June 8, 1965 W. E. CHEELEY 3,187,933

CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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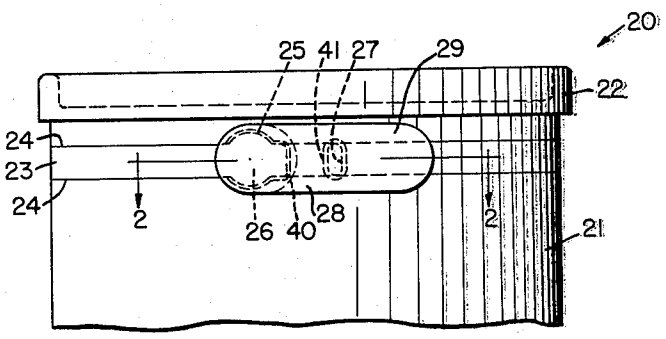


FIG-1

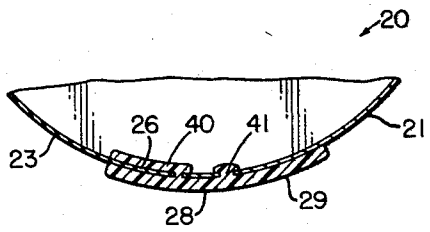


FIG-2

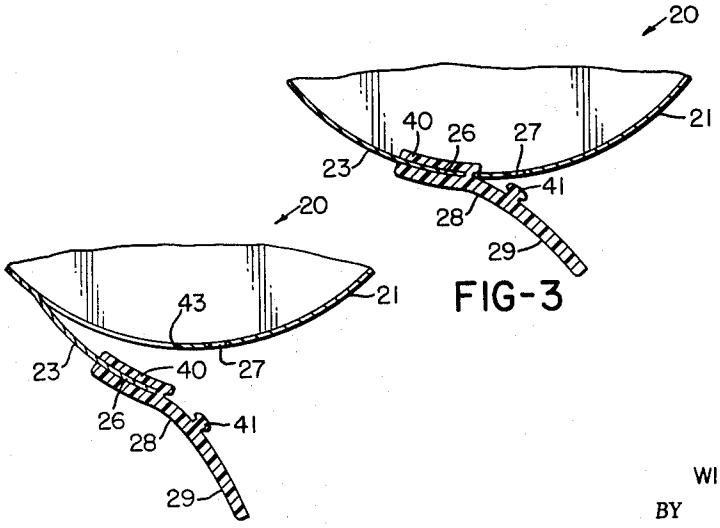


FIG-3

FIG-4

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CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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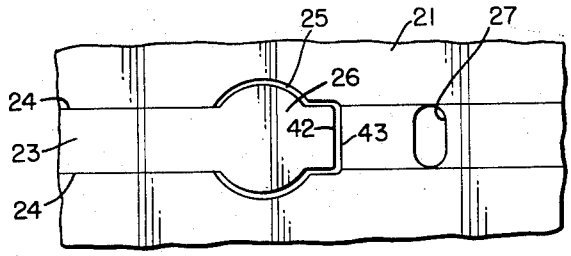


FIG-5

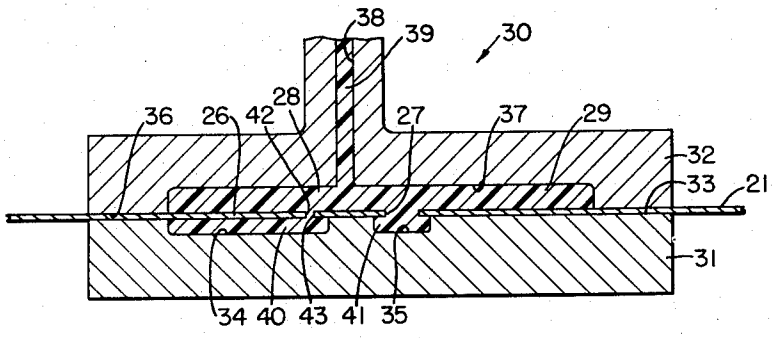


FIG-6

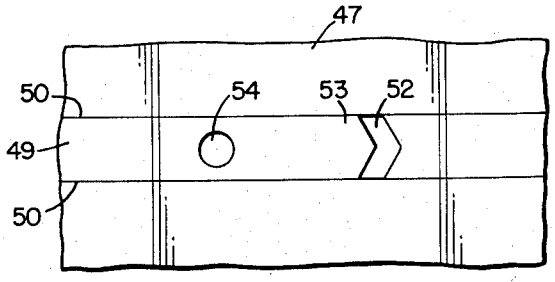


FIG-7

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CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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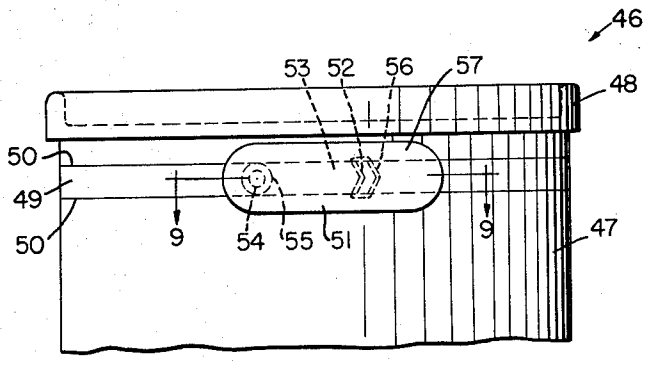


FIG-8

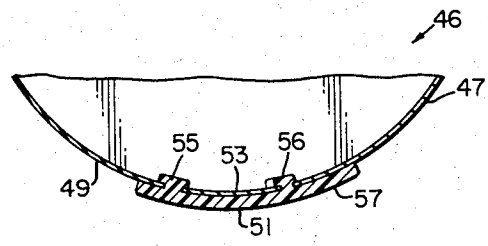


FIG-9

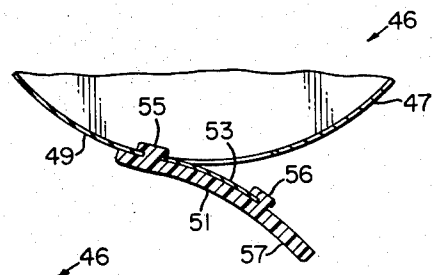


FIG-10

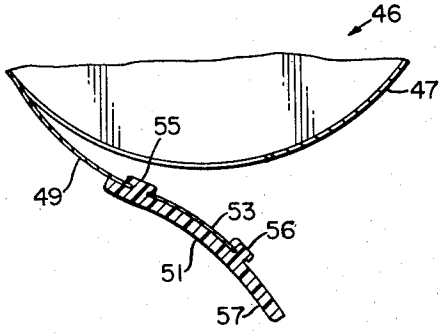


FIG-11

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June 8, 1965 W. E. CHEELEY 3,187,933

CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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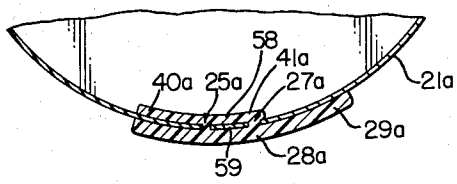


FIG-12

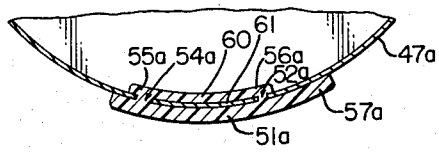


FIG-13

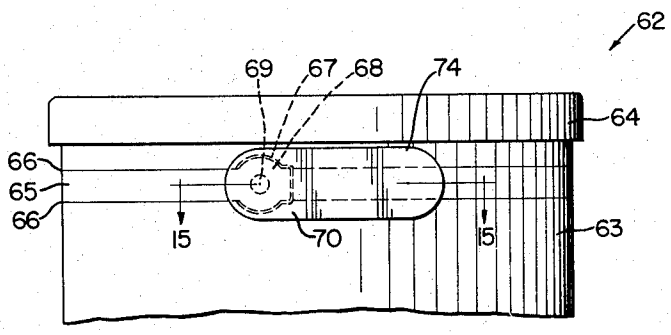


FIG-14

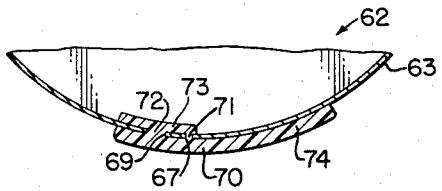


FIG-15

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3,187,933

CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE

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Filed Oct. 4, 1961, Ser. No. 142,961
13 Claims. (Cl. 220—54)

The invention relates to an improved container or the like 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 portion or strip, 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 strip or 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.

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, side view of an improved container of this invention.

FIGURE 2 is a fragmentary cross-sectional view of the container illustrated in FIGURE 1 and is taken on line 2—2 thereof.

FIGURE 3 is a view similar to FIGURE 2 and illustrates the method of initially releasing the handle portion of a pull tab or the like.

FIGURE 4 is a view similar to FIGURE 2 and illustrates the method of initially freeing the leading end of the tear strip of the container of FIGURE 1.

FIGURE 5 is a plan view of a container wall blank incorporating features of this invention.

FIGURE 6 is a cross-sectional view of an apparatus of this invention for forming the pull tab means for the container of FIGURE 1.

FIGURE 7 is a view similar to FIGURE 5 and illustrates another container wall blank of this invention.

FIGURE 8 is a view similar to FIGURE 1 and illustrates another container of this invention.

FIGURE 9 is a fragmentary, cross-sectional view of

the container illustrated in FIGURE 8 as taken substantially on line 9—9 thereof.

FIGURE 10 is a view similar to FIGURE 9 and illustrates the manner of initially opening the tear strip of the container of FIGURE 8.

FIGURE 11 is a view similar to FIGURE 10 and illustrates the tear strip in a more fully opened position.

FIGURE 12 is a view similar to FIGURE 2 and illustrates another embodiment of this invention.

FIGURE 13 is a view similar to FIGURE 9 and illustrates another embodiment of this invention.

FIGURE 14 is a view similar to FIGURE 1 and illustrates another embodiment of this invention.

FIGURE 15 is a fragmentary, cross-sectional view taken on line 15—15 of FIGURE 14.

While the various features of this invention are hereinafter described and illustrated as being formed in the side wall of the 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 opening ends thereof suitably closed by end closures 22 in a manner well known in the art.

A tear strip or portion 23 is formed in the container body or wall 21 by weakening the wall 21 around the perimeter of the tear portion 23, such as by scoring the inside or outside surface of the wall 21 at the parallel lines 24.

The wall 21 is provided with slot means 25, as best illustrated in FIGURE 5, which defines three sides of an end 26 of the tear strip 23 whereby the end 26 of the tear strip 23 is completely separated from the remaining portion of the container wall 21. Preferably, the slot means 25 is so constructed and arranged that the same provides a substantially enlarged free end 26 in relation to the size of the portion of the tear strip 23 disposed adjacent the free end 26 for a purpose hereinafter described.

An opening 27 is formed in the container wall 21 in spaced relation relative to the free end 26 of the tear strip 23 for a purpose hereinafter described.

A suitable pulling tab 28 is interconnected to the container wall 21 in a manner hereinafter described by having a portion thereof disposed in the slot means 25 and another portion thereof disposed in the opening 27 whereby the portion of the handle or tab 28 disposed in the slot means 25 hermetically seals the free end 26 of the tear strip 23 to the wall 21 and interconnects the tab 28 to the free end 26 of the tear strip 23. Similarly, the portion of the tab 28 disposed in the opening 27 hermetically seals closed the opening 27 and temporarily secures the handle portion 29 of the tab 28 to the wall 21 for a purpose hereinafter described.

One method and apparatus for forming the tab 28 on the container wall 21 is illustrated in FIGURE 6.

The apparatus 30 comprises a pair of die members 31 and 32, the die member 31 having an exterior surface 33 interrupted by a pair of cavities 34 and 35 adapted to be disposed adjacent the slot means 25 and opening 27 in the container wall blank 21 when the container wall blank 21 is placed in the apparatus in the manner illustrated in FIGURE 6.

The die member 32 has a surface 36 which mates with the surface 33 of the die member 31, the surface 36 of the die member 32 being interrupted by a cavity 37 which

forms the tab 28 in the configuration illustrated in FIGURE 1.

The cavity 37 of the die member 32 is interconnected to a passage means 38 which is adapted to supply sealing means 39 or the like to the mating cavities 34, 35 and 37 of the die members 31 and 32 when the same are assembled together in the manner illustrated in FIGURE 6.

The sealing means 39 utilized to form the tab 28 can comprise any desired material, such as polyethylene or the like.

When polyethylene or the like is utilized, the same is heated to approximately 275° to 300° F. to render the same relatively plastic and is forced through the passage means 38 under several tons of pressure whereby the sealing means 39 flows into the cavities 37, 34 and 35 to form the tab 28. A portion of the sealing means 39 flows through the slot means 25 of the container wall blank 21 to form an enlarged portion 40 on the other side of the wall 21. Similarly, a portion of the sealing means 39 flows through the opening 27 to form an enlarged portion 41 on the other side of the container wall 21.

Since the sealing means 39 is forced into the cavities 34, 35 and 37 of the die members 31 and 32 under several tons of pressure, the portion of the sealing means 39 disposed between the mating edges 42 and 43 of the enlarged free end 26 and wall 21 is placed under compression so that a substantially hermetic seal is created between the free end 26 of the tear strip 23 and the edge 43 of the container wall 21. Similarly, the sealing means 39 disposed within the opening 27 in the container wall 21 is placed under compression whereby the opening 27 is substantially hermetically sealed by the sealing means 39.

After the tab 28 has been formed in the above manner on the container wall blank 21, the container wall blank 21 is formed into a cylindrical container body in any manner well known in the art. For example, the lapped seam of the container body 21 can be disposed closely adjacent the opening 27 in the container wall 21 on the side thereof remote from the free end 26 of the tear strip 23.

While the tab 28 has been illustrated as being formed on a substantially flat container wall blank 21, it is to be understood that the tab 28 could be formed in a similar manner on a pre-formed container body 21 rather than on a blank thereof, as desired.

In any event, the tab 28, when initially formed, substantially hermetically seals closed the slot means 25 and opening 27 in the container body 21 whereby the product subsequently disposed in the container 20 can be substantially hermetically sealed therein or placed under vacuum as desired.

When the ultimate consumer desires to open the container 20, the ultimate consumer merely grasps the free end 29 of the tab 28 and pulls the same outwardly relative to the container body 21 in the manner illustrated in FIGURE 3 whereby the enlarged portion 41 of the tab 28 is pulled out of the opening 27 to free the tab 28 from the wall 21.

Further outward movement of the tab 28 relative to the container body 21 causes the free end 26 of the tear strip 23 to be pulled away from the container body 21 in the manner illustrated in FIGURE 4 whereby the interconnected tab 28 is adapted to pull the tear strip 23 from the container wall 21 in a conventional manner.

Therefore, it can be seen that the tear strip 23 can be initially provided with a free end 26 which is readily adapted to be separated from the container wall 21 when the tab 28 is pulled relative thereto.

Accordingly, the features of this invention provide a container or the like which is adapted to hermetically seal or vacuum package products therein and has an opening means which is relatively simple to operate without utilizing a time-consuming key-winding operation or the like.

Another container of this invention is generally indicated by the reference numeral 46 in FIGURE 8 and comprises a substantially cylindrical container body 47 having the opposed pair of open ends thereof closed by suitable end closures 48 in a manner well known in the art.

The container body or wall 47 is provided with a longitudinally disposed tear strip 49 defined by weakening the wall 47 around the perimeter of the tear strip 49, such as by scoring the inside or outside surface of the wall 47 along the parallel disposed lines 50.

A tab 51 is interconnected to the tear strip 49 in a manner hereinafter described to readily pull the tear strip 49 from the container wall 47 when it is desired to open the container 46 in a manner similar to the tab 28 previously described.

As best illustrated in FIGURE 7, the container wall 47 has a slot means 52 formed therein which extends completely across the tear strip 49 so as to define a free end 53 of the tear strip 49.

An opening 54 is formed in the tear strip 49 at a point slightly spaced from the free end 53 of the tear strip 49, the opening 54 being disposed completely within the outer perimeter of the tear strip 49 for a purpose hereinafter described.

The tab 51 is formed in substantially the same manner as the tab 28 previously described by forcing sealing means into the opening 54 and slot means 52 of the container wall 47 whereby a portion of the sealing means passes through the opening 54 and defines an enlarged portion 55 on the other side of the container wall 47. Similarly, a portion of the sealing means is forced through the slot means 52 to form an enlarged portion 56 on the other side of the container wall 47 in the manner illustrated in FIGURE 9.

While the slot means 52 can have any desired configuration, it is preferred that the same have a substantially V-shaped configuration as illustrated in FIGURE 7 so as to facilitate the separation of the free end 53 of the tear strip 49 from the container wall 47 along the parallel disposed score lines 50.

If the tab 51 is formed on a substantially flat container blank in the manner illustrated in FIGURE 6, the container blank 47 is then formed into the cylindrical container body 47 in a manner well known in the art, the lapped seam of the container body 47 preferably being disposed closely adjacent the slot means 52 on the side remote from the opening 54. However, it is to be understood that the lapped seam could be disposed in any suitable position and the tab 51 could be formed on a pre-formed container body 47 or the like.

When the ultimate consumer desires to initially open the container 47, the free end 57 of the tab 31 is grasped and pulled outwardly relative to the container wall 47 in the manner illustrated in FIGURE 10 whereby the enlarged portion 56 of the tab 51 pulls out of the slot means 52 and carries the free end 53 of the tear strip 49 therewith.

Further movement of the tab 51 relative to the container wall 47 causes the tear strip 49 to separate from the container wall 47 as the enlarged portion 55 of the tab 51 permanently secures the tab 51 to the tear strip 49.

Therefore, it can be seen that the tab 51 not only permits the container 46 to hermetically seal or vacuum package the product therein because of hermetically sealing closed the slot means 52 and opening 54 therein, but also permits a free end of the tear strip 49 to be formed so that the container 47 can be opened in a relatively simple manner without requiring a time-consuming key-winding operation.

While the tab means 28 illustrated in FIGURE 1 has the portions 40 and 41 thereof separated from each other, it is to be understood that the portions 40 and 41 can be integrally joined to each other by a bridging portion of the sealing means spanning the interior surface of the

wall 21 between the slot 25 and the opening 27 to more securely interconnect the tab 28 to the tear strip 23.

In particular, the container wall 21*a* illustrated in FIGURE 12 has the slot 25*a* and opening 27*a* formed therein in the manner similar to the slot 25 and opening 27 of FIGURE 5. However, the tab 28*a* has the portions 40*a* and 41*a* thereof that exude respectively through the slot 25*a* and opening 27*a* interconnected by a bridging portion 58 of the sealing means forming the tab 28*a*.

In this manner the portion 59 of the tear strip 23 disposed between the slot 25*a* and opening 27*a* will be carried with the tab 28*a* when the handle 29*a* thereof is pulled outwardly away from the wall 21*a* to tear the tear strip 23 from container wall 21*a* in the manner illustrated in FIGURES 3 and 4.

The tab 28*a* of FIGURE 12 can be readily made by the apparatus 30 of FIGURE 6 by forming a recess between the cavities 34 and 35 of the die member 31 to provide the bridging portion 58 of the tab 28*a*.

Similarly, the tab 51 illustrated in FIGURES 8 and 9 can have the portions 55 and 56 thereof integrally joined together by a bridging portion spanning the interior surface of the container wall 47 between the aperture 54 and slot 52, if desired, to more securely join the tab 51 to the tear strip 49.

In particular, reference is made to FIGURE 13 wherein the container wall 47*a* has a slot 52*a* and aperture 54*a* formed in the tear strip 49 in the same manner as illustrated in FIGURE 8.

However, the portions 55*a* and 56*a* of the tab 51*a* that respectively exude through the aperture 54*a* and slot 52*a* are integrally interconnected by a bridging portion 60 of the sealing means whereby the tab 51*a* is firmly secured to the portion 61 of the tear strip 49 disposed between the slot 52*a* and aperture 54*a* so that the portion 61 of the tear strip 49 is readily pulled away from the wall 47*a* when the handle 57*a* of the tab 51*a* is pulled outwardly relative to the container wall 47*a*.

Another embodiment of this invention is illustrated in FIGURES 14 and 15 and comprises a container construction 62 having a substantially cylindrical container body 63 provided with suitable end closures 64.

The container wall 63 is provided with a tear strip 65 defined by a pair of parallel disposed score lines 66 which extend substantially completely around the container body 63.

A slot 67 is formed in the container wall 63 to define an enlarged free end 68 of the tear strip 65 in a manner similar to the slot 25 illustrated in FIGURE 5.

In addition, an aperture 69 is formed centrally through the enlarged free end 68 of the tear strip 65 to complete the tear strip structure 65.

A pull tab 70 is formed of suitable sealing means in the manner previously described and is interconnected to the enlarged free end 68 of the tear strip 65 by having a portion 71 exuded through the slot 67 and another portion 72 thereof exuded through the aperture 69, the portions 71 and 72 of the pull tab 70 being interconnected together on the interior side of the container wall 63 by a bridging portion 73 whereby the tab 70 not only seals closed the slot 67 and aperture 69, but is also secured to the free end 68 of the tear strip 65.

In this manner, when the handle portion 74 of the pull tab 70 is pulled away from the container wall 63, the free end 68 of the tear strip 65 is pulled away from the container wall 63 by the pull tab 70 whereby the tear strip 65 can be torn from the container wall 63 in the above manner, the pull tab 74 not only being secured to the free end 68 of the tear strip 65 by the portion 71 thereof, but also by the portion 72 thereof passing through the aperture 69 in the free end 68 of the tear strip 65 and interconnected to the bridging portion 73 disposed on the interior side of the tear strip 65.

Therefore, it can be seen that this invention provides various methods and structures for forming a free end on a tear strip or the like that can be readily torn from a container wall or the like by a pull tab means of this invention without requiring a time-consuming key-winding operation as in the prior known tear strips 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, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear portion, said sealing means when grasped and pulled relative to said wall opening said slot means and pulling said tear portion from said wall.

2. In combination, a container having a wall, said wall having a tear portion and having slot means therein defining an enlarged free end of said tear portion, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said enlarged free end of said tear portion, said sealing means when grasped and pulled relative to said wall opening said slot means and pulling said tear portion from said wall.

3. In combination, a container having a wall, said wall having a tear strip defined by substantially parallel disposed scores and having slot means therein defining an enlarged free end of said tear strip, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear strip to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear strip, said sealing means when grasped and pulled relative to said wall opening said slot means and pulling said tear strip from said wall.

4. A combination as set forth in claim 3 wherein said tear strip is formed in the side wall of said container and extends substantially completely around said container.

5. A combination as set forth in claim 3 wherein said sealing means has a handle portion integrally interconnected thereto to facilitate pulling said tear strip from said container.

6. 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, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear portion, said sealing means having a handle portion integrally interconnected thereto to facilitate pulling said sealing means from said slot means to open said slot means and pull said tear portion away from said container.

7. 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 wall having an opening therein spaced from said slot means, and sealing means disposed in said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear portion, said sealing means having a handle portion integrally interconnected thereto to facilitate pulling said tear portion away from said container, said handle portion having a portion thereof disposed in said opening to seal closed said opening solely by the characteristics of said

sealing means and to temporarily hold said handle portion against said wall.

8. In combination, a blank for a container or the like, said blank having a tear portion and having slot means therein defining a free end of said tear portion, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear portion whereby said sealing means can be grasped and pulled relative to said blank to open said slot means and pull said tear portion from said blank.

9. A method for making a tear portion in a container wall or the like comprising the steps of forming slot means in said wall adjacent said tear portion to define a free end of said tear portion, and disposing homogeneous sealing means in said slot means to completely fill said slot means and seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said tear portion whereby said sealing means can be grasped and pulled relative to said wall to open said slot means and pull said tear portion from said wall.

10. A method as set forth in claim **9** wherein said step of disposing said sealing means in said slot means includes the step of integrally interconnecting a handle portion to said sealing means.

11. A method for making a tear portion in a container wall or the like comprising the steps of weakening the wall of the container 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, and disposing homogeneous sealing means in said slot means to completely fill said slot means and seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said tear portion whereby said sealing means can be grasped and pulled relative to said wall to open said slot means and pull said tear portion from said wall.

12. A method for making a tear portion in a container wall or the like comprising the steps of forming slot means in said wall adjacent said tear portion to define a free end of said tear portion. forming an opening in said wall in spaced relation relative to said slot means, and disposing homogeneous sealing means in said slot means and said opening to respectively completely fill said slot means in said opening and interconnect said sealing means to said tear portion and form a handle portion integral with said sealing means and attached to said wall at said opening, said sealing means sealing said free end of said tear portion to said wall and sealing closed said opening solely by the characteristics of said sealing means.

13. In combination, a container having a wall, said wall having a tear strip defined by substantially parallel disposed scores and having slot means therein defining an enlarged free end of said tear strip, and sealing means disposed in said slot means to seal said free end of said tear strip to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free end of said tear strip, said sealing means when grasped and pulled relative to said wall opening said slot means and pulling said tear strip from said wall, said wall having an opening provided therein in spaced relation relative to said slot means, said sealing means having a handle portion integrally interconnected thereto, said handle having a portion thereof disposed in said opening to seal said opening solely by the characteristic of said sealing means and to temporarily hold said handle against said wall.

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