

May 27, 1958

W. A. RINGLER

2,836,342

CARTON

Filed May 11, 1955

3 Sheets-Sheet 1

FIG-1

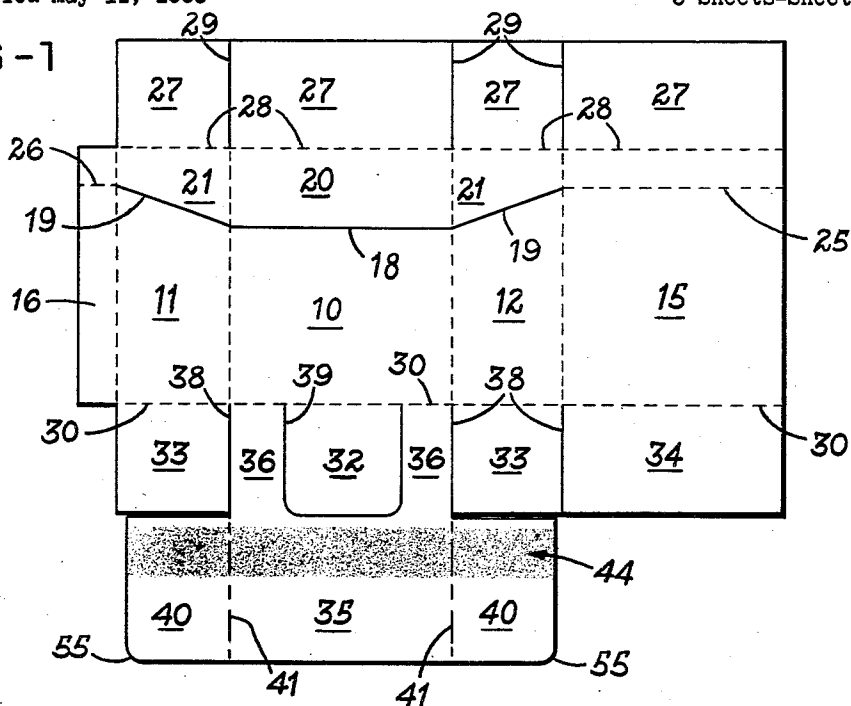
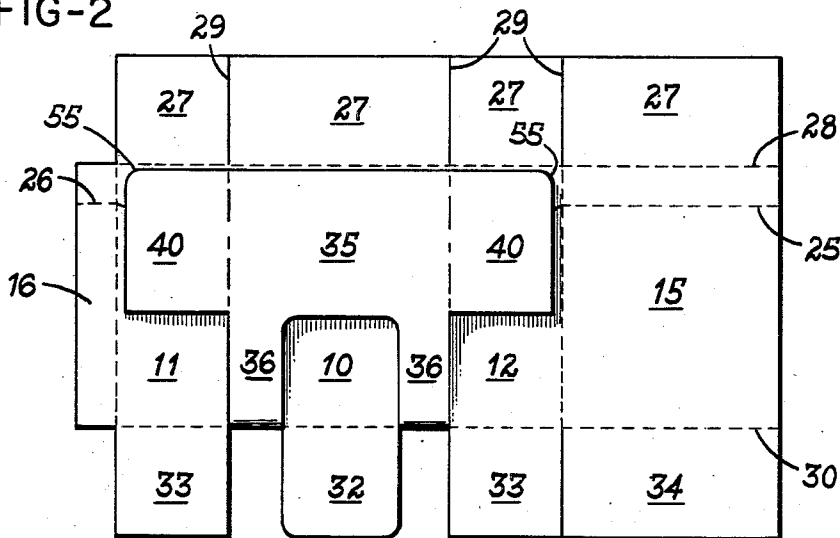


FIG-2



INVENTOR.

WILLIAM A. RINGLER

BY

Marshall, Bichel, French & Beegs
ATTORNEYS

May 27, 1958

W. A. RINGLER

2,836,342

CARTON

Filed May 11, 1955

3 Sheets-Sheet 2

FIG-3

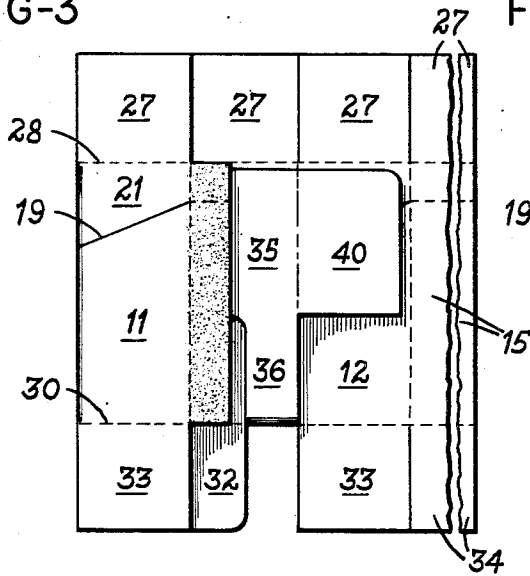


FIG-4

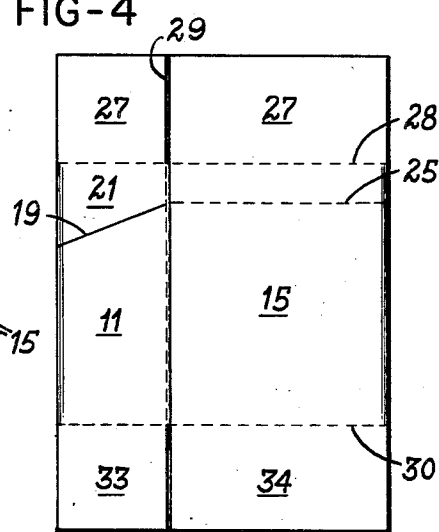


FIG-6

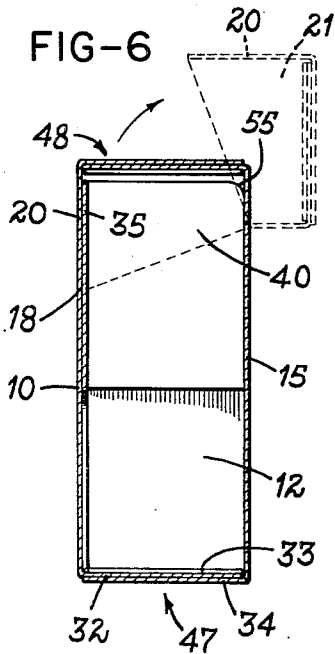
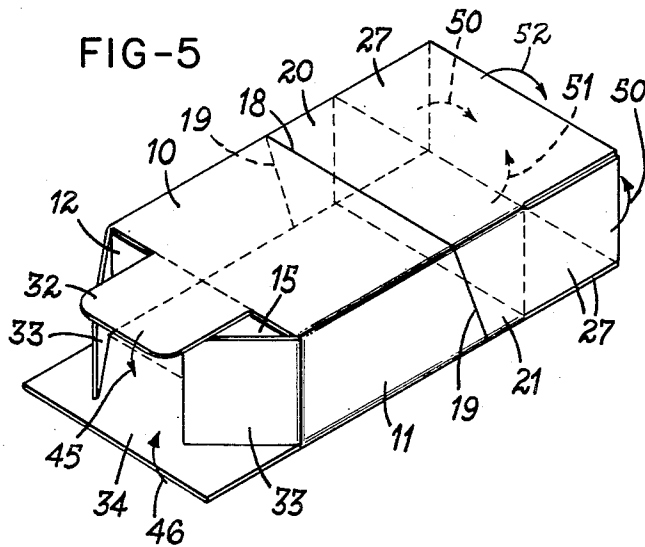


FIG-5



INVENTOR.

WILLIAM A. RINGLER

BY

Marshall, Bichel, French & Bugg
ATTORNEYS

May 27, 1958

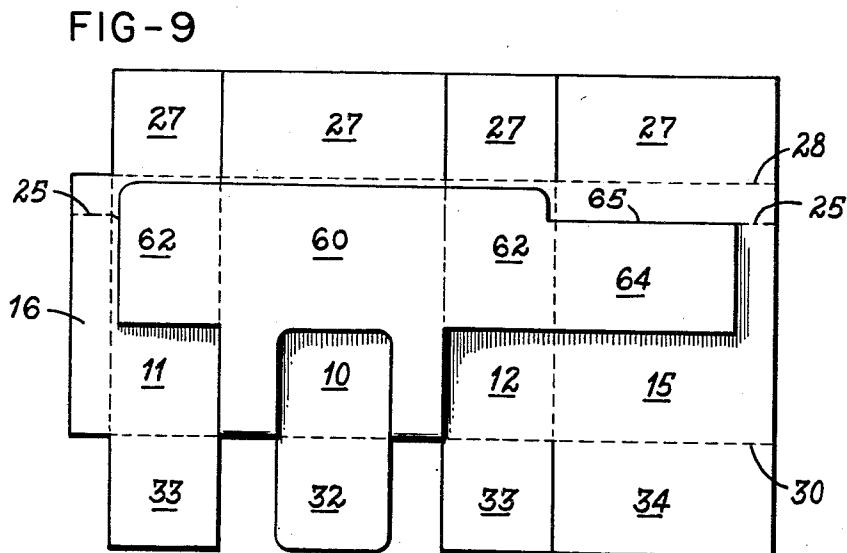
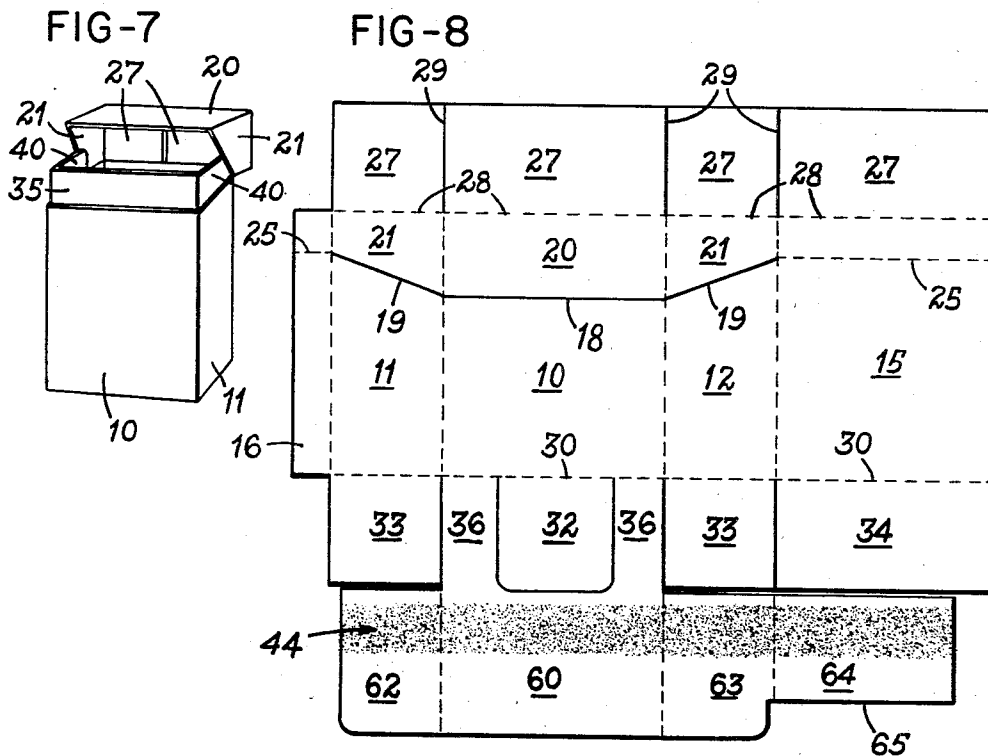
W. A. RINGLER

2,836,342

CARTON

Filed May 11, 1955

3 Sheets-Sheet 3



INVENTOR.

WILLIAM A. RINGLER

BY

Marshall, Biebel, French & Bugg
ATTORNEYS

1

2,836,342

CARTON

William A. Ringler, Wayne, Pa., assignor, by mesne assignments, to Diamond Gardner Corporation, a corporation of Delaware

Application May 11, 1955, Serial No. 507,619

7 Claims. (Cl. 229—37)

This invention relates to a carton having an integral lid at its top, particularly that type of carton or box, used in packaging commodities which are dispensable from the carton over a period of time. For example, cigarettes, cigars, certain candies, and the like, are carried about in their package and dispensed one or a few at a time, as distinguished from items which are entirely removed from their packages at one time.

Such cartons serve, then, not only as a package but also as a dispenser, and must be easily openable, give ready access to the contents, be able to resist crushing and other deformation when carried on the person, and also providing a tight closure when so carried.

It is a primary object of this invention to provide such a carton wherein the entire carton, together with its lid, is formed from a single blank of sheet material, and wherein there is a minimum of waste when cutting the carton blanks from a sheet of material.

Another object of the invention is to provide such a carton, including inner and outer panels forming inner and outer body members, from a single blank which is easily folded into assembled position, and which provides a sturdy carton resistant to deformation.

A further object of this invention is to provide such a carton wherein the inner and outer members have an integral connection adjacent the bottom of the assembled carton, thereby preventing accidental severance or removal of the inner member and facilitating manufacture by keeping both portions at all times in proper orientation.

Additional objects and advantages of the invention will be apparent from the following description, the accompanying drawings, and the appended claims.

In the drawing—

Fig. 1 is a plan view of the blank from which the carton of this invention is formed;

Fig. 2 is another view of the blank of Fig. 1 with the panels of the inner carton member folded over upon the outer carton panels;

Figs. 3 and 4 are views showing the steps of folding the blank of Fig. 2 into flat tubular form;

Fig. 5 shows the tubular blank of Fig. 4 in erected condition preparatory to folding the end flaps thereof;

Fig. 6 is a vertical section through the assembled carton, with the open position of the lid shown in dotted lines;

Fig. 7 is a perspective view of the finished carton with the lid open;

Fig. 8 shows a modified carton blank in accordance with the invention; and

Fig. 9 illustrates the blank of Fig. 8 with the panels of the inner carton member folded upon the outer carton panels.

Referring to the drawings, which illustrate preferred embodiments of the present invention, and particularly to Fig. 1, the blank for the carton provided by this invention includes a series of four outer panels longitudinally arranged with respect to each other and sepa-

2

rated by suitable score lines to provide a front panel 10, side panels 11 and 12 and a rear panel 15. Glue flap 16 extends from the free edge of side panel 11, and is adapted to be fixed to the free edge of rear panel 15 to complete the main body of the carton, as will presently be described.

The front and side panels are slit along a continuous line 18 transversely of fold panel 10 and bias cuts 19 across the side panels 11 and 12 respectively, thereby providing upper portions 20 and 21 on the front and side panels respectively which are separated from the remainder of these panels. A transverse score line 25 extends across rear panel 15 from the end of bias cut 19, and another score line 26 extends across glue flap 16, to be superimposed upon score line 25 in the assembled carton. Suitable top end flaps 27 are integrally hingedly connected to front and side panel portions 20 and 21, and to the top of rear panel 15, along fold lines 28, and are separated from each other by cuts indicated by solid lines 29.

Another fold line 30 extends across the bottom of the blank, at the lower end of panels 10, 11, 12 and 15, providing an integral hinged connection for bottom end flaps 32, 33 and 34. In addition, an inner front panel 35 having extended connecting portions 36, which in blank form completely surround the bottom end flap 32, is hingedly connected to the outer front panel 10 along the intersection of these extended portions 36 and panel 10 at fold line 30. The other end flaps 33 and 34 are separated from each other and from the connecting portions 36 along cuts indicated by the solid lines 38 in Fig. 1, and the bottom end flap 32 is separated from connecting portions 36 and the adjacent part of inner front panel 35 along cut line 39.

The length of inner front panel 35 is such that when it is folded up about line 30 into superposition upon the inner face of outer front panel 10 and its upper portion 20, the free edge of inner front panel 35 falls just short of fold line 28. This relation is best seen in Fig. 2, wherein the inner front panel has been folded into such position. Inner side panels 40 extend from the opposite side of inner front panel 35 and are foldably connected thereto along score lines 41. These inner side panels 40 are superimposed upon outer side panels 11 and 12 when the inner front panel is folded up as in Fig. 2, and adhesive, applied in a transverse strip 44 across the face of inner panels 35 and 40 which engages outer panels 10, 11 and 12, holds there panels in superimposed relation, as seen in Fig. 2.

Furthermore, the inner member extends substantially into the lid in its closed position, and the upper edges of the connection panels 35 and 40 provide corners on the inner member, as seen in Fig. 7, which are engaged by inner surfaces of the front lid portion 20 during opening and closing movements of the lid. Thus, there is a frictional resistance to opening and closing of the lid and consequently the lid is retained in closed position unless a force is exerted to move it to open position.

Referring to Figs. 3 and 4, the side panel 11 is folded onto the inner front panel 35, as seen in Fig. 3, and adhesive is applied to the then upwardly facing side of glue flap 16. In Fig. 4, the rear panel 15 and its connected end flaps 27 and 35 have been folded over from right to left along the fold line connecting panels 12 and 15, and the free edge of rear panel 15 rests upon and adheres to glue flap 16, thus providing a flattened tubular form of the carton, which is erected into open tubular form as shown in Fig. 5, for closing of the end flaps to provide top and bottom walls.

Referring to Fig. 5, the carton is shown in erected tubular form, and the bottom end flaps 33 have begun to swing inwardly across the bottom of the open tubular

3

form. When these flaps 33 extend across the bottom of the carton the end flap 32 is folded downwardly upon them, as indicated by arrow 45, and finally the lower end flap 34 is folded upwardly and adhered to flap 32, in the direction indicated by arrow 36, to complete the bottom wall which is shown generally at 47 in Fig. 6. A top wall 48 is then formed in like manner, with the top end flaps folding inwardly first in the direction indicated by arrows 50, and then in sequence, first by the arrow 51, and then by the arrow 52. These top end flaps are secured together by suitable adhesive to form the finished top wall 48.

The finished carton, shown in section in Fig. 6 and in perspective in Fig. 7, includes an inner member provided by inner front panel 35 and inner side panels 50, and an outer or main body member provided by front panel 10, side panels 11 and 12, and rear panel 15. The upper portions 20 and 21 of the outer member, being separated therefrom along slits 18, 19 provide, in cooperation with the top wall 48, a lid which is hinged about score line 25, and movable between an open position indicated in dotted lines in Fig. 6, and the closed position shown in full lines. If desired, the upper rear corner of inner side panels 40 may be rounded as at 55 to facilitate the opening and closing of the lid.

Referring to Figs. 8 and 9, there is shown a carton blank similar to that of Figs. 1 and 2, and like parts are indicated by like reference numerals. In the modification of Figs. 8 and 9, however, the inner member is provided as a complete four wall unit, and includes an inner front panel 60, inner side panels 62 and 63, and an inner rear panel 64 which is hingedly connected to the edge of panel 63 opposite from the front panel 60. The top edge 65 of inner rear panel 64, as it appears in Fig. 9, is foreshortened or cut away, with respect to the other inner panel members, so that edge 65 rests along hinge line 25 when folded over upon the outer rear panel 15. The sequence of assembling the blank shown in Fig. 9 is exactly the same as the procedure above described in connection with Figs. 3, 4 and 5.

The present invention thus provides a carton having an integral lid thereon which is formed from a single compact blank, and which, due to its double-walled construction, is highly resistant to crushing or other deformation. This carton is inexpensive to manufacture, simple to assemble, and affords more than adequate protection for the commodities to be packaged therein.

While the form of apparatus herein described, constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. A carton formed from a single blank of sheet material and including a lid as an integral part thereof, comprising a blank scored to provide outer front, rear, and side panels, a glue flap for retaining said outer panels in generally tubular form, top end flaps extending from one free edge of said outer panels for forming a top wall on said carton, said outer front and side panels having a continuous transverse slit therethrough adjacent said top edge panels, said blank also including inner front and side panels connected side by side to provide an inner member, bottom end flaps extending from the other free edge of said outer side and rear panels, a partial bottom end flap extending from the central bottom edge portion of said outer front panel, connecting portions integral with the remainder of the bottom edge of said outer front panel and also integral with said inner front panel providing a hinged connection between said outer panels and said inner member, the total length of said inner front panel and said connecting portions being such that the upper edge of said inner front panel extends across

4

said slit when folded into superposition upon said outer front panel, and a hinged connection between said outer rear panel and the severed upper portions of said outer front and side panels to provide a hinged lid for said carton.

2. A blank for forming a carton having a lid as an integral part thereof comprising a single sheet of material scored to provide outer front, rear, and side panels, a glue flap for retaining said outer panels in generally tubular form, top end flaps extending from one free edge of said outer panels for forming a top wall on said carton, said outer front and side panels having a continuous transverse slit therethrough adjacent said top edge panels, said blank also including inner front and side panels connected side by side to provide an inner member, bottom end flaps extending from the other free edge of said outer front and rear panels for forming a bottom wall, connecting portions integral with said inner member and integrally foldably connected to said outer member along said other free edge thereof, said connecting portions extending around opposite sides of that bottom end flap extending from said outer front panel, said connecting portions providing a hinged connection between said outer panels and said inner member, the total length of said inner panels and said connecting portions being such that the upper edge of said inner front panel extends across said slit when folded into superposition upon said outer front panel, and a hinged connection between said outer rear panel and the severed upper portions of said outer front and side panels to provide a hinged lid for the carton.

3. A blank for forming a carton with an integral reclosable lid comprising a sheet of material scored to provide an outer member including outer front, rear, and side panels and a glue flap at one side edge of said outer member arranged side by side for folding into generally tubular form, end flaps extending independently of each other from the top and bottom edges of said outer member including front end flaps connected to said outer front panel for forming top and bottom walls on the carton, said outer front and side panels having a substantially continuous transverse slit extending therethrough adjacent and spaced from said top edge of said outer member defining therewith front and side walls for the lid, said outer rear panel having a transverse score line aligned with the end of said slit in the adjacent outer side panel and spaced from the top edge of said rear panel to define a lid rear wall and to provide an integral hinged connection between the lid and the main body of the carton, an inner member including inner side and front panels connected side by side, said inner side and front panels being arranged along one edge of said outer member in alignment with the corresponding outer front and side panels, parts of said inner member extending around one of said front end flaps and being separated therefrom by a slit terminating at the adjacent edge of said outer member, means defining a folding connection between said inner member and said adjacent edge of said outer member providing for superimposing said inner front and side panels upon the corresponding outer front and side panels, the length of said inner panels being such that portions thereof will extend across said transverse slit and into said lid when the carton is assembled.

4. A blank for forming a carton with an integral reclosable lid comprising a sheet of material scored to provide an outer member including outer rear, side, front and side panels arrayed in that order, a glue flap extending from the last mentioned said side panel and adapted for adhering to an interior surface of said rear panel to retain the carton in generally tubular form, said outer front and side panels having a substantially continuous transverse slit extending therethrough adjacent and spaced from said top edge of said outer member de-

fining therewith front and side walls for the lid, said outer rear panel having a transverse score line spaced from the top edge of said rear panel to define a lid rear wall and to provide an integral hinged connection between the lid and the main body of the carton, an inner member including inner side and front panels connected side by side, said inner side and front panels being arrayed along the bottom edge of said outer member in alignment with the corresponding outer front and side panels, means defining a folding connection between said inner member and said bottom edge of said outer member providing for superimposing said inner front and side panels upon the corresponding outer front and side panels, the length of said inner panels being such that portions thereof will extend across said transverse slit and into said lid when the carton is assembled, end flaps extending independently of each other from the top and bottom edges of said outer member for forming top and bottom walls on the carton, and said blank having a generally U-shaped slit therein with the opposite ends of said slit terminating at said bottom edge of said outer front panel defining a front bottom end flap and separating said bottom front flap from adjacent parts of said inner member.

5. A blank for forming a carton with an integral reclosable lid comprising a sheet of material scored to provide an outer member including outer rear, side, front and side panels arrayed in that order, a glue flap extending from the last mentioned said side panel and adapted for adhering to an interior surface of said rear panel to retain the carton in generally tubular form, said outer front and side panels having a substantially continuous transverse slit extending therethrough adjacent and spaced from the top edge of said outer member defining therewith front and side walls for the lid, said outer rear panel having a transverse score line spaced from the top edge of said rear panel to define a lid rear wall and to provide an integral hinged connection between the lid and the main body of the carton, an inner member including inner side and front panels connected side by side, said inner side and front panels being arrayed along one edge of said outer member in alignment with the corresponding outer front and side panels, means defining a folding connection between said inner member and the adjacent edge of said outer member providing for folding of said inner member transversely to the array of outer panels for superimposing said inner front and side panels upon the corresponding outer front and side panels, the length of said inner panels being such that portions thereof will extend across said transverse slit and into said lid when the carton is assembled, end flaps extending independently of each other from the top and bottom edges of said outer member for forming top and bottom walls on the carton, and a continuous generally U-shaped slit terminating at its opposite ends at one edge of said outer member and defining one of the end flaps extending from said outer front panel and separating that end flap from said inner member and the folding connections between said inner member and said outer member.

6. A blank for forming a carton with an integral reclosable lid comprising a sheet of material scored to provide an outer member including outer rear, side, front, and side panels arrayed in that order, an end flap joined to said outer front panel, a glue flap extending from the last mentioned said side panel and adapted for adherence to an interior surface of said rear panel to retain the carton in generally tubular form, said outer front and side panels having a substantially continuous transverse slit extending therethrough adjacent and spaced from the top edge of said outer member defining there-

with front and side walls for the lid, said outer rear panel having a transverse score line spaced from the top edge of said rear panel to define a lid rear wall and to provide an integral hinged connection between the lid and the main body of the carton, a three panel inner member including inner side and front panels connected side by side, said inner front panel being located beyond said end flap and separated therefrom by a slit, means providing a fixed connection between said inner and outer members for positioning said inner member in superimposed relation on said outer member with inner and outer front and side panels arranged in corresponding fashion, said inner front and side panels being dimensioned to extend across said slits in said outer front and side panels and substantially over said lid wall providing parts thereof when folded in face to face superimposed relation therewith, and said rear panel and said glue flap being arranged to extend beyond the sides of said inner member when said inner member is folded into superimposed relation on said outer member for providing single thickness edges on the superimposed blank.

7. A blank for forming a carton with an integral reclosable lid comprising a sheet of material scored to provide an outer member including outer rear, side, front, and side panels arrayed in that order, a glue flap extending from the last mentioned said side panel and adapted for adherence to an interior surface of said rear panel to retain the carton in generally tubular form, said outer front and side panels having a substantially continuous transverse slit extending therethrough adjacent and spaced from the top edge of said outer member defining therewith front and side walls for the lid, said outer rear panel having a transverse score line spaced from the top edge of said rear panel to define a lid rear wall and to provide an integral hinged connection between the lid and the main body of the carton, a three panel inner member including inner side and front panels connected side by side, means defining a folding connection between said inner member and the bottom edge of said outer member, the combined length of said inner panels and said folding connection means being substantially equal to the length of said outer panels, said folding connection positioning said inner member in superimposed relation on said outer member with said inner and outer front and side panels arranged in corresponding fashion, said rear panel and said glue flap extending beyond the sides of said inner member providing single thickness edges on the superimposed blank, end flaps extending independently of each other from the top and bottom edges of said outer member for forming top and bottom walls on the carton, and said blank having a generally U-shaped slit therein with the opposite ends of said slit terminating at said bottom edge of said outer front panel defining a front bottom end flap and separating said bottom front flap from adjacent parts of said inner member.

References Cited in the file of this patent

UNITED STATES PATENTS

887,729	Kirmse	May 12, 1908
2,344,999	Newsom	Mar. 28, 1944
2,396,150	Bonville	Mar. 5, 1946
2,457,107	Verner	Dec. 21, 1948
2,473,055	Guyer	June 14, 1949
2,577,588	Paige	Dec. 4, 1951
2,672,273	Smith	Mar. 16, 1954
2,693,298	Palmer	Nov. 2, 1954