Nov. 21, 1967 E. B. OUTWATER 3,353,740

RECLOSABLE CARTON

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FIG. 1.

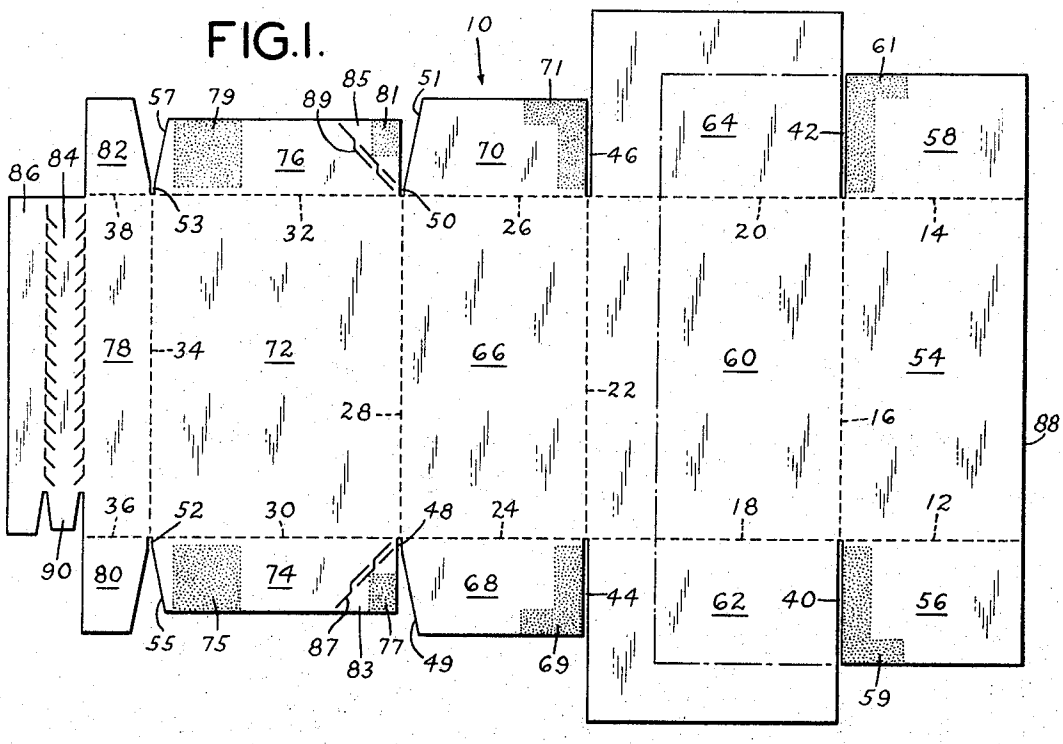

FIG. 2.

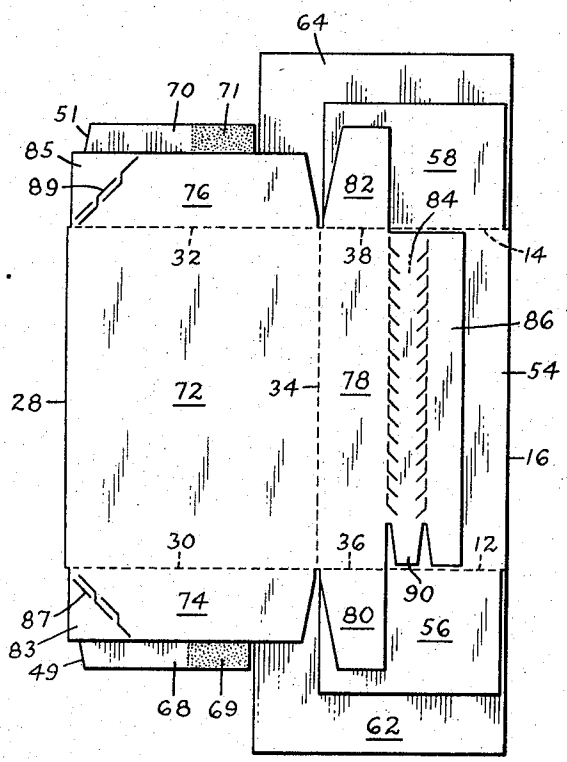

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FIG.3.

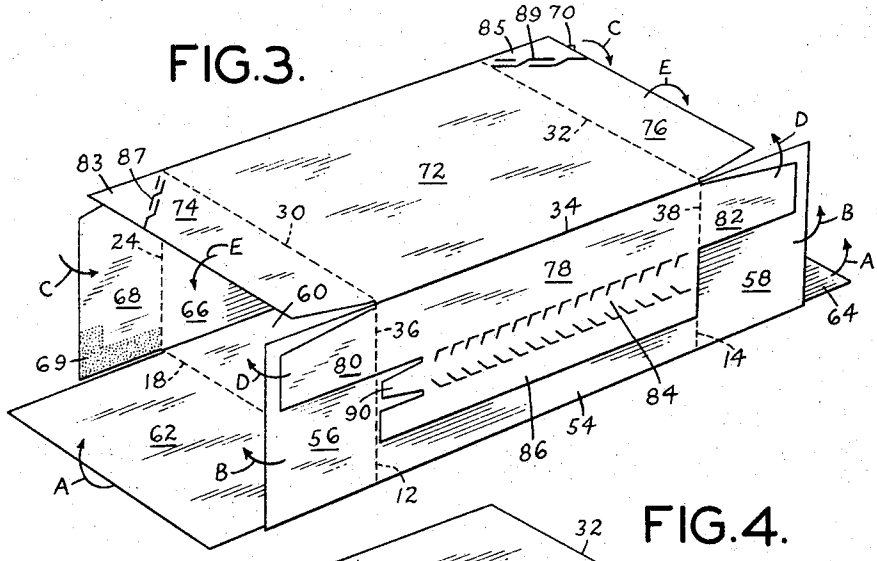


FIG.4.

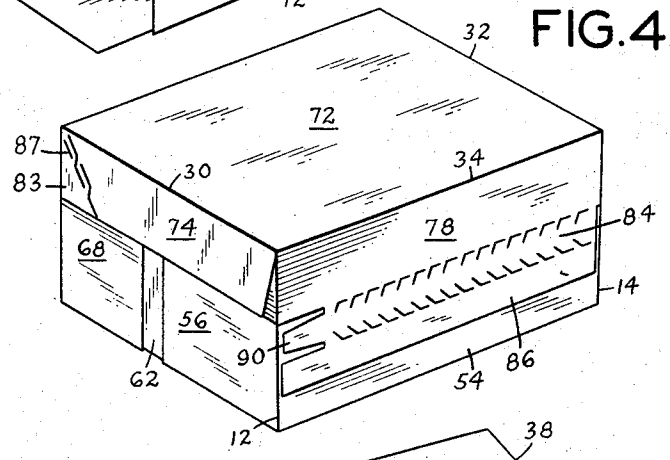
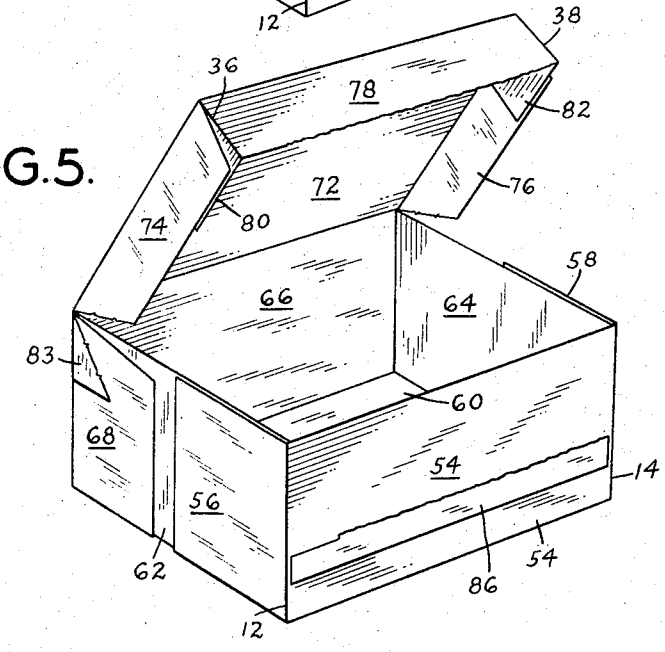


FIG.5.



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3,353,740

RECLOSABLE CARTON

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2 Claims. (Cl. 229—51)

ABSTRACT OF THE DISCLOSURE

A rectangular reclosable paperboard carton formed from a single blank having front and rear panels hingedly connected to opposite side edges of a bottom panel, front and rear panel flaps hingedly connected to the end edges of said front and rear panels respectively and inner end panel flaps hingedly connected to the end edges of said bottom panel. In the erected carton the front and rear panel flaps extend toward each other but end in a spaced-apart nonabutting relation adjacent the outer surface of said inner end panel flaps, to which they are adhesively connected.

This invention relates to improved collapsible paperboard cartons for various products. More particularly it relates to tamperproof, reclosable cartons made from a single blank formed of paperboard or like semi-rigid sheet material for packaging ice cream or any other relatively heavy food product.

One object of the invention is to provide a strong packaging carton using a minimum amount of paperboard or sheet stock material.

Another object of the invention is to provide a carton having the above characteristics which can be shipped from the manufacturer to the user in a collapsed condition and yet be easily squared or set up and filled at the user's plant using presently available machinery.

A third object of the invention is to provide a carton having the above characteristics which is also tamperproof and yet once opened is repeatedly easily and quickly reclosable to protect the contents remaining therein.

Other objects and advantages of the invention will appear from the description given below in connection with the accompanying drawings illustrating the preferred embodiment.

In the drawings:

FIG. 1 is a plan view of the inside of a paperboard blank from which a carton incorporating the features of the invention is formed;

FIG. 2 is a plan view of the blank of FIG. 1 partly folded, partly glued and in a collapsed condition ready for shipment to a packer or distributor;

FIG. 3 is a perspective view of the carton of FIG. 2 after it has been squared or raised from its collapsed condition, with arrows showing the direction and order in which the various flaps are folded to form the finished carton;

FIG. 4 is a perspective view of the carton in a finished, closed and sealed condition;

FIG. 5 is a perspective view of an open finished carton after the tear strip has been removed.

Referring now to FIG. 1 of the drawings, the carton is formed from a blank **10** which is preferably made of paperboard stock, though it may also be made of any other similar semi-rigid sheet material. Blank **10** is cut and scored along fold lines **12–38** and cut lines **40–53** to provide a series of panels and flaps which comprise the carton. The panels include a front panel **54**, at opposite end edges of which there are two front panel end flaps **56** and **58** hinged connected with front panel **54** along fold lines **12** and **14** respectively. At its inner edge intermediate its ends, front panel **54** is hingedly connected to a bottom panel **60** along fold line **16**. At opposite end edges of bottom panel **60** there are two inner end wall flaps **62**, **64** hingedly connected to panel **60** at fold lines **18** and **20**. Similarly, at its edge opposite fold line **16**, bottom panel **60** is hingedly connected to a rear panel **66** along fold line **22**, and rear panel **66** has rear panel flaps **68**, **70**, hingedly connected at opposite end edges along fold lines **24**, **26**. Also, at its edge opposite fold line **22**, rear panel **66** is connected to a top or cover panel **72**, along fold line **28**, and cover panel **72** has cover panel flaps **74**, **76** which are hingedly connected to cover panel **72** at its opposite end edges along fold lines **30**, **32**.

At the front edge of cover panel **72** opposite fold line **28**, a closure panel **78** is hingedly attached along fold line **34**. Closure panel **78** has closure panel flaps **80**, **82** hingedly connected at its opposite end edges along fold lines **36**, **38**. Included as part of closure panel **78** is an intermediate portion comprising a tear strip **84** defining two vertically spaced fracturing scores extending throughout its length below the closure panel flaps, and a bottom portion **86**.

Front panel end flaps **56**, **58** are separated from inner end wall flaps **62**, **64** by cut lines **40** and **42**, and inner end wall flaps **62**, **64** are similarly separated from rear panel flaps **68**, **70** by cut lines **44** and **46**. In addition, rear panel flaps **68**, **70** are separated from cover panel flaps **75**, **76** by cut lines **48**, **50**, while cover panel flaps **74**, **76** may be separated from closure panel flaps **80**, **82** by cut lines **52**, **53**. Flaps **56**, **58** and **62**, **64** are preferably rectangular in shape, while flaps **68**, **70** and **74**, **76** and **80**, **82** are preferably tapered along one edge. Flaps **68**, **70** narrow towards their outer free edges due to the existence of taper cuts **49**, **51** beginning respectively at cut lines **48**, **50** a short distance from fold lines **24**, **26**. Similarly, flaps **74**, **76** narrow towards their outer free edges and have taper cuts **55** and **57** which begin respectively at cut lines **52**, **53** a short distance from fold lines **30**, **32**. Flaps **80**, **82** are preferably longer than flaps **74**, **76** and have similar tapered cuts immediately opposite those on flaps **74**, **76** as seen in FIG. 1. The purpose of these last two sets of cuts is to give the carton a pleasing appearance and to prevent its corners from inadvertently catching on adjacent edges when the carton has been erected and filled.

Referring again to FIG. 1, flaps **56** and **58** have L-shaped vertical areas **59**, **61** adjacent cut lines **40**, **42** on which adhesive is placed to maintain the ends of the squared carton closed and in a sealed condition after it has been filled. Likewise, and for the same purpose, flaps **68**, **70** have L-shaped vertical areas **69**, **71** containing adhesive material adjacent cut lines **44**, **46**. To maintain the cover end flaps **74**, **76** in their appropriate positions in the filled and sealed carton, each flap **74**, **76** preferably has two separated areas **75**, **77** with respect to flap **74**, and **79**, **81** with respect to flap **76** on which adhesive material has been placed. Areas **77**, **81** are preferably located on the corners **83**, **85** of flaps **74**, **76** opposite taper cuts **49**, **51**, and these corners **83**, **85** are preferably loosely connected to the main portion of the flaps being, partially severed therefrom by cuts **87**, **89**. The adhesive on all of these areas is preferably of the heat sealing type and is adapted to seal two adjacent paperboard surfaces together when heat and a degree of pressure is applied.

Referring now to FIG. 2, the collapsed condition of the carton may be achieved from the blank of FIG. 1 by lifting front bottom panel **54** upwardly with its associated flaps and to the left onto bottom panel **60** and its associated flaps **62**, **64** about fold line **16**. When this is done the free edge **88** of front panel **54** (edge **88** is opposite fold line **16**) will line on bottom panel **60** etc. as shown in phantom in FIG. 1. Front closure panel **78** together with

cover panel **72** and their associated flaps are then lifted and folded to the right along fold line **28**. The bottom portion **86** of closure panel **78** then lies adjacent the middle of front panel **54** as seen in FIG. 2 and is adhesively secured thereto. In this condition of the carton, both tear strip **84** and the upper portion of front closure panel **78** lie adjacent to, but remain free of adhesive securement to front panel **54**. The carton is now ready for shipment to the distributor or user.

Referring to FIG. 3 in which the carton is squared preparatory to filling, end flaps **56**, **62**, **68** and **74** are positioned consecutively at right angles to each other as are end flaps **58**, **64**, **70** and **76**. Closure panel **78** lies in the same plane with its associated flaps and is adjacent the outer face of front panel **54** and its flaps **80**, **82** lie parallel with and adjacent to flaps **56**, **58**.

The carton is then filled and its ends are closed and sealed. For the purpose of description and because the closing and sealing steps are the same for each end of the carton, the closing will be described in connection with only one end of the carton. Inner end wall flap **62** is first folded upwardly and inwardly about fold line **18** to a position at right angles to bottom panel **60** as shown by the arrow A in FIG. 3. Next, front panel end flap **56** and rear panel end flap **68** are folded towards each other about fold lines **12**, **24** respectively, as shown by arrows B, C in FIG. 3.

When adhesively secured to inner end wall flap **62**, each of flaps **56**, **68** comprises an outer end wall flap, the free edges of which are spaced away from each other in order to save paperboard as seen in FIG. 4. Next, closure panel end flap **80** is folded inwardly on top of flap **56** about fold line **36** as shown by arrow D in FIG. 3. If desired, and it may be preferable in some cases, flaps **56** and **80** may both be folded inwardly simultaneously and together about their respective fold lines. Cover panel flap **74** is then folded downwardly about fold line **30**, as shown by arrow E in FIG. 3, so as to be in face to face relation with flaps **56**, **68** and **80**. The carton is now fully closed and heat is applied to the carton ends to activate the adhesive so as to permanently seal flaps **56**, **68** to flap **62**; flaps **58**, **70** to flap **64**; cover panel end flap corners **83**, **85** to flaps **68**, **70**, and cover panel end flaps **74**, **76** to closure panel end flaps **80**, **82**. In this condition the carton is tamperproof because as seen in FIG. 4, any attempts to open it will either tear the glued portions of the carton or sever the tear strip **84**, both of which would be visible to the naked eye.

When the carton has been filled, sealed, and delivered to the purchaser of the ice cream, it may be opened by grasping the left hand end **90** of the tear strip (FIGS. 1–4) and pulling it to the right, thereby severing the tear strip from the closure panel and separating bottom portion **86** from closure panel **78**. Tear strip **84** may then be thrown away and the carton opened by lifting the upper portion of closure panel **78** upwardly to a position such as shown in FIG. 5. As this occurs, cover panel end flap corners **83**, **85** will be torn from cover panel end flaps **74**, **76**, giving another indication that the carton has been tampered with. With the cover up, the contents of the carton may be easily removed. In addition, the carton may be reclosed by simply pushing cover panel **72** downwardly so that once again flaps **74**, **76** and **80**, **82**, together with

the upper portion of front closure panel **78**, will lie in face to face relation with the outer surfaces of the flaps and panels which form the front and end walls of the carton. It should be clear that the carton may be opened and closed many times using this construction without weakening the structure.

To improve the ability of the carton to carry foods such as ice cream, both surfaces of the carton may be covered with a layer of wax in a conventional manner.

Though one embodiment of the carton has been described and illustrated in the drawings, it will be understood that what has been disclosed is merely illustrative of the essential features of the invention included within the scope of the appended claims. Other embodiments are also possible.

What is claimed is:

1. A tamperproof, reclosable, collapsible carton container for ice cream and other products, said carton being formed of a single blank suitably cut and scored to provide hingedly connected front, rear and bottom panels, a pair of inner end panel flaps connected to opposite end edges of said bottom panel, a pair of front panel flaps hingedly connected to opposite end edges of said front panel, a pair of rear panel flaps hingedly connected to opposite end edges of said rear panel, a cover panel hingedly connected to the upper edge of said rear panel, a pair of cover panel flaps hingedly connected to opposite end edges of said cover panel, a closure panel hingedly connected to the front edge of said cover panel, and a pair of closure panel flaps hingedly connected to opposite end edges of said closure panel, said front and rear panel flaps at each end of the carton being adhered to said inner end panel flaps and extending towards each other but ending in a spaced apart non-abutting relation, said closure panel flaps being adhesively secured in face to face relation with said cover panel flaps to connect said closure panel and cover panel flaps at their adjacent edges, said closure panel having vertically spaced fracturing scores positioned below said closure panel flaps and extending throughout the length of said closure panel, said closure panel also having a lower portion beneath the lower of said fracturing scores which portion is adhesively secured to said front panel.

2. The carton according to claim **1** wherein said front and rear panel flaps are adhesively secured at their inner faces to the outer faces of said inner end panel flaps, and said closure panel flaps are adhesively secured at their outer faces to the inner faces of said cover panel flaps.

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