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G. MEYER-JAGENBERG

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CONTAINER MADE OF PAPER, CARDBOARD OR THE LIKE

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Fig. 1

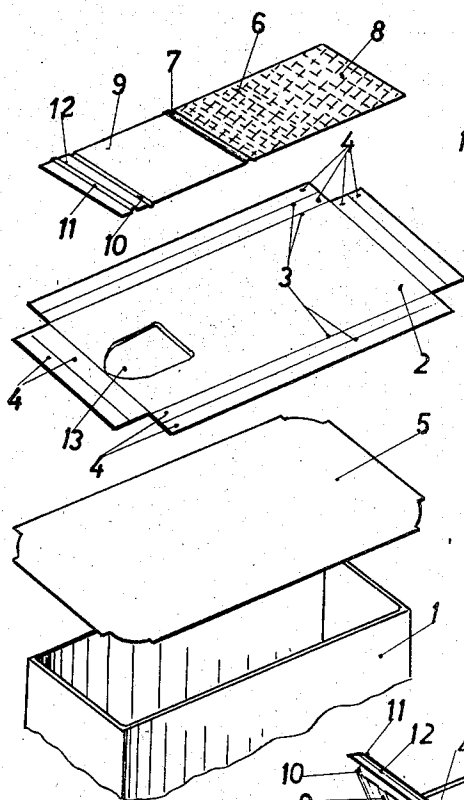


Fig. 2

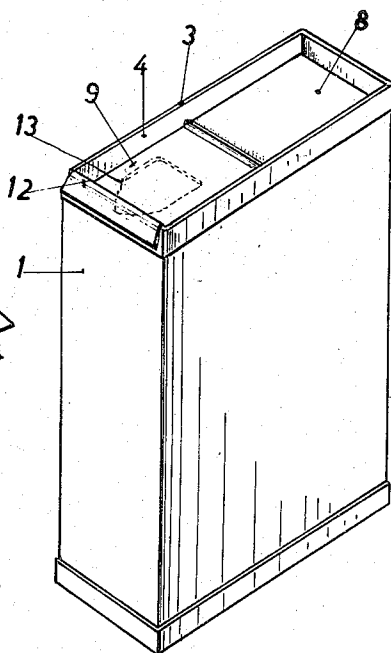


Fig. 3

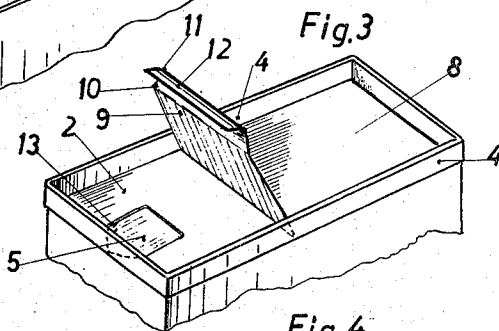
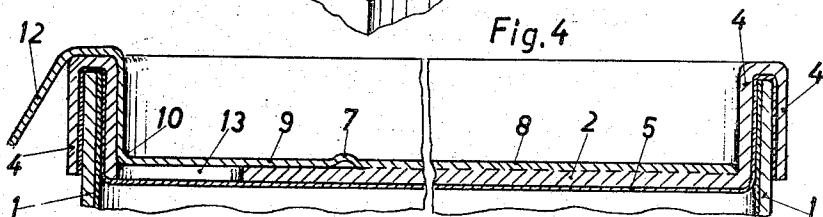


Fig. 4



Inventor
G. Meyer-Jagenberg
By *Charles Downing Lubell*
Attorney

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Günther Meyer-Jagenberg, Dusseldorf-Grafenberg, Germany, assignor to Jagenberg-Werke Akt.-Ges., Dusseldorf, Germany

Application January 25, 1955, Serial No. 483,952

Claims priority, application Germany March 23, 1953

1 Claim. (Cl. 229—7)

The present invention relates broadly to the art of containers.

More particularly this invention relates to a liquid tight container of paper, cardboard or the like, carton forming material.

Still more particularly the invention relates to a multi-sided container made of suitable carton forming material which is adapted to be filled with dry, pasty or liquid materials, and which container includes a tubular body portion and an inserted end closure provided at its edges with flanges which will be erected when the closure member is inserted in the open end of the container body to bear against the inner surface of the container body at its edges and to be folded down about the external edges of the body so as to enclose the edges in a U-shaped formation and to be subsequently compressed to a tight closure about the edges.

In order to meet the high demands as regards sealing and thus the tightness of such containers, particularly when they are to be filled with liquids, special precautions as regards design, choice of materials and methods of manufacture must be taken. To meet these demands as regards liquid tightness, there has been provided on the inner face of the seal or end closure a foil layer whose sole function is to bring about a perfect and tight seal particularly in the corners, and which further protects the end closure against permeation by the material within the container. The seal or end closure itself thus serves to reinforce the cross section of the container and also to protect the sensitive foil from external influences. The advantages and details of embodying a foil layer with the end closure is more fully disclosed in prior filed application Serial No. 419,441 filed March 29, 1954, now Patent No. 2,828,061, in the name of Hans Zerlin and assigned to the assignee of the present invention.

Although the subject matter of the said prior filed application ensures a liquid tight container, it does give rise to certain problems in connection with an easy and unhindered opening of such a container since it is desirable under certain instances to provide for a tight resealing of such a container after a discharge of part of the contents thereof.

Accordingly, the present invention has for a primary object to provide a container with a resealable end closure and in which the end closure per se is sealed from the container contents.

In the container art there are many instances of tear-up seals for containers but the same are not suitable for use with the type of container with which this invention is concerned. The preparation of a discharge aperture in a container by forming grooved or score lines in the body and adhesively connecting the tear-up flap with the container wall do not always ensure opening of the container along the lines provided and hence an effective resealing is not possible.

Thus the present invention has for an object to provide a container with a sealed end closure means which

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incorporates a removable and replaceable closure flap operable to facilitate resealing in an expeditious manner and which ensures the proper opening of the end of the container.

It is a further object of this invention to eliminate the defects of the prior art by providing an end closure for a container with a discharge aperture and covering the inner surface of the end closure and thus the aperture with a foil liner which protects the seal that is the closure per se against damage occasioned by contact with the contents of the container and on which container the discharge aperture in the end closure is closed by a releasable flap held onto the top of the end closure at least in the zone of the aperture therethrough by clamping action. Thus the invention avoids the provision of perforation or grooved or score lines which interfere with the opening of a container and further eliminates any glue joints adjacent the portion of the end closure that is to be opened, making it possible after lifting up the flap, held in closed position by clamping action, to expose the discharge aperture punched through the end closure part and also the underlying relatively thin foil under this aperture which then can be readily pierced so that the contents may be discharged.

It is a further object of the invention to provide such a container with an inserted end closure having an underlying foil seal layer and an aperture through the closure proper with a closure flap provided with an extension that serves as a grip for use in exposing the discharge opening and which closure flap is articulated on a score line remote from the opening with the balance of the closure flap being adhered by gluing to the top of the container end closure. In order to provide the clamping effect that is the gripping action between the inner side walls of the container closure and the closure flap to facilitate a relatively tight resealing the sides of the closure flap are cut so that the width thereof is somewhat greater than the space between the two opposite side walls of the container whereby the closure flap has to be forced into engagement with the top of the container and is frictionally held in place by the clamping action exerted by the side wall portions of the inserted container closure.

In addition to the fact that the extension of the flap serves to facilitate opening, the shape thereof has a further purpose of enclosing and covering the end wall and lip of the inserted closure that is adjacent the discharge opening so as to protect against external damages and maintain these surfaces sterile prior to and between discharges of material from the container.

Further and more particular objects will be apparent from the following description taken in connection with the accompanying drawings, in which:

Figure 1 is an exploded view illustrating the container and the various components of the end closure prior to assembly and insertion into the container.

Figure 2 illustrates a completed container in closed condition.

Figure 3 is a fragmentary view of the top portion of the container illustrating the closure flap in raised condition prior to discharge of the contents.

Figure 4 is a fragmentary longitudinal sectional view on an enlarged scale illustrating the top portion of a container in closed condition.

As indicated in Figure 1, the container is formed by a shell 1 which initially is flat and then is erected to tubular formation. The end closure comprises the blank portion 2 including peripheral flanges 4 provided with creased or imposed grooves or score lines 3 which constitute fold lines. The blank portion 2 is further provided with a discharge aperture 13 that is punched therethrough adjacent one of the narrow ends of the blank

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but inwardly of the innermost fold line at that end. The closure blank 2 is inserted in the open upper end of the container after being covered by a moisture proof foil layer 5 having corner portions that are not completely cut away as set forth in the said prior filed application Serial No. 419,441, now Patent No. 2,828,061, so that with the insertion of the end closure blank into the upper end of the container shell and the folding down of the flanges 4 over the upper edge of the shell an inserted closure is formed as referred to in that said application and in which the outermost flange 4 overlies the exterior of the top of each wall of the container shell. To ensure a tight bond between the foil and the adjacent surfaces of the container shell and the bottom of the foil and the undersurface end closure 2, the foil is coated on both sides with a binder which becomes adhesive under the action of heat and pressure or the foil is made of a thermoplastic material. Thus the flanges 4 of the closure blank and the underlying portions of the foil are adhered to the inner and outer surfaces of the top of the container shell 1 and enclose the rim of the container.

On the top of the end closure 2 there is fastened a flap denoted generally at 6. This flap 6 has a width somewhat larger than the area of the closure blank 2 that is comprised between the innermost of the groove lines denoted at 3. The flap 6 is divided by a groove line 7 which functions as a hinge so that the flap comprises what can be termed a cut portion 8 which is glued to the top surface of the inserted closure 2 and a cut portion 9 which is adapted to be raised when discharge is to be effected. Adjacent the cut portion 9 of the flap is an extension 12 delimited by groove lines 10 and 11 and which extension 12 is raised when the flap is inserted within the upstanding edges 4 of the closure part and is then lowered to embrace and enclose the upper edge of the end wall of the closure and container that is adjacent the discharge opening 13.

As is shown in Figures 2 and 4 in closed condition, the discharge opening 13 is covered from beneath by the foil layer 5 and from the top by the cut portion 9 of the flap 6. Since the width of the flap is greater than the space between the inner side surface of the inserted closure the cut portion 9 is held in its closed position by frictional clamping action since it has to be forced into this closed position.

The opening of the container is effected as illustrated in Figure 3 by grasping the extension 12 and raising the cut portion 9 of the flap so as to expose the discharge aperture 13 following which the foil layer 5 is pierced and the contents discharged.

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The positioning and shape of the opening 13 adjacent one of the narrow ends of the carton is such that on emptying the container the contents being discharged come in contact with only the edge portions 4 of the closure that were covered by the extension 12 before the flap 6 was raised, thus ensuring that prior to use the material within the container does not contact any unprotected parts of the container or closure walls.

Resealable flap 6 is preferably glued to top of end closure 2 before closure is applied to tubular body 1 which means that flap 6 is applied to the flat lying end closure 2 and both, end closure 2 with flap 6 glued-on, are together inserted into tubular body 1.

It is of course clear that while the bottom closure may be an inserted closure similar to the top closure it is not necessary that the same type closure be embodied at the bottom.

What is claimed is:

In a sheet material container of the type including a tubular body having upstanding side walls and an open rim at one end, an inserted closure panel recessed below said rim and including flanges applied against at least the inner periphery of the rim, a foil layer between the flanges on the panel and the inner periphery of the rim and completely underlying said panel, said panel having a completely cut out dispensing opening therein, a resealable flap means overlying at least the opening through the panel and an adjacent portion of the panel, said resealable flap means including two portions separated by a score line and covering the area of the body panel comprised between the flanges, one portion being adhesively united to the top of the body panel and the other portion constituting a pivotally mounted portion and including a free extension adapted to be gripped during the opening of the container, and said pivotally mounted portion having opposite edges adapted to make a force-fit engagement with the interior of opposite flanges of the inserted closure panel so as to be releasably clamped upon the top of the closure panel when the flap means is closed.

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