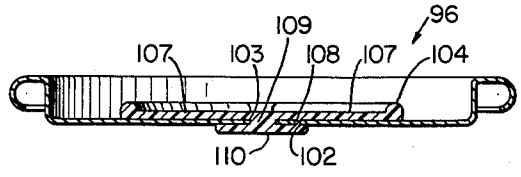


FIG-20

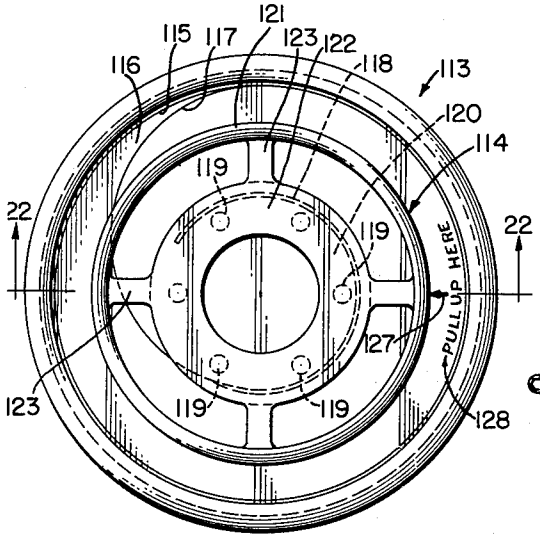


FIG-21

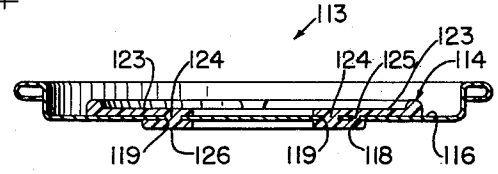


FIG-22

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United States Patent Office 3,187,932 Patented June 8, 1965

3,187,932

CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

William E. Cheeley, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,960
10 Claims. (Cl. 220—54)

This invention relates to improved containers having improved opening means. This invention also relates to improved methods for making such containers or the like.

Heretofore, metallic containers and the like have been provided with various means for permitting the ultimate consumer to readily open the container while still permitting the product of the container to be initially hermetically sealed or vacuum packaged in the container to prevent product spoilage, flavor loss and the like.

One such prior known means comprises a tear strip or portion formed in the container by weakening the wall of the container around the perimeter of the tear strip or portion, such as by scoring or the like.

However, in order to permit removal of the tear strip or portion, a tab is integrally formed or separately secured to one end of the tear strip or portion to provide means for winding up the tear portion on a key or the like or to provide means for manually pulling the tear portion from the container wall.

When the tab is formed separately and subsequently secured to the tear portion, it has been found that it is relatively difficult to cause initial separation of the leading end of the tear strip or portion because the same is integrally secured to the container wall or the like.

However, according to the teachings of this invention, an improved tab means is provided for such tear strips or portions and readily permits the leading end of a tear strip or portion to be pulled free of the container wall or the like so that the remainder of the tear portion or strip can be removed from the container.

Further, this invention provides improved opening means for shaker-type dispensing containers and the like.

Therefore, it is an object of this invention to provide an improved container or the like having one or more of the novel features of this invention as set forth above and hereinafter shown or described.

Another object of this invention is to provide an improved method for making such a container or the like.

Other objects, uses and advantages of this invention are apparent from a reading of this description which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a fragmentary perspective view of an improved container of this invention.

FIGURE 2 is a view similar to FIGURE 1 and illustrates the method of initially opening the same.

FIGURE 3 is a view similar to FIGURE 2 and illustrates the container in a more fully opened position thereof.

FIGURE 4 is a view similar to FIGURE 1 with the tab means thereof removed to more fully illustrate the configuration of the tear strip of this invention.

FIGURE 5 is a fragmentary, cross-sectional view of an apparatus of this invention for forming the opening means of the container of FIGURE 1.

FIGURE 6 is an enlarged, fragmentary, cross-sectional view of the container illustrated in FIGURE 1 and is taken on line 6—6 thereof.

FIGURE 7 is a top plan view of another container of this invention.

FIGURE 8 is a view similar to FIGURE 7 with the tab means removed to more fully illustrate the configuration of the tear strip of this invention.

FIGURE 9 is an enlarged, fragmentary, cross-sectional view of the container illustrated in FIGURE 7 and is taken on line 9—9 thereof.

FIGURE 10 is an enlarged cross-sectional view illustrating the apparatus for forming the container structure illustrated in FIGURE 7.

FIGURE 11 is a fragmentary, perspective view illustrating another container of this invention.

FIGURE 12 is a cross-sectional view of the container illustrated in FIGURE 11 and is taken on line 12—12 thereof.

FIGURE 13 is a view similar to FIGURE 12 and illustrates the method of initially opening the container.

FIGURE 14 is a top plan view of another container of this invention.

FIGURE 15 is an enlarged, fragmentary, cross-sectional view of the container illustrated in FIGURE 14 and is taken on line 15—15 thereof.

FIGURE 16 is a fragmentary perspective view illustrating the method of initially opening the container of FIGURE 14.

FIGURE 17 is a view similar to FIGURE 6 illustrating another embodiment of this invention.

FIGURE 18 is a view similar to FIGURE 9 and illustrates another embodiment of this invention.

FIGURE 19 is a top plan view of another container of this invention.

FIGURE 20 is a cross-sectional view taken on line 20—20 of FIGURE 19.

FIGURE 21 is a view similar to FIGURE 19 and illustrates another container of this invention.

FIGURE 22 is a cross-sectional view of FIGURE 21 and is taken on line 22—22 thereof.

While the various features of this invention are hereinafter described and illustrated as being formed in the wall of an end closure of a container or the like, it is to be understood that the opening means of this invention could be provided in other walls of the container, as desired.

Therefore, this invention is not to be limited to only the embodiments thereof illustrated in the drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIGURE 1, an improved container of this invention is generally indicated by the reference numeral 20 and comprises a substantially cylindrical container body 21 having the opposed open ends thereof closed by suitable end closures 22 in a manner well known in the art.

One of the end closures 22 has a wall 23 provided with a continuous tear strip or portion 24 defined by weakening the wall 23 along the concentric circles 25 and 26, such as by scoring the interior or exterior surface of the wall 23.

A pull tab 27 of thise invention is interconnected to the tear strip 24 and is adapted to pull the tear strip 24 from the container 20 in the manner illustrated in FIGURES 2 and 3 to initially open the container 20.

In particular, the end closure 22 has a slot means 28, FIGURE 4, formed in the wall 23 in such a manner that the slot means 28 defines a free end 29 of the tear strip 24. Preferably, the slot means 28 extends completely across the width of the tear strip 24 and has a substantially V-shaped configuration.

An opening 30 is formed in the tear strip 24 closely adjacent the free end 29 thereof, the opening 30 being disposed well within the scores 25 and 26 in the manner illustrated in FIGURE 4.

Either before the end closure 22 is secured to the

container 20 or thereafter, the tab means 27 is formed on the end closure 22 by injecting suitable sealing means against the end closure 22 that is disposed in the apparatus of FIGURE 5. For example, the sealing means forming the tab means 27 can comprise polyethylene or the like.

The apparatus 31 comprises a pair of die members 32 and 33, the die member 32 having a surface 34 interrupted by a pair of cavities 35 and 36. The cavities 35 and 36 are so constructed and arranged that the same are adapted to be disposed adjacent the slot means 28 and opening 30 in the end closure 22 when the end closure 22 is disposed against the surface 34 of the die member 32 in the manner illustrated in FIGURE 5.

The die member 33 has an end surface 37 that mates with the surface 34 of the die member 32 and is interrupted by a cavity 38 which mates with the cavities 35 and 36 of the die member 32 and is so constructed and arranged that the same defines the tab means 27 in the configuration illustrated in FIGURE 1. A passage means 39 is formed in the die member 33 and is interconnected to the cavity 38 whereby the sealing means 40 can be forced through the passage means 39 under pressure to fill the cavities 38, 35 and 36 of the die members 33 and 32 in the manner illustrated in FIGURE 5.

For example, when the sealing means 40 comprises polyethylene or the like, the sealing means 40 is heated to approximately 275° to 300° F. to render the same relatively plastic and is forced through the passage means 39 under several tons of pressure whereby the sealing means flows into the cavity 38 and has a portion 41 thereof disposed in the slot means 28 and interconnected to an enlarged portion 42 disposed on the other side of the end closure blank 22 and formed by the cavity 35. Similarly, a portion 43 of the sealing means 40 is disposed in the opening 30 of the end closure 22 and is interconnected to an enlarged portion 44 disposed on the other side of the end closure 22 and formed by the cavity 36.

Since the sealing means 40 is placed under several tons of pressure in the apparatus 31, the portions 41 and 43 thereof disposed respectively in the slot means 28 and opening 30 are compressed against bounding edges of the wall 23 to substantially hermetically seal the portions 41 and 43 in the slot means 28 and opening 30 whereby the end closure 22 can be subsequently utilized to hermetically seal or vacuum package a desired product within the container 20 in a manner well known in the art.

After the sealing means solidifies, the end closure 22 and interconnected tab means 27 are removed from the apparatus 31 and can be utilized to form the container 20 in the manner illustrated in FIGURE 1.

When it is desired to open the container 20, the handle portion 45 of the tab means 27 is manually grasped and pulled upwardly relative to the container 20 in the manner illustrated in FIGURE 2 whereby the enlarged portion 42 of the tab means 27 pulls out of the slot means 28 and carries the free end 29 of the tear strip 24 therewith.

Further movement of the tab means 27 away from the container 20 causes the tear strip 27 to separate along the score lines 25 and 26 in the manner illustrated in FIGURE 3 whereby the tear strip 24 can be completely removed from the wall 23 of the container 20 to open the container 20.

Since the tab means 27 is permanently interconnected to the tear strip 24 by the portions 43 and 44 thereof, the tab means 27 is adapted to fully pull the tear strip 24 from the container 20 in the manner illustrated in FIGURE 3.

Therefore, it can be seen that not only does the tab means 27 permit a free end of the tear strip 24 to be pre-formed so that the tear strip 24 can be initially separated from the container 20 with a minimum of effort,

but also the tab means 27 hermetically seals closed the slot means 28 and opening 30 so that the end closure 22 can be utilized to hermetically seal or vacuum package the products within the container 20.

Since the end closure 22 must be placed in the apparatus 31 in the proper rotational position thereof so that the tab means 27 can be formed at the slot means 28 and opening 30 thereof, another embodiment of this invention is provided wherein the end closure carrying the opening means of this invention can be disposed in any desired rotational position in an apparatus of this invention to form the pulling tab means without requiring proper positioning of the end closure in the apparatus.

In particular, an end closure 46 is illustrated in FIGURE 7 and comprises a wall 47 having a tear strip 48 formed therein and defined by a pair of scores 49 and 50, a portion 51 of the tear strip 48 defining substantially continuous circular structure having a leading portion 52 spiraling or curving into the center of the circular portion 51 thereof in the manner illustrated in FIGURES 7 and 8.

A tab means 53 is interconnected to the leading portion 52 of the tear strip 48 at the center of the circular portion 51 thereof in a manner hereinafter described whereby the pulling tab can be manually grasped and pulled relative to the end closure 46 to unwind the tear strip 48 and open the wall 47 of the end closure 46 in substantially the same manner as illustrated in FIGURES 2 and 3.

As illustrated in FIGURE 8, the end closure 46 originally has a slot means 54 formed in the wall 47 thereof, the slot means 54 defining an enlarged free end 55 of the leading portion 52 of the tear strip 48 for a purpose hereinafter described.

Preferably, the slot means 54 is substantially circular and has its center superimposed on the center of the circular portion 51 of the tear strip 48.

An opening 56 is formed in the free end 55 of the tear strip 48 at the center of the circular portion 51 of the tear strip 48.

In this manner, the end closure blank 46 formed in the manner illustrated in FIGURE 8 can be subsqeuently disposed in the apparatus 57 of this invention as illustrated in FIGURE 10 in any desired rotational position therein to form the tab means 53 in a manner hereinafter described, because the tab means 53 need not project across the end closure 46 in the position illustrated in FIGURE 7 as the same may be disposed at any position relative thereto as long as the attaching end 58 of the tab 53 is disposed at the center of the circular portion 51 of the tear strip 48.

The apparatus 57 comprises a pair of die members 59 and 60, the die member 59 having a surface 61 interrupted by a cavity 62 and an annular cavity 63 which surrounds the cavity 62.

An annular flange 64 projects upwardly from the surface 61 of the die member 58 whereby the end closure blank 46 is adapted to be held in the proper position by the flange 64 so that the opening 56 in the free end 55 of the tear strip 48 is disposed adjacent the cavity 62 while the slot means 54 is disposed adjacent the annular cavity 63 regardless of the rotational position of the end closure 46 relative to the die member 59.

The die member 60 has a surface 65 that mates with the surface 61 of the die member 59, the surface 65 being interrupted by a cavity 66 which defines the desired configuration of the tab means 53 as illustrated in FIGURE 7 and mates with the cavities 62 and 63 of the die member 59.

A passage means 67 if formed in the die member 60 to convey the sealing means 68 to the cavities 66, 63 and 62 of the die members 60 and 59 in substantially the same manner as the apparatus 31 whereby the sealing means 68 can be forced under pressure into the cavities 66, 63 and 62.

A portion 69 of the sealing means 68 is disposed in the opening 56 of the end closure 46 and is interconnected to an enlarged portion 70 of the tab 53 which is disposed on the other side of the end closure from the tab 53 and formed by the cavity 62 to permanently interconnect the tab 53 to the free end 55 of the tear strip 48.

Similarly, a portion 71 of the sealing means 68 is disposed in the slot means 54 and is interconnected to an enlarged annular portion 72 disposed on the other side of the end closure 46 and formed by the cavity 63.

Since the portions 69 and 71 of the sealing means 68, such as the aforementioned polyethylene or the like, is placed under compression against the bounding edges of the slot means 54 and opening 56, the portions 69 and 71 are hermetically sealed in the slot means 54 and opening 56.

In this manner, the end closure 46 can be utilized to hermetically seal or vacuum package a product in a container containing the end closure 46 in a manner similar to the container 20 previously described.

When it is desired to open the end closure 46 as illustrated in FIGURE 7, the free end 73 of the tab means 53 is manually grasped and pulled away from the end closure 46 whereby part of the enlarged annular portion 72 of the tab means 53 is pulled from the slot means 54 to free the free end 55 of the tear strip 48 from the wall 47 of the end closure 46.

Since the tab means 53 is permanently interconnected to the free end 55 of the tear strip 48 by the portions 69 and 70 thereof, further movement of the tab means 53 away from the end closure 46 causes the tear strip 48 to pull away from the wall 47 of the end closure 46 to open the same, the leading portion 52 of the tear strip separating first and the circular portions 51 being separated thereafter.

Therefore, it can be seen that the tab means 53 of the end closure 46 can be formed thereon in a relatively simple manner to not only permit the end closure 46 to hermetically seal or vacuum package products within a container or the like, but also to readily permit the free end 55 of the tear strip 48 to be separated from the end closure 46 when it is desired to open the container or the like.

Another container of this invention is illustrated in FIGURE 11 and is generally indicated by the reference numeral 74, the container 74 comprising a substantially cylindrical container body 75 having the opposed open ends thereof closed by end closures 76 in a manner well known in the art.

One of the end closures 76 has the wall 77 thereof interrupted by a plurality of openings 78 to provide means for dispensing the contents of the container 74 by a simple shaking motion of the container after the same has been inverted or tilted to the desired degree.

In order to permit the product packaged within the container 74 to be hermetically sealed or vacuum packaged therein, a tab means 79 of this invention is disposed against the exterior surface of the wall 77 and has portions 80 thereof disposed in the openings 78 and respectively interconnected to enlarged portions 81 disposed on the other side of the wall 77.

The tab means 79 is formed in apparatus similar to the apparatus 31 and 57 previously described whereby suitable sealing means, such as polyethylene or the like, is injected into the apparatus under several tons of pressure to compress the portions 80 of the tab means 79 in the openings 78 whereby the openings 78 are substantially hermetically sealed closed.

The tab means 79 has a handle portion 82 which can be manually grasped by the ultimate consumer to peel or pull the tab means 79 from the container 74 in the manner illustrated in FIGURE 13 to pull the enlarged portions 81 of the tab means 79 through the openings 78 to open the openings 78 when it is desired to dispense the contents of the container 74 through the openings 78.

Another dispensing container of this invention is illustrated in FIGURE 14 and is generally indicated by the reference numeral 83, the container 83 comprising a substantially cylindrical container body 84, FIGURES 15 and 16, having the opposed open ends thereof closed by end closures 85 in a manner well known in the art.

One end of the end closures 85, FIGURE 14, has a wall 86 provided with a plurality of pairs of adjacent elongated openings 87, each pair of openings 87 being separated by an intermediate portion 88 of the wall 86. Preferably, the openings 88 are disposed adjacent the outer peripheral edge of the wall 86 to provide dispensing means for the product disposed in the container 83.

A tab means 89 is utilized to initially seal closed a respective pair of openings 87 and and has a handle portion 90 to permit manual grasping of the tab means 89 to peel or pull the tab means 89 from the container 83 in the manner illustrated in FIGURE 16 to open the selected pair of openings 87.

As illustrated in FIGURE 15, each tab means 89 has portions 91 respectively disposed in the adjacent openings 87 and interconnected to an enlarged portion 92 disposed on the other side of the wall 86, the enlarged portion 92 extending completely across the under surface of the intermediate portion 88 of the wall 86.

The tab means 89 is formed by apparatus similar to the apparatus 31 and 57 previously described whereby suitable sealing means, such as polyethylene or the like, is forced into the mold cavities under several tons of pressure so that the portions 91 disposed in the openings 87 substantially hermetically seal closed the openings 87 so the end closure 85 is adapted to hermetically seal or vacuum package products within the container 83.

When it is desired to open the container 83, one of the tab means 89 is pulled away from the container 83 in the manner illustrated in FIGURE 16 whereby the intermediate portion 88 of the wall 86 tears through the enlarged portion 92 thereof at 93 to permit the enlarged portion 92 to be pulled from the adjacent openings 87 to open the openings 87 in the manner illustrated in FIGURE 16.

Therefore, the ultimate consumer can tear one or more tabs 89 from the container 83 to provide means for dispensing the contents of the container through the end closure 85 thereof.

While the tab 27 illustrated in FIGURE 6 has the portions 41 and 44 thereof, which respectively pass through the slot 28 and opening 30 in the tear strip 24, separated from each other, it is to be understood that the portions 41 and 44 of the tab 27 could be integrally interconnected together by a bridging portion of the sealing means disposed against the interior surface of the tear strip 24 and between the slot 28 and aperture 30, if desired, to more firmly secure the tab 27 to the tear strip 24.

In particular, reference is made to FIGURE 17 wherein the tab 27*a* has the portions 41*a* and 44*a*, which are exuded through the slot 28*a* and the aperture 30*a* formed in the container wall 23, integrally joined together by a bridging portion 94 of the sealing means whereby the tab 27*a* is firmly secured to the tear portion 24 of the container wall 23 not only by the portions 41*a* and 44*a* thereof but also by the bridging portion 94.

The tab 27*a* can be readily made by the apparatus 31 illustrated in FIGURE 5 by modifying the die member 32 thereof to include a channel or recess interconnecting the recesses 35 and 36 thereof so that the bridging portion 94 will be formed against the interior surface of the wall 23 between the slot 28*a* and aperture 30*a*.

Similarly, the portions 70 and 72 of the pull tab 53 illustrated in FIGURE 9 could be integrally joined together by a bridging portion of the sealing means in the above manner.

In particular, the tab means 53*a*, illustrated in FIGURE 18 has the portions 70*a* and 72*a*, which respectively exude through the aperture 56*a* and slot 54*a*, integrally joined together by a bridging portion 95 whereby the

pull tab 53*a* is more firmly secured to the free end 55 of the tear strip 48 formed in the container wall 47 of FIGURE 8.

The bridging portion 95 of the pull tab 53*a* illustrated in FIGURE 18 can be readily made by the apparatus 57 illustrated in FIGURE 10 by modifying the die member 59 to include one enlarged chamber or recess having an outside diameter equal to the diameter defined by the recess 63 whereby the individual recess 62 would be eliminated.

As previously set forth, when the various pull tabs of this invention are formed on a tear strip provided in a circular end closure in the manner illustrated in FIGURE 8, the circular closure member 46 need not be positioned in any particular rotational position in the die apparatus forming the pull tab 53 because the pull tab 53 can extend in any direction from the free end 55 of the tear strip 48 to subsequently tear the tear strip 48 from the end closure 46 in the manner previously described.

However, should the tab 53 illustrated in FIGURE 7 be disposed 180 degrees from the position illustrated, the ultimate consumer may try to pull the tab 53 in the wrong direction for severing the tear strip 48 from the container 46.

Therefore, other embodiments of this invention are respectively illustrated in FIGURES 19 and 21 and provide structures wherein the particular end closure need not be disposed in any particular rotational position in the die means forming the pull tabs thereof because the pull tabs are substantially symmetrical to the respective circular end closures.

In particular, an end closure 96 is illustrated in FIGURES 19 and 20 and comprises a substantially circular tear portion 97 defined by concentrically disposed score lines 98 and 99, the tear portion or strip 97 having a leading portion 100 arcuately curving into the center of the end closure 96 and terminating in a free end 101 defined by an arcuate slot 102 having its center superimposed on the center of the end closure 96.

The center of the free end 101 of the tear strip 97 is provided with an aperture 103 passing therethrough, the aperture 103 being located at the center of the end closure 96 in the same manner as the aperture 56 of the end closure 46 illustrated in FIGURE 8.

The pull tab 104 of the end closure 96 is formed in substantially the same manner previously described from suitable sealing means except that the pull tab 104 comprises an outer ring like structure 105 concentrically disposed relative to the center of the end closure 96 and interconnected to a central circular portion 106 by a plurality of radially disposed ribs 107, the central portion 106 of the pull tab 104 having portions 108 and 109 respectively passing through the slot 102 and the aperture 103 and joined together on the other side of the end closure 96 by a bridging portion 110 of the sealing means.

Either before the end closure 96 has the pull tab 104 formed thereon or thereafter, the exterior surface of the end closure 96 is suitably embossed or printed with an indicating arrow 111 and suitable instructions 112 in the proper position thereon so that the ultimate consumer will know just where to grasp the ring 105 of the pull tab 104 in order to pull the tear strip 97 from the end closure 96 when it is desired to initially open the end closure 96.

Therefore, it can be seen that the tab means 104 can be formed on the end closure 96 regardless of the rotational position of the end closure 96 in the appropriate die apparatus because the pull tab 104 is symmetrical about the free end 101 of the tear strip 97 and the instructions 112 and the arrow 111 will indicate the proper opening procedure of the pull tab 104.

Another end closure of this invention is generally indicated by the reference numeral 113 in FIGURES 21 and 22 and is also adapted to be disposed in any rotational position in the die apparatus forming the pull tab means 114 thereof because the pull tab means 114 is substantially symmetrical relative to the center of the end closure 113.

In particular, a single circular score line 115 is formed in the wall 116 of the end closure 113 and has a leading portion 117 curving inwardly from the circular portion thereof and feathering into an end of an arcuate slot 118 formed in the end closure 113 and having the center thereof superimposed on the center of the end closure 113, the slot 118 extending for approximately 270 degrees about the center of the end closure 113.

A plurality of circumferentially disposed apertures 119 are symmetrically disposed about the center of the end closure 113 and are disposed within the circle described by the slot 118 whereby the slot 118 defines a free end 120 of a tear portion of the end closure 113.

The pull tab 114 is formed from suitable sealing means in the above manner and comprises a pair of concentrically disposed rings 121 and 122 integrally joined together by radially disposed ribs 123.

When the tab means 114 is formed on the end closure 113, portions 124 thereof respectively exude through the apertures 119 and a portion 125 thereof exudes through the slot 118 to respectively seal closed the apertures 119 and slot 118, the portions 124 and 125 being joined together on the other side of the end closure 113 by a substantially annular portion 126 of the sealing means.

Therefore, it can be seen that the pull tab 114 can be formed on the end closure 113 regardless of the rotational position thereof in the die apparatus forming the pull tab 114 because the pull tab 114 is symmetrical about the center of the end closure 113.

Either before the pull tab 114 is formed on the end closure 113 or thereafter, the wall 116 of the end closure 113 is embossed or printed with an arrow 127 and instructions 128 to inform the ultimate consumer where to grasp the pull tab 114 to readily open the end closure 113.

When it is desired to open the end closure 113, the pull tab 114 is grasped at the arrow 127 and pulled upwardly away from the end closure 113 whereby the free end 120 of the tear portion is pulled from the end closure 113 and can be unwound therefrom around the leading portion 117 of the score line 115 as is apparent.

Accordingly, it can be seen that improved containers have been provided by this invention which have improved opening means which permit the product to be hermetically sealed or vacuum packaged in the container while still permitting the ultimate consumer to readily open the same without utilizing time-consuming opening devices.

Further, it can be seen that improved methods have been provided by this invention for making such containers or the like.

While the form of the invention now preferred has been disclosed as required by the statutes, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. In combination, a container having a wall, said wall having a tear portion and having slot means therein defining a free end of said tear portion, said tear portion having an opening passing transversely therethrough, and a sealing member disposed on one side of said wall and having portions thereof disposed in said slot means and said opening to respectively seal said free end of said tear portion to said wall solely by the characteristics of said sealing member and to interconnect said sealing member to said tear portion.

2. A combination as set forth in claim 1 wherein said container comprises a cylindrical container body having an open end and an end closure closing said end of said container body, said end closure having said wall provided with said tear portion.

3. In combination, a container having a wall, said wall having a tear portion and having slot means therein defining a free end of said tear portion, said tear portion having an opening passing transversely therethrough, and a tab disposed on one side of said wall and having por-

tions thereof respectively disposed in said slot means and said opening to respectively seal said free end of said tear portion to said wall solely by the characteristics of said tab and to interconnect said tab to said tear portion, said tab having a grasping end extending beyond said slot means.

4. A combination as set forth in claim 3 wherein said tear portion comprises a continuous tear strip, and wherein said slot means extends completely across said tear strip.

5. In combination, a container wall blank having a tear portion and having slot means therein defining a free end of said tear portion, said tear portion having an opening passing transversely therethrough, and a sealing member disposed on one side of said blank and having portions thereof disposed in said slot means and said opening to respectively seal said free end of said tear portion to said blank solely by the characteristics of said tab and to interconnect said sealing member to said tear portion.

6. A method for making a tear portion in a container wall or the like comprising the steps of forming slot means in said wall to define a free end of said tear portion, forming an opening through said tear portion, and disposing portions of a tab respectively through said slot means to seal the free end of said tear portion to said wall and through said opening to seal closed said opening and to interconnect said tab to said tear portion.

7. A method for making a tear portion in a container wall or the like comprising the steps of weakening said wall at least partially around the perimeter of said tear portion, forming slot means in said wall to define a free end of said tear portion, forming an opening through said tear portion, and disposing portions of a tab respectively through said slot means to seal the free end of said tear portion to said wall and through said opening to seal closed said opening and to interconnect said tab to said tear portion.

8. A method as set forth in claim 7 wherein said step of forming said opening in said tear portion includes the step of forming said opening in said free end of said tear portion.

9. A method as set forth in claim 7 wherein said step of weakening said wall defines a continuous tear portion in said wall.

10. A method for making an opening means for a container wall or the like comprising the steps of forming an opening in said wall, and sealing closed said opening by forcing sealing means against one side of said wall to cause said sealing means to form a tab on said one side of said wall, fill said opening and form an enlarged portion on the other side of said wall.

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