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DISPENSING CLOSURE

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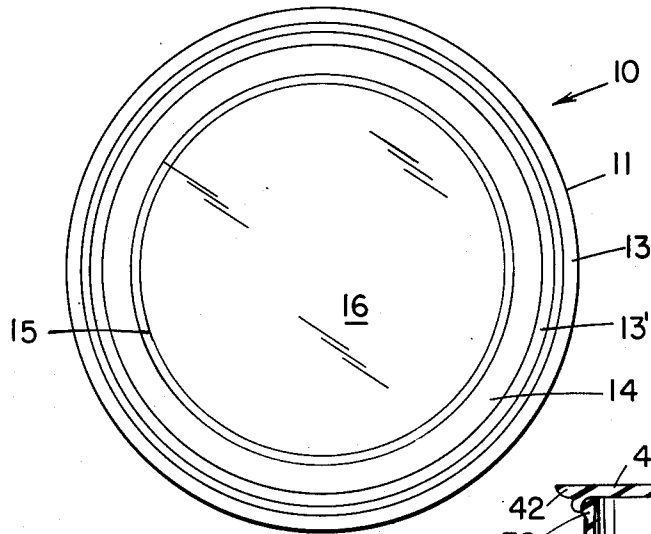


FIG. 1

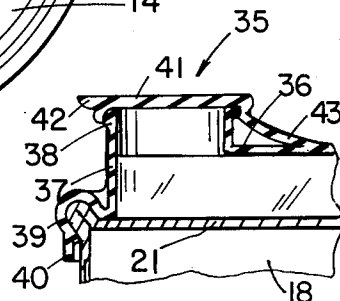


FIG. 4

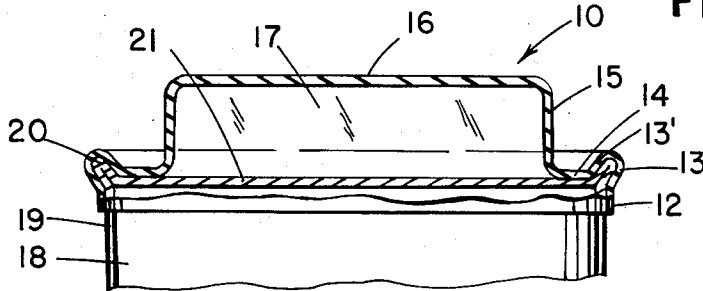


FIG. 2

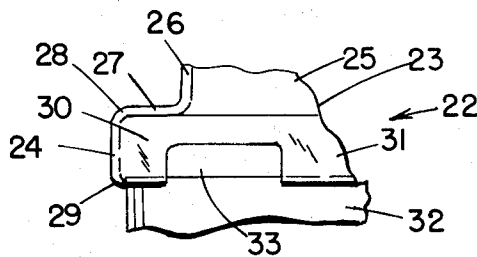


FIG. 3

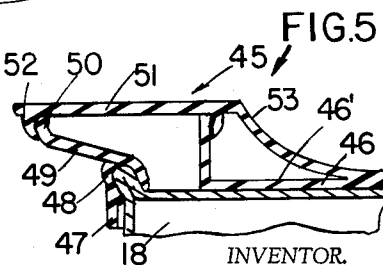


FIG. 5

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DISPENSING CLOSURE

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4 Claims. (Cl. 222-130)

This invention relates to a packaging assembly and in particular to an auxiliary closure for the end of a container such as a canister, and is a continuation in part of my copending application Serial No. 297,483, filed on July 8, 1963, for Product Container and Method of Producing same; the latter being a division of patent application Serial Number 93,989, filed March 7, 1961, now U.S. Patent 3,112,824.

In particular, the current invention relates to a packaging assembly including a canister such as the well known tin can, and a molded plastic article disposed against at least one end of said canister for the purpose of providing an auxiliary closure therefor and, in certain instances, retaining an article against the end wall of the can. Such a packaging assembly will have many uses as will be hereinafter pointed out.

A primary object of this invention is to provide a new and improved packaging assembly including a conventional metal can and a plastic closure disposed against one end wall thereof and adapted to serve one or more useful purposes.

Another object is to provide an improved structure in a packaging assembly including a conventional metal can having a beaded rim and a plastic closure retentively held in assembly at one end of said can by means of said beaded rim.

Another object is to provide an auxiliary closure for a metal can which may be utilized both for retaining an article against an end wall of the can and as means for effecting closure of the container after the end wall has been punctured or removed.

Another object is to provide a packaging assembly including a closure of improved design having deflectable wall portions permitting push-on assembly with a container.

Another object is to provide an auxiliary closure for a metal can having an integral pour spout and a closure therefor permitting said closure to also serve as a dispensing means not attainable by conventional can construction.

Another object is to provide an improved auxiliary closure for a tin can or the like having at least three utility functions including that of providing an air tight closure for the can once opened, means for retaining an article against an end wall of the can and means facilitating pouring and dispensing material from the can.

With the above and such other objects in view as may hereafter more fully appear, the invention consists of the novel constructions, combinations and arrangements of parts as will be more fully described and illustrated in the accompanying drawings, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

FIG. 1 is a plan view of a container closure;

FIG. 2 is a side view with parts broken away for clarity of the closure of FIG. 1 shown assembled against the end of a so called tin can; and

FIG. 3 is a partial side view of a container and auxiliary closure therefor which is a modified form of the embodiment of FIGS. 1 and 2.

FIG. 4 is a side view in cross section of a fragment of a container closure having an auxiliary closure means

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therefor including a pour spout and cover integral with the closure; and

FIG. 5 is a side view in cross section of a fragment of a modified closure and integral pour spout assembled with a main product container.

FIG. 1 illustrates certain details of a flexible plastic closure 11 shown in greater detail in FIG. 2, which is shown assembled against the end of a cylindrical container such as a conventional so called tin can 18. The conventional so called tin can is provided with a cylindrical side wall 19 which is joined to end walls such as 21 by means of a beaded formation 20 extending upwardly from the end wall and outwardly from the side wall. The beaded formation is generally formed by rolling portions of both the side and end walls together and may be characterized by solder sealing, tinning or welding the two rolled portions around the bead.

The circular, outwardly extending beaded formation 20 has been discovered to provide an ideal formation for retaining an auxiliary closure against the end of the can. Said closure 11 is shown as having a cylindrical side wall portion 12 extending parallel and closely adjacent to or in abutment with the cylindrical side wall 19 of the canister 18. The upper portion of the cylindrical side wall 12 of 11 is shown being outwardly deformed or shaped to conform to the outwardly extending beaded formation 20 of 18 and has an inside surface 13' conforming not only to the outside surface of the beaded formation 20 but to the upper and inside surface thereof. The construction of 13 is thus such as to substantially conform to the bead and frictionally contain the sub-closure 11 in assembly with the end of 18.

To further support 11 against the end of 18, the beaded formation 13 of 11 terminates inward of the bead 20 of the container and then extends substantially parallel to and in abutment with the outside surface of the end wall 21 of the main container 18 as shown by formation 14. The inner portion of 14 extends upwardly and away from 21 defining a side wall of a sub-housing having an end wall or top 16. The sub-housing defines a volume 17 which is totally enclosed between the plastic closure 11 and the end wall 21 of container 18.

The single plastic closure 11 may be formed by thermally deforming a sheet of thermo-plastic material over or in a mold or by injection molding a suitable plastic, such as polyethylene, polystyrene, polypropylene, vinyl, etc. Such auxiliary closure may serve either or both of two purposes. It may be utilized to retain an article or material in the volume 17 to be sold with the container 18 but which must be necessarily separated from the contents of 18. It may also be utilized as an auxiliary closure for the main container 18 after the end wall 21 is removed or punctured. The side wall 12 is thus sufficiently flexible to permit the snap-on assembly of 11 with the end of 18 prior to and after removal or puncture of the end wall 21.

A modified form of the invention is shown in FIG. 3 in which the side wall 24 of an auxiliary closure 23 which defines an assembly 22 with a container 32, is injection molded with a plurality of deflectable portions 31 which snap over the beaded formation of a container such as a tin can or the like. In FIG. 3 the container 32 is shown having a somewhat larger beaded side wall formation 33 than the bead 20 of FIG. 2. Said container 32 may be formed of plastic, glass or metal having a somewhat deeper or wider neck bead or rim 31 than the conventional metal tin can and accordingly the side wall 24 of the auxiliary closure 23 is shaped to conform to 31 with the lower rim portions 29 thereof inwardly deflected to frictionally secure 24 around the side wall of 31. Notation 25 refers to the volume defined between the end of

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31 and the upper closure formation 26 of 23 which corresponds to the enclosure defining volume 17 of FIG. 2. The side wall 24 of 23 conforms along portions 20a and 27 to part of the upper rim of container beaded formation 31 or the end wall of the container and, inward thereof to an upwardly projecting side wall formation 26 which extends to a top wall (not shown) corresponding to top wall formation 16 of FIG. 2 to provide a volume 25 enclosed by member 23 and the end of container 32.

The deflectable side wall portions 29 of the side wall 24 of 23 are preferably shaped to permit forced assembly and disassembly of 23 with the end of container 32 by a pushing and pulling action.

Notation 31 may also refer to a closure for the container 32 which is frictionally secured or threadably assembled with the end of 32.

FIG. 4 illustrates a modified design for a closure of the type provided in FIGS. 1 and 2 or FIG. 3 having a portion of the upper and side wall of the closure provided with a pouring spout and a cover therefor for dispensing a fluent material from a container or can which said closure is assembled on after the end wall 21 of the can has been removed. The container assembly 35 includes, in addition to the can 18, a flexible closure 36 preferably injection molded of a plastic material such as polyethylene, polypropylene or the like having a side and top wall as described and a spout 37 integrally formed and extending from the material of the side and/or top wall as illustrated. The upper rim 38 of the spout is provided with a bead formation for frictional engagement with the beaded rim 42 of a closure 41 therefor which is shown integrally molded with 36 by means of an elongated tab 43 secured to the top wall of 36 which is the equivalent of wall 16 of the closure shown in FIG. 2. The lower portion of 36 is shown having a beaded or folded formation 39 adapted to engage the beaded rim of the can and a downwardly extending side wall 40 as described. In other words, the side wall 40 is adapted to frictionally engage over the beaded formation defined by the upper rim of the can 18 and is removable therefrom by forcing same upwardly. Thus after the closure 36 is frictionally assembled with the end of can 18 after removal of the end wall 21 thereof, a conventional can may be provided with a lid having a pouring spout formed therewith to greatly simplify dispensing material from the can.

FIG. 5 illustrates a modified closure of the type provided in FIG. 4, the assembly being defined by the notation 45 and including a conventional cannister or can 18 as described. The closure 46 is injection molded of polyethylene, polypropylene or the like which is sufficiently flexible to permit frictional assembly and disassembly of the deflectable rim 47 thereof with the beaded rim 20 of the metal can 18. Unlike the closure of FIG. 4, the top wall 46' of closure 46 is not provided with an upwardly extending formation to provide a volume between the end wall 21 of the container 18 such as volume 17 of FIG. 2 although such a formation may be formed in 46.

A portion of the upper portion 48 of the sidewall 47 of the closure 46 is shown shaped with a pour spout 49 which projects radially beyond the rim of the container 18 so that fluent or liquid material dispensed from the spout will clear the side wall of the container when dispensed therefrom. The top wall 46' of the closure 46 abuts the end wall 21 of the can 18 and joins the side and rear wall portion 49' of the pour spout so as to confine the volume within the spout bounded by the end wall 21 of the main container, and a snap-on frictional closure 51. Thus a portion 21' of can top 21 may be opened by piercing with a tool or other means and will provide communication between the pour spout and the interior of the can 18 without the necessity of completely removing the end wall 21. The cover 51 for the pour spout has a circumscribing rim 52 adapted to be friction-

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ally engaged on the beaded rim 50 of the pour spout formation to provide an air tight closure. A flexible tab or hinge member 53 is integrally molded to the rear of 51 and the top wall 46' joining the two together to prevent loss of the cover 51. The lower rim 49'' of the pour spout portion 49 is preferably adapted to be compressively engaged against the end wall 21 of 18 when beaded portion 48 of closure 46 is frictionally assembled with the end of the container 18 so as to effect a fluid seal between the upper surface of end wall 21 and the pour spout and to prevent loss of fluid poured through the opening in portion 21' to the volume between 46' and 21.

In further modifications to the packaging arrangements illustrated, it is noted that the various structures may be interchanged or modified without departing from the spirit and scope of the invention. For example, the closure 11 of FIGS. 1 and 2 may be applied to any suitable container provided that the engaging and retaining beaded formation 13' is shaped to engage and be retained against the end of the device to which it is to be frictionally assembled. If a primary closure for a container is provided with a beaded upper rim or side wall in place of container 18 then closure 11 may be assembled therewith and the upper rim of the container on which said beaded primary closure is secured may also be shaped to retain the same closure 11. If closure 11 is modified as in FIGS. 1 and 4 with a pour spout, it may be assembled with the top of a container for use as the closure for said container once said top has been removed by pulling or unscrewing. In other words, structures in auxiliary closures of the types illustrated in FIGS. 4 and 5 may be assembled with the ends of closures used on pressurized or vacuum packed containers for use therewith after said containers are opened by the consumer to provide easily openable dispensing means.

While that portion of FIG. 4 which is not illustrated may be assumed to be in conformance with the remainder of the shape of the closure of FIG. 2, the device of FIG. 5 may or may not be provided with formations such as 15 and 16 of FIG. 2.

Further variations in the devices of FIGS. 3 to 5 include providing the side walls 47 and 40 with means for threadably assembling said closures at the ends of said main containers and providing threaded closure means for the pour spouts.

While I have disclosed preferred embodiments of my invention and have indicated various changes, it will be apparent that other changes, omissions and additions may be made in the invention without departing from the scope and spirit thereof.

I claim:

1. A packaging assembly comprising in combination with a container having a cylindrical side wall portion and a top wall joined in said side wall portion in a circumscribing beaded formation, said beaded formation extending upwardly from the top wall and outwardly from the side wall, a secondary closure device made of flexible plastic material and assembled with said container, said closure device having a sheet-like top wall and a circumscribing side wall joined to said top wall in a formation adapted to conform to the beaded formation of said container, said top wall of said closure device being shaped with an upwardly extending formation disposed inward of the portion thereof engaging the top wall of said container and defining a storage volume between said closure top wall and the end wall of said container, the side wall of said closure device shaped to engage said beaded formation to retain said closure device assembled with the end of said container, and a pouring spout formed integral with said closure device to permit the contents of said container to be dispensed from said pouring spout.

2. A container assembly in accordance with claim 1

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including a cap having a tab molded integral with said closure device, said cap adapted to be frictionally retained against the upper rim of said spout to provide a closure therefor.

3. A container assembly in accordance with claim 1, 5
said spout being formed integral with and an extension
of said upwardly extending formation in said top wall
of said closure device.

4. A container assembly in accordance with claim 3
including further closure means releasably assembled 10
with said spout for sealing same.

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