

Oct. 28, 1958

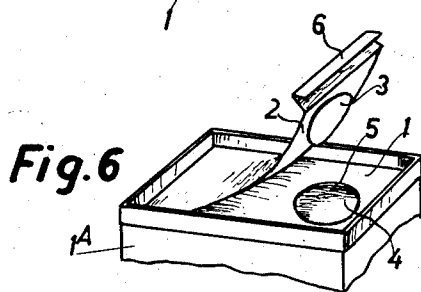
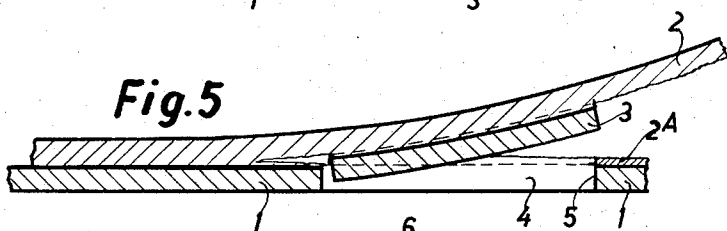
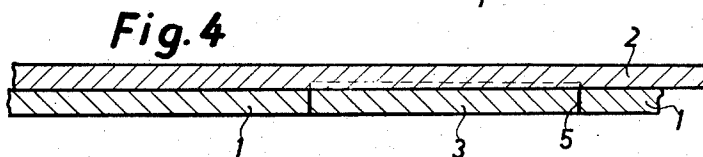
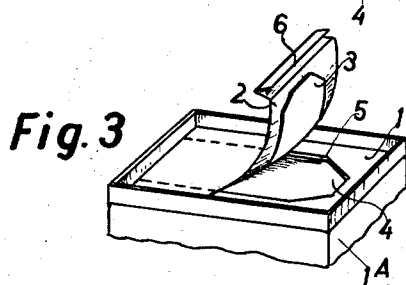
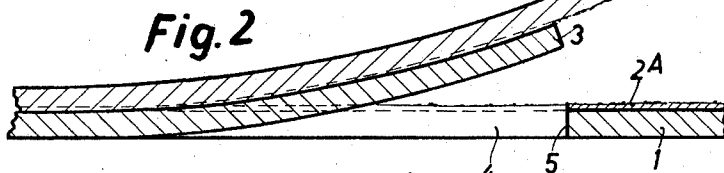
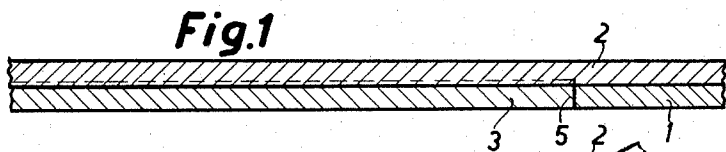
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2,858,060

RIPPING OR TEAR-OFF CLOSURE FOR CONTAINERS OF
PAPER, CARDBOARD OR THE LIKE MATERIAL
AND METHOD OF PRODUCING THE SAME

Filed Oct. 24, 1955

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 7

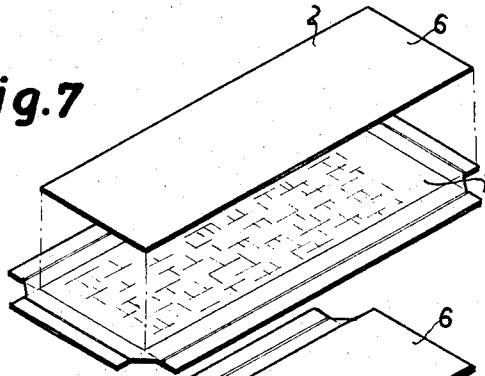


Fig. 8

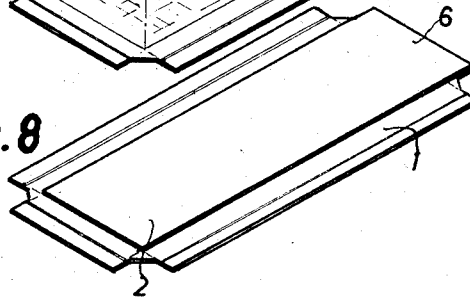


Fig. 9

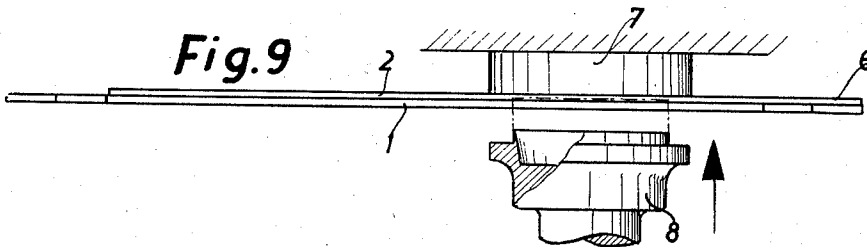
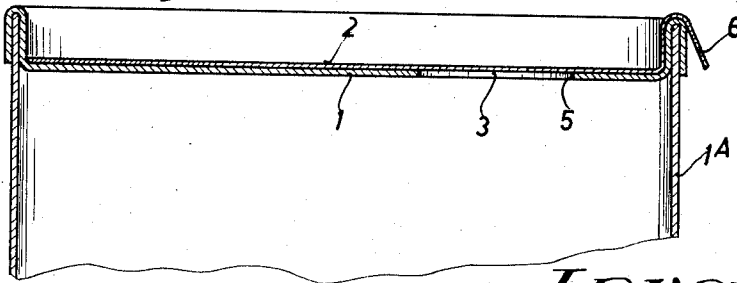


Fig. 10



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RIPPING OR TEAR-OFF CLOSURE FOR CONTAINERS OF PAPER, CARDBOARD OR THE LIKE MATERIAL AND METHOD OF PRODUCING THE SAME

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4 Claims. (Cl. 229—51)

The present invention relates to the art of container manufacture. More particularly, this invention relates to a ripping or tear-off closure for containers of paper, cardboard, or the like carton-forming material and to a method of producing such closure.

The invention is particularly related to containers of paper and cardboard or the like material which are provided with a dispensing opening in one wall and a flap secured to the said one wall for covering the opening.

In known tear-off closures of this type as embodied in prior Patent No. 2,719,663 issued October 4, 1955, to Gunther Meyer-Jagenberg, the flap for covering the dispensing opening is, to attain an air-tight closure, adhesively secured or pasted to the container wall. The flap usually has an unsecured portion that can be grasped manually when the container is to be opened.

In the known constructions the drawback exists that when the flap is pulled the layer of the flap adjacent the container wall, that is at the glue line, becomes detached from the tear-off flap and remains on the wall of the container and thus prevents exposing the opening. Furthermore, since the actual closure for the opening is formed from the container wall by cutting or perforating, the splitting of the ripping flap not only fails to remove the actual closure but likewise obscures the marginal line of the opening. This necessitates a subsequent uncovering of the dispensing opening either by detaching the flap or cover plug by hand or with the aid of a knife or other tool. As previously indicated, this subsequent step of exposing the dispensing opening is rendered more difficult due to the fact that the incision or perforations in the container wall that define the opening are still covered by the layer of the tear-off flap still remaining on the container wall.

Accordingly, the present invention has for an object to provide a tear-off closure for dispensing openings that can be opened free from objection and which will eliminate the aforementioned drawbacks.

More particularly, the invention has for an object to provide a tear-off closure and a method of preparing the same in which the cut delimiting the dispensing opening is so effected that it penetrates into the layer of the tear-off flap that is adhesively secured on the container wall. By this means, a satisfactory detachment of the flap from the plane of the container wall is assured, since, due to the fact that the cut delimiting the opening extends into the material of the tear-off flap, corresponding to the shape of the opening, there will be no portion of the ripping flap remaining to obscure the opening even though the flap will split. In other words, the ripping flap will not split in that area within the limits of the opening cut in the container wall.

It is a further specific object of the invention to pro-

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vide a combined tear-off flap and closure plug for a dispensing opening in a container wall and a method of producing such combined flap and plug which despite the adhesive attachment between the flap and container wall will function to expose the opening when the flap is manually ripped from the container wall.

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

Figure 1 is an enlarged cross-sectional fragmentary view through superposed layers comprising the container wall and the ripping or tear-off closure adhesively secured thereon and illustrating the cut bounding the front edge of the closure,

Figure 2 is a similar view but illustrating the two parts during the step of exposing the opening,

Figure 3 is a fragmentary perspective view illustrating the closure of Figures 1 and 2 as applied to the top of a container,

Figure 4 is a view similar to Figure 1 and illustrating superposed adhesively united tear-off flap and container wall portions with the cut delimiting a round opening in the container wall,

Figure 5 is a view similar to Figure 2 and illustrating the closure of Figure 4 during opening, and

Figure 6 is a view similar to Figure 3 by illustrating the form of tear-off closure shown in Figures 4 and 5.

Figure 7 shows the adhesive coat between tear-off flap and wall.

Figure 8 shows how the tear-off flap is adhesively secured to the wall.

Figure 9 illustrates the cutting tools for the incision of the opening.

Figure 10 shows the inserted top closure section after it has been properly cut, creased and glued.

In the form illustrated in Figures 1-3, there is illustrated a dispensing opening formed by cuts along three sides, the tear-off flap during opening being detached from the container wall and swinging the same in the manner of a hinge about the fourth edge of the opening that has not been incised. The tear-off closure 2 is mounted on the container wall 1 and adhesively secured thereto by glue or by means of thermoplastic coating applied on the top surface of the container wall. A dispensing opening is formed by a cut 5 extending along three sides of the opening. As particularly shown in Figure 1, the cut forming the dispensing opening is incised so deeply into the superposed layers 1 and 2 that it passes completely through the layer providing the container wall 1 and extends partway into the layer providing the tear-off flap 2. Thus the tear-off flap 2 is only incised along lines that define the opening.

As shown in Figure 3, the tear-off flap 2 includes a portion 6 that is not adhesively secured to the container and which can be grasped manually. Thus when this projecting portion 6 is seized and the flap 2 ripped from the container wall 1, the flap splits, the lower layer 2a constituted by the layer of binding material and parts of the tear-off flap 2 in that portion of the tear-off flap outside the limits of the cut 5 remains adhered to the container wall. However, since the cut 5 had extended through the container wall 1 and had been incised into the under surface of the tear-off flap 2 about to the thickness of the layer 2a that remains on the container wall, the opening flap or plug portion 3 is lifted out of the opening when the tear-off flap 2 is lifted.

Thus the present arrangement prevents the splitting

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of a tear-off flap in that area constituted by the opening. When the two layers 1 and 2 are moved together, the portion of the tear-off flap 2 adjacent the gluing line or layer will split when the layers are ripped apart. However, since cut 5 has penetrated all the way through the wall of the container 1 and partway into the tear-off flap, the splitting of layer 2 does not occur interiorly of the cutting line 5. Consequently, the tear-off flap of the present invention ensures proper opening of the dispensing opening 4 since the closure part or plug 3 remains adhesively secured to the tear-off flap.

The form shown in Figures 4-6 illustrates a round opening bonded by a circular cut 5. In this form a circular plug or closure 3 is lifted out of the opening 4 when the tear-off flap 2 is lifted. As shown in Figure 5, the tear-off flap 2 splits adjacent the glue line so that a portion of its under surface remains on the top of the container wall in that area extending beyond the opening 4.

It is a further aspect of the present invention to provide a method of producing the aforesaid tear-off flap. In producing this flap, the first step is to glue or adhesively unite the tear-off flap to the exterior surface of the container wall blank. Then a suitable tool corresponding to the shape of the dispensing opening is applied against the inner side of the container wall 1 and pressed therethrough to such an extent that the cut extends completely through the thickness of the container wall and partly into the thickness of the closure flap.

The invention thus provides in a container of paper, cardboard or the like carton-forming material and including a wall having a dispensing opening therein, a flap lying within the opening, a tear-off flap adhesively secured to the first mentioned flap and to the outer surface of the container wall at least partly beyond the limits of the opening and in which the under surface of the tear-off flap is incised along a line corresponding to the shape of the opening whereby when the flap is torn from the container wall the closure flap remains adhesively united thereto and the opening is exposed.

In the production of the tear-off flap, the flap is adhesively secured to at least a part of the exterior of the wall forming portion of the container blank with a portion of the flap free from the blank so that it can later be a grasping portion; the blank and now united flap are inverted and a tool corresponding in shape to the desired shape of the dispensing opening is impressed into the superposed layers of blank and flap from the inner face of the blank to such an extent as to form a cut extending completely through the thickness of the blank and partly into the thickness of the flap whereby when the container is assembled and the unsecured portion of the flap is grasped and ripped from the container, the splitting of the material of the ripping flap is restricted to that portion beyond the line of the incision in the flap whereby the portion of the container that has been cut through is removed from within the line of cut.

In connection with this invention, it is to be particularly pointed out that the cut made by the tool goes through the layer of adhesive or binding material when the tool penetrates partially into the thickness of the flap. This prevents the splitting of the material of the flap during the ripping action and ensures that the material of the blank, adhesively united to the under surface of the flap, moves out of the dispensing opening when the flap is lifted relative thereto.

For the container walls a wood-free cellulose board of 250 to 300 grs./sq. m. should be preferably used whilst for the tear-off flap the same stock should have 130 grs./sq. m.

The following work sequence applies for the manufacture of the tear-off closure: Fig. 7 shows the position of the ripping flap 2 on top of the container wall 1 forming the top closure for the container sleeve 1a (Fig. 10).

It further emerges from Fig. 7 that the top surface of the container wall is provided with adhesive which, how-

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ever, in the area 6 of the flap does not extend to the edge of the closure section 1. The absence of an adhesive coat between area 6 of the flap and wall 1 facilitates the opening. The adhesive coat can be alternatively applied to the underside of the ripping flap 2.

After the tear-off flap 2 is placed on wall 1 (Fig. 8) and adhesively secured thereto, the opening flap 3 is cut into the wall 1 as described. To this effect, wall 1 with the glued ripping flap 2 is brought between a stationary top post 7 and a reciprocating cutting tool 8. The tool 8 in moving upwards passes completely through wall 1 to form a cut that is uninterrupted from end to end and in addition to forming a closure plug cuts the desired shape of the opening through the wall 1 and extends partway into the thickness of the ripping flap 2 from the under surface thereof.

The last operation is the normal insertion of the properly prepared closure section 1 into the container sleeve 1a (Fig. 10).

What is claimed is:

1. Tear-off closure arrangement for containers of paper, cardboard and similar carton-forming material comprising a container wall of such material, a flap having a substantial portion adhesively secured to the exterior of said wall and including a grasping portion free from said wall, said wall having a cut therethrough lying wholly within the area of the flap that is adhesively secured to the wall, said substantial portion of the flap including marginal portions extending beyond the cut, said cut being continuous from end to end and defining a plug-like closure and the walls of a dispensing opening, and said cut extending into the thickness of the flap from the under surface thereof within the area adhesively united to the wall a distance corresponding to a fraction of the thickness of the flap.

2. In a container of paper, cardboard and similar carton-forming material, a container wall having a dispensing opening therein, a portion of said wall defining a plug-like closure and lying within and closing the opening, a tear-off flap adhesively secured to the plug-like closure and including portions adhesively secured to the portion of the wall lying within the opening and said flap including a portion extending beyond the opening and adhesively secured to the outer surface of the wall and further including a free portion adapted to be grasped when opening the container, and the under surface of the tear-off flap having an incision extending thereinto a distance corresponding to a fraction of the thickness of the flap and corresponding in shape to the shape of the plug-like closure whereby when the free portion is grasped and the flap is ripped from the container wall the plug-like closure lying within the opening remains adhesively united to the tear-off flap, is moved therewith and the opening is exposed.

3. A two-ply closure for paper-board containers comprising an outer ply and an inner ply, said outer ply being strippable from the inner ply, said inner ply having a continuous cut therethrough defining a plug-like closure and the walls of a dispensing opening, said cut extending into the thickness of the outer ply from the under surface thereof a distance corresponding to a fraction of the thickness of the outer ply.

4. In a container of cardboard, paper and similar carton-forming material, a container wall, a flap, a layer of adhesive securing a portion of the flap to at least a portion of the exterior of said wall and said flap including a gripping portion free from attachment to said wall, said wall having a cut therethrough and continuous from end to end and defining in the material of the wall at least the major part of a plug-like closure and the walls of the dispensing opening, said cut extending from the face of the wall directed toward the interior of the container completely through the material of the wall, through the adhesive and into the under surface of the flap within the area of the portion thereof that is ad-

hesively secured to the wall a distance corresponding to a fraction of the thickness of the flap whereby when the gripping portion is grasped and lifted relative to the container wall, the portion of the flap beyond the cut is peeled up to the line of cut so that the plug-like closure 5 still adhesively secured to the area of flap, at least within the line of cut, is moved with the flap relative to the container wall to expose the dispensing opening.

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