Sept. 25, 1956 H. WENGER 2,764,338

PACKAGING BOX WITH MEANS URGING THE LID INTO CLOSED RELATION

Filed Sept. 2, 1955 2 Sheets-Sheet 1

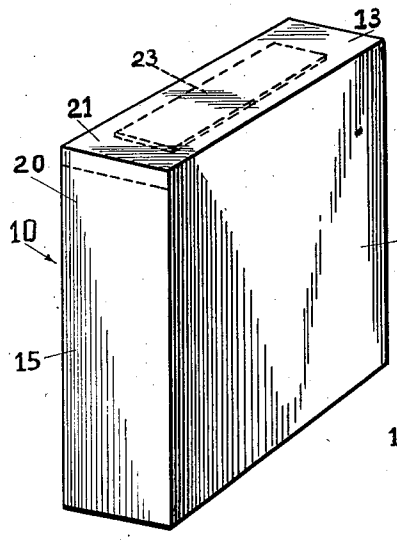


FIG. 1.

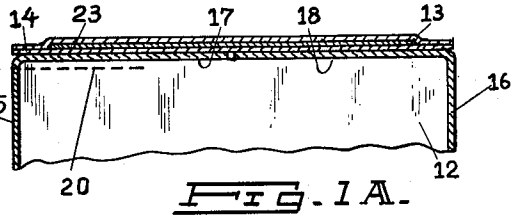


FIG. 1A.

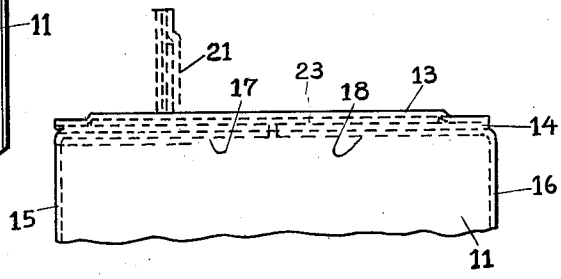


FIG. 1B.

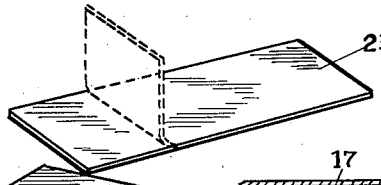


FIG. 1C.

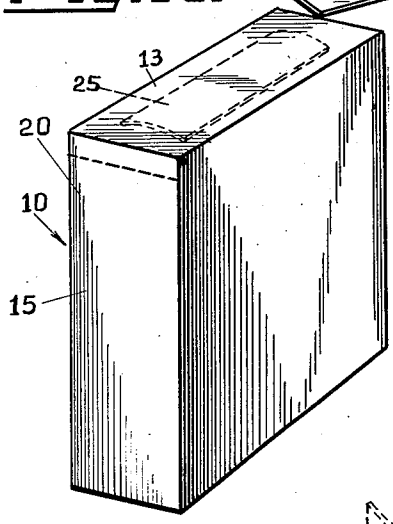


FIG. 2.

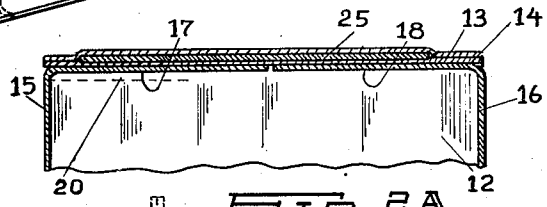


FIG. 2A.

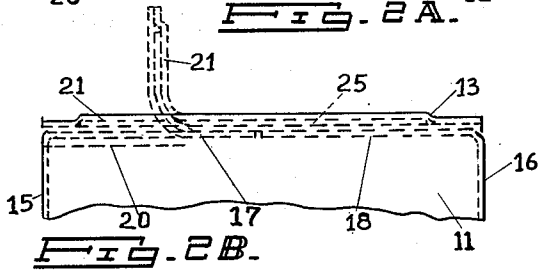


FIG. 2B.

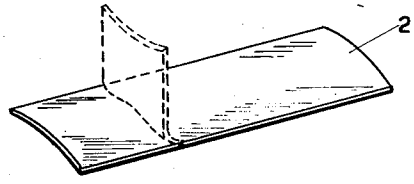


FIG. 2C.

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PACKAGING BOX WITH MEANS URGING THE LID INTO CLOSED RELATION

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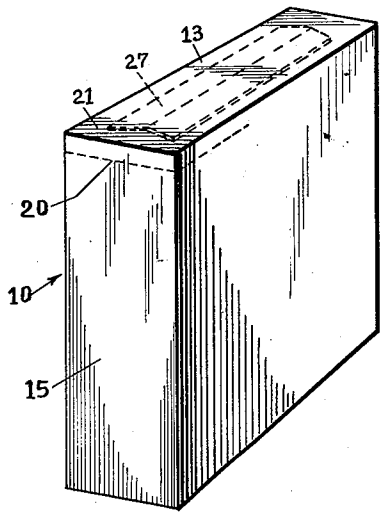


Fig. 3.

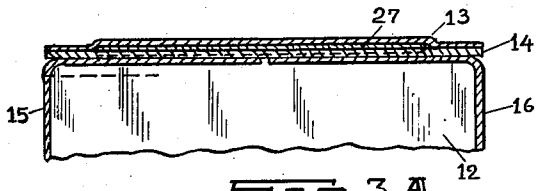


Fig. 3A.

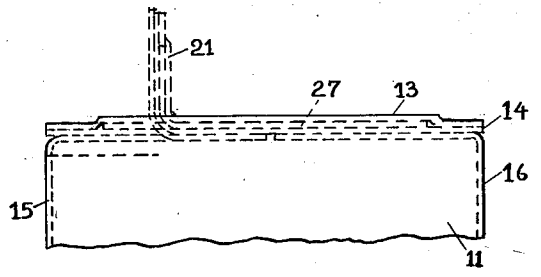


Fig. 3B.

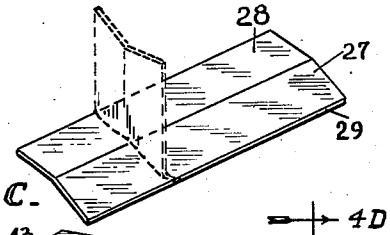


Fig. 3C.

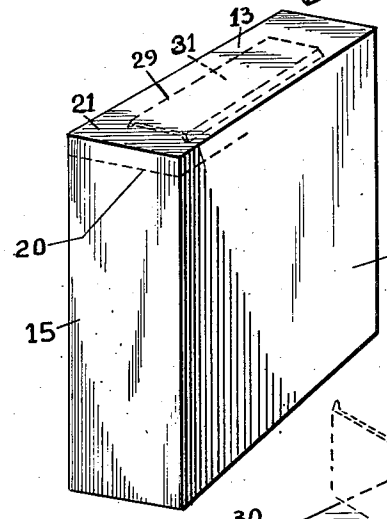


Fig. 4.

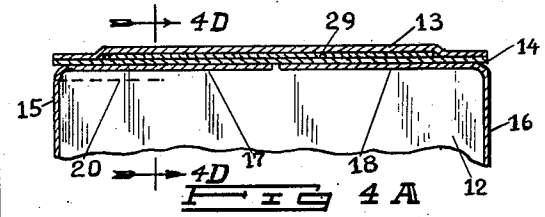


Fig. 4A

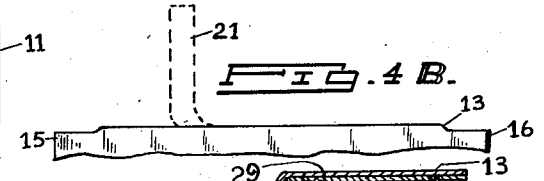


Fig. 4B.

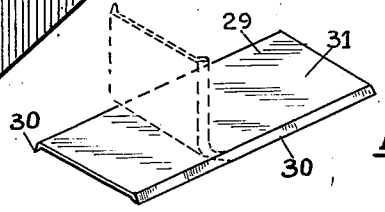


Fig. 4C.

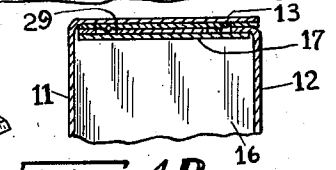


Fig. 4D.

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PACKAGING BOX WITH MEANS URGING THE LID INTO CLOSED RELATION

Harry Wenger, Bayonne, N. J.

Application September 2, 1955, Serial No. 532,193

7 Claims. (Cl. 229—44)

This invention relates to the packaging of products which are to be dispensed therefrom as the same are required. An object of the invention is to provide a packaging box having a hinged lid and resilient means embedded in a wall of the box and extending into the lid for normally urging the lid into closed relation, and the application is a continuation in part of my application Serial No. 431,448, and now abandoned.

It is the usual practice to tear open the tops of paperboard, fiberboard, and cardboard boxes and the like and to dispense the contents thereof through the open end. The tops of the boxes so opened cannot be replaced so as to provide a proper seal with the result that the contents become contaminated with dust and insects, and not infrequently the contents are spilled during the handling of the boxes. In order to overcome this condition the present invention provides a box which may be slit inwardly a short distance at one side thereof adjacent the top wall to provide a dispensing opening with a portion of the top wall forming a lid and with means associated with the top wall for normally retaining the lid in closed relation.

Another object of the invention is to provide a packaging box of said character having a stiffening member embedded in the top wall and extending into the lid which normally retains the lid in closed relation and which necessitates deforming the stiffening member to move the lid into open relation for discharging the contents of the box.

Still another object of the invention is to provide a packaging box in which the stiffening member is certain of its forms is of non-planar formation in cross section and is sufficiently resilient to flex intermediate its length on an axis extending laterally thereof so as to normally retain the lid in closed relation and when the lid is open to retain the same in open relation.

Still another object of the invention is to provide a packaging box having a stiffening member formed with side portions adapted to retain the member either in straight formation throughout its length or in upwardly bent relation intermediate its length for retaining the lid in closed or open relation as desired.

Another object of the invention is to provide a packaging box in which the stiffening member is embedded in the top wall and lid so as to retain the same out of contact with the product contained in the box to prevent the possibility of contamination thereof.

With the foregoing and other objects in view, reference is now made to the following specification and accompanying drawings in which the preferred embodiments of the invention are illustrated.

In the drawings:

Fig. 1 is a perspective view of a packaging box having means for normally retaining the lid in closed relation.

Fig. 1A is a fragmentary vertical sectional view taken longitudinally of the box.

Fig. 1B is a fragmentary side view of the upper portion of the box showing the lid in closed relation in full lines and in open relation in broken lines.

Fig. 1C is a perspective view of the stiffening member.

Fig. 2 is a perspective view similar to Fig. 1 embodying a modified form of stiffening member.

Fig. 2A is a fragmentary vertical sectional view taken longitudinally of the box.

Fig. 2B is a fragmentary side view of the upper portion of the box showing the lid in closed relation in full lines and in open relation in broken lines.

Fig. 2C is a perspective view of the stiffening member.

Fig. 3 is a perspective view similar to Fig. 1 embodying still another form of stiffening member.

Fig. 3A is a fragmentary vertical sectional view taken longitudinally of the box.

Fig. 3B is a fragmentary side view of the upper portion of the box showing the lid in closed relation in full lines and in open relation in broken lines.

Fig. 3C is a perspective view of the stiffening member.

Fig. 4 is a perspective view similar to Fig. 1 embodying still another form of stiffening member.

Fig. 4A is a fragmentary vertical sectional view taken longitudinally of the box.

Fig. 4B is a fragmentary side view of the upper portion of the box showing the lid in closed relation in full lines and in open relation in broken lines.

Fig. 4C is a perspective view of the stiffening member.

Fig. 4D is a fragmentary vertical sectional view taken approximately on line 4D—4D of Fig. 4A.

Referring to the drawings and more particularly to the several forms of the invention shown in Figs. 1 to 4D inclusive thereof, the invention is illustrated in its application to a packaging box **10** of the type adapted to dispense the product contained therein from time to time as required. The box may be of any desired character and may be made of cardboard, fiberboard, pasteboard and the like which is closed at the upper end by overlying flaps. The side walls **11** and **12** are provided with top flaps **13** and **14** which are the full size of the top wall and are folded inwardly into superimposed relation with the flap **13** overlying the flap **14**. The end walls **15** and **16** are formed with top flaps **17** and **18** which are folded inwardly into underlying relation with the flap **14**. The flap **13** is adhesively or otherwise secured to the flap **14**, while the flaps **17** and **18** are adhesively or otherwise secured to the under side of the flap **14** to thereby secure the several flaps together so as to provide a laminated top wall closing the top of the box.

In order to provide means for dispensing the product from the box from time to time as desired, the box may be slit inwardly beneath the top wall along the broken lines **20** to provide a lid **21** which extends from the end wall **15** approximately one third of the distance toward the end wall **16**. The lid **21** may then be bent upwardly to provide an opening through which the contents of the box may be dispensed. Embedded between the flaps **13** and **14** of the form shown in Figs. 1 to 1C inclusive is a flat retaining member **23** of elongated formation extending longitudinally of the top wall of the box. The stiffening member extends into the lid **21** and is sufficiently rigid to normally maintain the lid **21** in tightly closed relation as shown in Fig. 1. It is also sufficiently resilient to permit of the flexing of the lid **21** into right angular relation as shown in broken lines in Fig. 1B with the stiffening member flexed into upstanding relation intermediate its length as shown in Fig. 1C. When the lid is released from the upstanding position, the stiffening member **23** functions to return the lid to the closed position shown in Fig. 1.

The stiffening member may be of arcuate formation in cross-section as shown in Fig. 2C of the drawings. In this form of the invention the stiffening member **25** simi-

larly extends longitudinally of the top wall of the box and is embedded between superimposed flaps 13 and 14. The cross-sectional formation renders the stiffening member resistant to upward bending so as to normally retain the lid in closed relation. When, however, the lid is moved upwardly into the dotted line position shown in Fig. 2B, the portion of the stiffening member embedded in the lid will flex upwardly and will bend laterally into concave formation in the upper or outer face throughout the length of the lid portion thereof to thereby retain the lid 21 in upstanding open relation.

The stiffening member may also be of angulated formation in cross-section as shown in Fig. 3C of the drawings. In this form the stiffening member 27 is longitudinally bent to provide longitudinally extending opposite side portions 28 and 29 which slope downwardly subtending an obtuse angle between the under faces of said side portions whereby the stiffening member is resistant to upward bending and normally retains the lid 21 in closed relation as shown in Fig. 3 of the drawings. The stiffening member similarly extends substantially the full length of the top wall and is embedded between the superimposed flaps 13 and 14 thereof as shown in Figs. 3A and 3B of the drawings. When the lid is moved upwardly into the dotted line position shown in Fig. 3B of the drawings, the portion of the stiffening member embedded in the lid will flex upwardly as shown in Fig. 3C of the drawings so that the outer faces of the side portions 27 and 28 subtend an obtuse angle therebetween to thereby retain the upwardly flexed portion thereof and the lid 21 in upwardly projecting relation.

In Figs. 4 to 4D of the drawings the box 10 is provided with stiffening member 29 which is formed with longitudinally extending flanges 30 at the opposite side edges thereof. The flanges flare downwardly and slightly outwardly as shown in Fig. 4C of the drawings and provide means by which the web portion 31 thereof may be maintained in plane formation throughout its length or may be bent intermediate its length to dispose the forward portion thereof upwardly. The retaining member is similarly arranged between the flaps 13 and 14 of the box and extends forwardly into the lid 21. When bending the lid into upright relation as shown in Fig. 4B of the drawings, the flanges 30 at the bend will swing outwardly to dispose the upper faces of the flanges substantially in the plane of the upper face of the web portion 30 and the lower edges of the flanges at the bends curving upwardly as at 32. The flanges thus function to normally maintain the web portion in co-planar relation throughout its length so as to normally maintain the lid 21 in closed relation as shown in Fig. 4 of the drawings. When, however, the lid is swung upwardly into the dotted line position shown in Fig. 4B of the drawings, the flanges will flex outwardly and slightly upwardly as shown in Fig. 4C of the drawings so as to retain the lid in upwardly projecting relation. In this and in the previously described form each of the stiffening members functions to snap the lid into closed relation when released from the upstanding open position.

It is to be understood that in each of the forms of the invention the stiffening member is embedded between the plies of the top wall out of contact with the product contained in the packaging box so as to avoid contamination thereof.

While the invention is illustrated in its preferred forms, it is to be understood that the same is not so limited but shall cover and include any and all modifications which fall within the purview of the claims.

What is claimed is:

1. In a packaging box having side and end walls, said side walls being adapted to be slit a short distance adjacent one of the end walls to provide a discharge opening and a lid over said opening, said last mentioned end wall being composed of a plurality of superimposed plies, an elongated flexible member having downwardly directed longitudinal side portions arranged between said plies and extending longitudinally of said end wall and into the portion thereof forming the lid, said member being bendable intermediate it length to dispose the portion thereof located within said lid in angular relation to the remaining portion and with said side portions flaring upwardly in the region of the bend for retaining the portion therewith with said lid in said angular relation and the lid in open relation.

2. In a packaging box having side and end walls, said side walls being adapted to be slit a short distance adjacent one of the end walls to provide a discharge opening and a lid over said opening, said last mentioned end wall being composed of a plurality of superimposed plies, an elongated flexible member of arcuate formation in cross-section arranged between said plies and extending longitudinally of said end wall and into the portion thereof forming the lid with the under face thereof being concave, and said member being bendable intermediate its length to dispose the portion thereof located within said lid in angular relation to the remaining portion and to dispose the upper face thereof in concave formation from the region of the bend to the end thereof located in said lid for retaining the portion within the lid in said angular relation and the lid in open relation.

3. A packaging box including side and top walls, said top wall consisting of flaps hingedly carried by said side walls and secured together in superposed relation, a member having longitudinally extending side flanges secured between the flaps of said top wall, said box being adapted to be slit inwardly a short distance under one end of said top wall to provide a top opening for dispensing the contents thereof, and said flanged member extending into the portion of the top wall above said slit and being adapted to be bent upwardly for retaining said portion of the top wall in upwardly extending open relation by the expanding of said flanges outwardly at the point of bending of said member.

4. A packaging box including side and top walls adapted to be slit a short distance under one end of the top wall to provide a top opening for dispensing the contents of the box, a member including a web and having depending side flanges secured to the longitudinal side edges of the web, said member being secured to said top wall with one end thereof secured to the portion of the top wall above said slit and with the flanges depending therefrom, said web being retained in normal plane formation throughout its length by said depending side flanges, and said member together with the portion of the top wall above said slit being adapted to be bent upwardly for retaining said portion of the top wall in upwardly extending open relation by the expanding of said flanges outwardly at the point of bending of said member.

5. A packaging box including a top wall and side walls, said top wall having a free end portion severed from the side walls to permit of the raising of said end portion to provide an opening for dispensing the contents of the box, a member including a web portion of sheet material and flanges connected with the web portion at the longitudinal edges thereof, said flanges normally retaining said web portion in plane sheet formation throughout its length and permitting of the bending of said member intermediate its length to provide an upwardly extending end portion connected with the body thereof by a curved portion and with the flanges at the curved portion flexed laterally outward so as to maintain said end portion in upwardly extending relation, and said member extending longitudinally of said top wall and secured thereto and to the said free end portion of the top wall for normally maintaining said top wall in closed formation and permitting of the upward bending of said free end portion together with said end portion of said member to retain said free end portion of the top wall in open relation.

6. In a packaging box having side and end walls, a mem-

ber having flanges at its opposite longitudinal edges, said member being bendable intermediate its length to dispose one end portion thereof in angular relation to the remaining portion and with said flanges flaring outwardly in the region of the bend substantially in the plane of said member for retaining said end portion in said angular relation, and said member being secured to one of the walls of said box with the flange projecting inwardly thereof for maintaining a free end portion of said wall in open relation when said member is moved to said angular relation.

7. In a device of the character described, a box having side and end walls and means for maintaining a free end portion of one wall thereof in open and closed relation, said means consisting of a member having flanges at its opposite longitudinal edges, said member being bendable intermediate its length to direct an end portion thereof in angular relation with the remaining portion of said member and with the flanges swung outwardly in the region of the bend into substantially co-planar relation with the member to thereby retain said end portion in said angular

relation, said member being secured to said wall of the box and extending longitudinally of said wall for maintaining said free end portion of said wall in upstanding open relation when the end portion of the member is bent into said angular relation, and said end portion of said member being adapted to be swung to normal relation with said member and with the flanges at the region of the bend returned to their normal relation so as to retain said free end portion of said wall of the box in close relation.

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