United States Patent [19]

Buttery

[11] **3,735,916**

[45] **May 29, 1973**

[54] **ICE CREAM CARTON HAVING READILY REMOVABLE DIVIDER AND SUPPORT MEANS**

[75] Inventor: **Kenneth T. Buttery**, Kalamazoo, Mich.

[73] Assignee: **Brown Company**, Kalamazoo, Mich.

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[21] Appl. No.: **139,357**

[52] **U.S. Cl.** .....**229/27 R,** 229/51 TC, 229/51 TS

[51] **Int. Cl.** **B65d 5/48**

[58] **Field of Search**.....229/15, 27, 51 TC, 229/51 TS, 51 R

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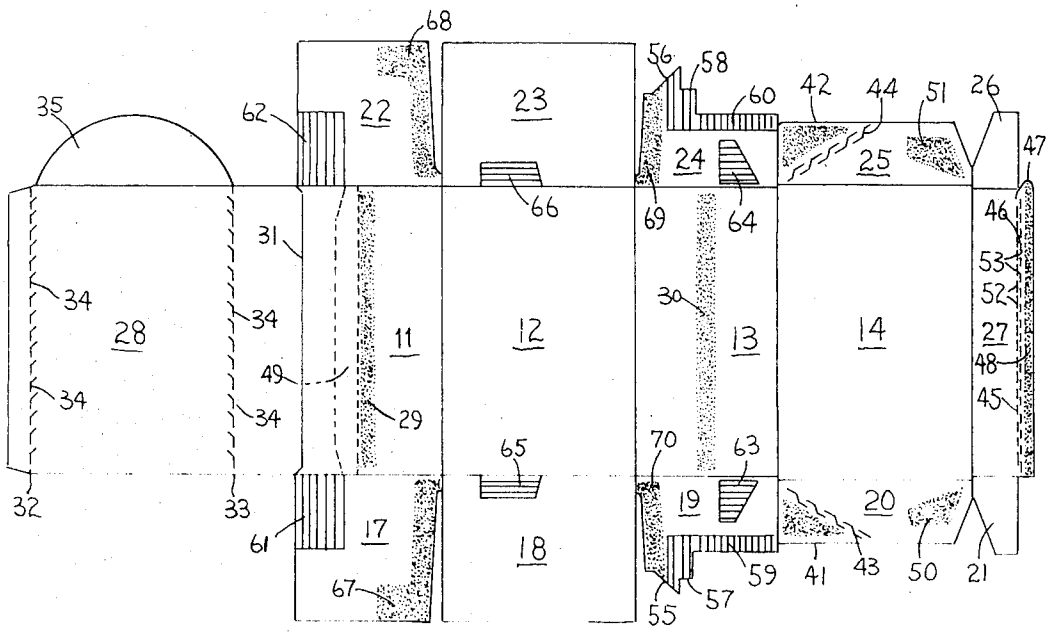
Primary Examiner—Davis T. Moorhead

Attorney—Gordon W. Hueschen and Talivaldis Cepuritis

[57] **ABSTRACT**

A paperboard carton including top, bottom, front, rear and end wall panels which together define an enclosure having at least two of the panels situated opposite each other and a divider panel detachably secured to the opposing panels, separating the enclosure into a plurality of compartments.

4 Claims, 8 Drawing Figures



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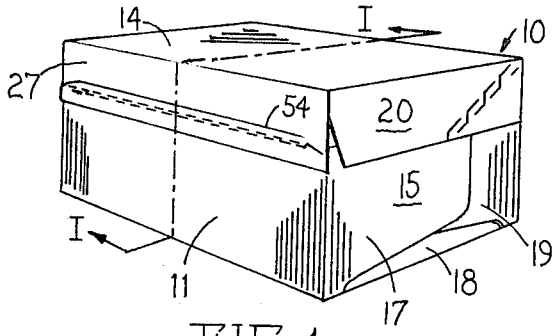

FIG. 1

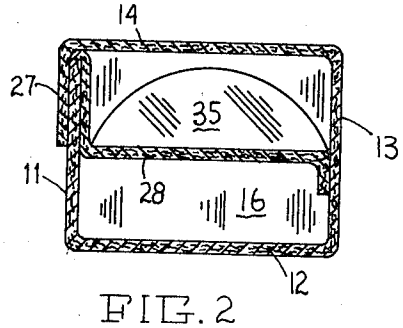

FIG. 2

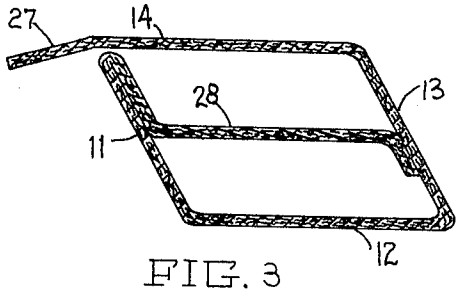

FIG. 3

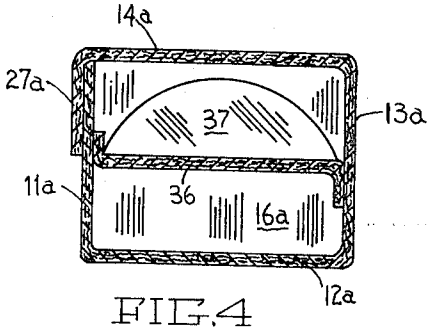

FIG. 4

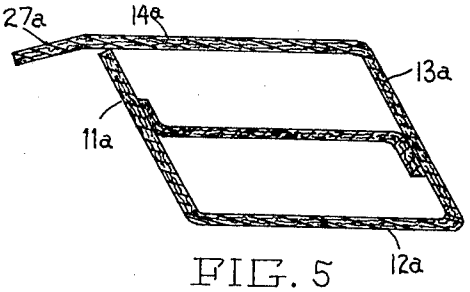

FIG. 5

INVENTOR.
KENNETH T. BUTTERY
BY Gordon H. Kinsman
Talivaldis Cirulis
ATTORNEYS

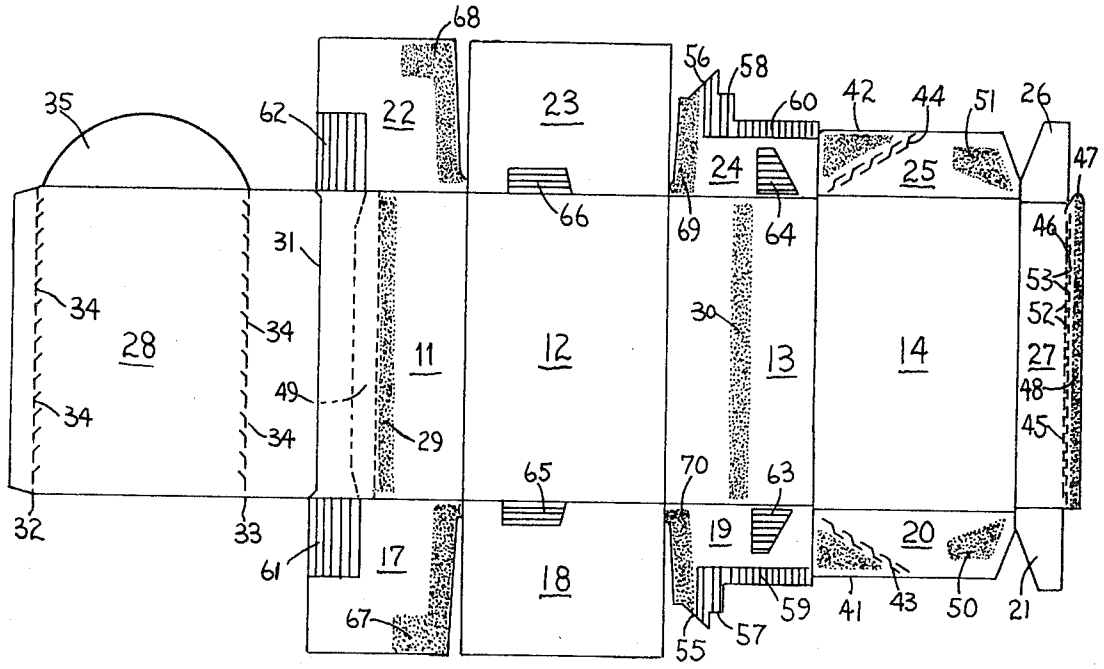

FIG. 6

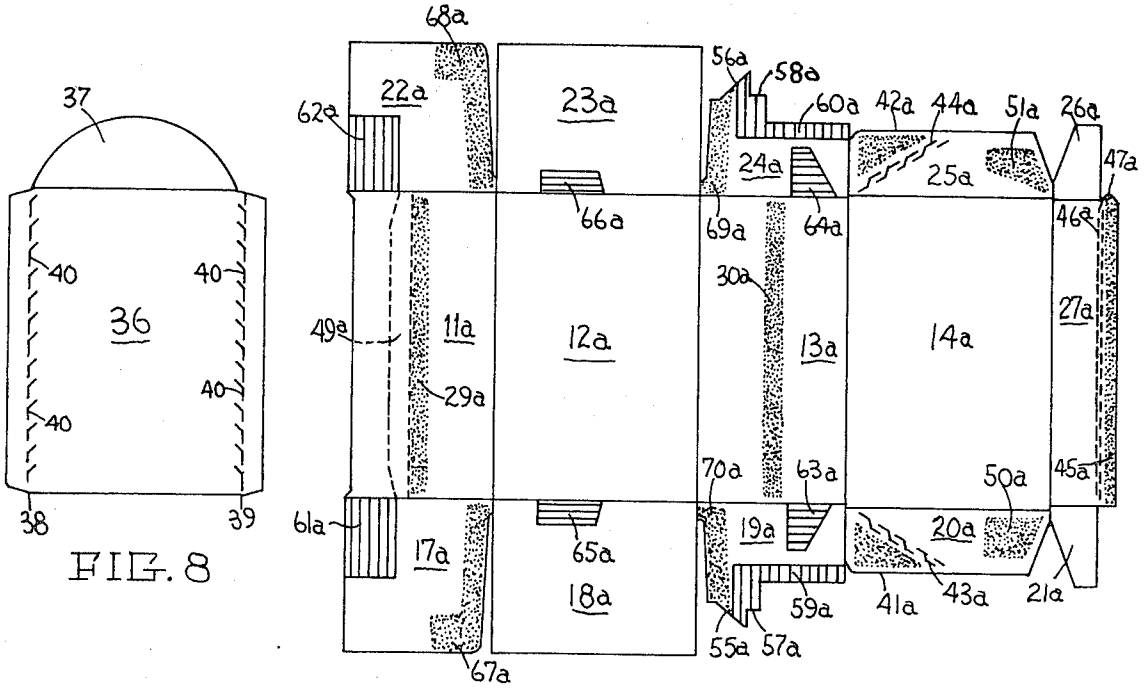

FIG. 8

FIG. 7

INVENTOR.
KENNETH T. BUTTERY

BY

ATTORNEYS

ICE CREAM CARTON HAVING READILY REMOVABLE DIVIDER AND SUPPORT MEANS

BACKGROUND OF THE INVENTION

This invention relates to cartons and, more particularly, to improved cartons for packaging foodstuffs such as ice cream.

Paperboard cartons are a widely accepted means for packaging various materials including foodstuffs. Such cartons usually are erected and filled with the normal access opening or cover means in a sealed condition. Typical such cartons are shown in U.S. Pat. Nos. 3,361,328 and 3,410,476.

In the case of foodstuffs, often the contents of a particular carton is not used up immediately upon opening but is permitted to stand with the attendant results that the foodstuff contained therein oxidizes and/or discolors. The carton design of the present invention obviates the foregoing drawbacks and provides a compartmentalized container whereby foodstuffs contained in a particular compartment remain fresh until desired for use, notwithstanding the fact that the carton itself has been opened and another compartment emptied prior to that time.

Another advantage is that the present design permits the use of a lower caliper paperboard for purposes of constructing the carton inasmuch as a divider or bridge within the carton lends substantial structural rigidity thereto.

A still further advantage is that the present design provides a back-stop for the innermost end flaps of a carton which not only dimensionally stabilizes the carton but also results in a better sealing of the carton ends.

Thus it is an object of the present invention to provide a carton for the packaging of foodstuffs which is subdivided into several compartments so that the contents of one compartment can be consumed while another compartment remains substantially sealed. Another object of the present invention is to provide a carton design which permits the use of a relatively lower caliper paperboard without sacrificing the structural rigidity of the carton. Still other objects will readily present themselves to one skilled in the art upon reference to the ensuing specification, drawings, and the claims.

SUMMARY OF THE INVENTION

The present invention contemplates a divider panel which is detachably secured between opposing panels of a paperboard carton. In a top-opening paperboard carton the divider panel usually is horizontally disposed parallel to the bottom thereof so that the upper portion of the carton contents can be consumed while the lower portion or portions of the carton contents remain substantially sealed by the divider panel or panels.

In general, the present invention includes a paperboard carton and a blank therefor including top, bottom, front wall, rear wall, and end wall panels which together define an enclosure having at least two of the aforementioned panels opposite each other and a divider panel which is detachably secured between the opposing panels and which separates the defined enclosure into a plurality of compartments. In preferred embodiments of this invention lines of weakening are provided in the divider panel along each zone or region of affixation to the carton panels so that the divider can

be readily removed by tearing or cutting along these lines when desired. Also, an upwardly extending tab can be provided connected to the divider panel whereby detachment and removal of the divider panel is facilitated.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings,

FIG. 1 is a perspective view of a top opening carton embodying the present invention;

FIG. 2 is a sectional elevation view taken along line I—I of FIG. 1;

FIG. 3 is a sectional elevation view similar to FIG. 2 but taken with the carton in a semi-collapsed state and prior to gluing;

FIG. 4 is a sectional elevation similar to that of FIG. 2 but showing an embodiment of this invention where a divider panel is separate from the carton blank;

FIG. 5 is a sectional elevation view similar to FIG. 4 but taken with the carton in a semi-collapsed state and prior to gluing;

FIG. 6 is a plan view of a carton blank cut and scored so as to provide a carton of this invention having an integral divider panel;

FIG. 7 is a plan view of a carton blank adapted to receive a separate divider panel; and

FIG. 8 is a plan view of a separate divider panel which can be used to form a carton embodying the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following description reference will be made to the accompanying drawings for a better understanding of this invention. In the drawings all parts are numbered, the same numbers are used to identify the same parts in the several Figures, and the designation *a* is used to indicate same parts in different embodiments of the invention. Additionally, areas having an adhesive applied thereon are indicated by stippled shading and areas that are embossed or debossed are indicated by a series of horizontal and vertical lines, respectively. The terms "embossed" and "debossed" are used with reference to the outer surface of the carton as constructed.

Referring to FIGS. 1, 2, and 3, carton 10 comprises front wall panel 11, bottom panel 12, rear wall panel 13 and top panel 14, together with a plurality of end wall members such as 17, 18 and 19 which make up end wall panels 15 and 16. Horizontal divider panel 28 is hingedly connected to front wall panel 11 and secured to panel 11 and rear wall panel 13 by means of adhesive regions or zones 29 and 30 (FIG. 6) situated on front wall panel 11 and rear wall panel 13, respectively. Adhesive zone 29 on front panel 11, while preferred, is optional, however, inasmuch as divider panel 28 is already affixed to front wall panel 11 along score line 31 (FIG. 6) and can be made to assume the position shown in FIG. 2 by providing an appropriate longitudinal score line.

Divider panel 28 can also be provided with longitudinally extending lines of weakening 32 and 33 (FIG. 6) which comprise a series of relatively closely spaced cuts 34. These lines of weakening serve to facilitate the detachment of divider panel 28 and also provide a line along which divider panel 28 can be readily creased as a glued-together carton is erected. Tab 35 facilitates

gripping of divider panel **28** while a tear is initiated along lines of weakening **33** and **34** during detachment. Alternatively, divider panel **28** can be affixed by intermittent glue spots in the affixation zones and detached by pulling on the tab and without recourse to lines of weakening.

Another embodiment of the present invention is shown in FIGS. **4** and **5** wherein a separate divider panel **36** provides a horizontal bridge between front wall panel **11**a and rear wall panel **13**a. Divider panel **36** is also provided with gripping tab **37** and lines of weakening **38** and **39** comprising series of closely spaced cuts **40** (FIG. **8**), similar to those of divider **28.**

Referring to FIG. **6**, the integral blank for the embodiment shown in FIGS. **1** through **3** comprises bottom panel **12**, and front wall panel **11** and rear wall panel **13**, both hingedly connected to bottom panel **12.** A cover or top panel **14** is hingedly connected to rear wall panel **13.** Bottom panel **12** is provided at its end with bottom end wall members **18** and **23** hingedly connected thereto. Similarly, front panel **11** is provided at its ends with front end wall members **17** and **22** hingedly connected thereto and rear panel **13** is provided with rear end wall members **19** and **24** hingedly connected thereto.

Top panel or cover **14** is provided with cover and wall panels **20** and **25** having adhesive panels **41** and **42** connected thereto at fracture lines **43** and **44,** respectively.

Fracture lines **43** and **44** can be straight as shown in FIG. **6** or curved if desired, and comprise a plurality of spaced slits extending substantially through the thickness of the paperboard. Preferably each slit has at least one portion which is not co-linear with the rest of the slit and the fracture line. Top panel **14** is also provided along its forward edge with cover front wall panel **27** to which is connected tear strip **45** at severance line **46.** Tear strip **45** is provided with tab **47** at one end thereof which extends beyond underlying front panel **11** when the carton is assembled and with adhesive portion **48** adapted to be affixed to cut scored portion **49** in front panel **11.**

Although the embodiment illustrated and described herein utilizes a tear strip or peel strip connected to cover front wall panel **27** by a severance line and adhesively affixed to front wall panel **11,** other types of detachable means adhesively affixing the cover front wall panel to the front wall panel can be employed. For example, a tear strip defined by a pair of parallel severance lines in cover front wall panel **27** can be used as well.

Cover front wall panel **27** is provided at its ends with end flaps **21** and **26** which are adapted for affixation to cover end wall panels **20** and **25,** respectively, by means of adhesive areas **50** and **51,** respectively. The length of end flaps **21** and **26** is preferably greater than the width of end wall panels **20** and **25,** and the width of end flaps **21** and **26** is preferably less than the width of end wall panels **20** and **25,** but this is not essential.

Severance line **46** comprises at least two rows of linearly positioned, substantially uniformly spaced cuts such as **52** and **53** which are so arranged that the cuts of one row overlap the uncut spaces or lands between the cuts of the other adjacent row. However, other types of severance lines can be used, if desired. A continuous cut score line **54** (FIG. **1**) is provided in cover front wall panel **27** apart from severance line **46** and extends for substantially the entire length of severance line **46.** Cut score line **54** is cut only partially through the thickness of cover front wall panel **27,** i.e., through the top liner of the paperboard. The score line between front end wall member **17** and front panel **11** preferably is a cut score line in the region adjacent to cut scored portion **49.**

As shown in FIG. **6,** scores at the junctures between all panels and end wall members are aligned, except the scores at the juncture between top panel **14** and cover end wall panels **20** and **25** which are offset outwardly. Also, the scores between front cover wall panel **27** and end flaps **21** and **26** are offset inwardly relative to the scores between top panel **14** and cover end wall panels **20** and **25.**

Lower portions of the terminal edges of the rear end wall members **19** and **24** are provided with oblique recesses **55** and **56.** Recesses **57** and **58** are provided to facilitate nesting of an adjacent blank closely therewith during cutting and printing.

Debossments **59** and **60** are provided in end wall members **19** and **24,** respectively, to permit lodging of portions of members **17** and **22,** respectively, therein where these members overlap as the carton is formed. Similarly, members **17** and **22** are provided with respective debossments **61** and **62** adapted to receive end flaps **21** and **26,** respectively.

Embossments **63** and **64** in end wall members **19** and **24** are adapted to be adhesively affixed to adhesive panels **41** and **42** of cover end wall panels **20** and **25,** respectively, and embossments **65** and **66** of bottom end wall members **18** and **19** are adapted to be adhesively affixed to respective front end wall members **17** and **22** by means of adhesive areas **67** and **68,** respectively, which adhesive areas also affix members **17** and **22** to debossments **59** and **60,** respectively.

Adhesive area **69** secures bottom end wall member **23** to rear panel end wall member **24** and adhesive area **70** secures bottom end wall member **18** to rear panel end wall member **19.**

Adhesive area **29** on front wall panel **11** provides an adhesive affixation zone for divider **28** as it is folded over onto the remainder of the carton blank shown in FIG. **6.** Adhesive affixation zone on rear wall panel **13** is provided by adhesive area **30.**

In assembling the carton, divider panel **28** is first folded in and then the carton blank folded so that the inside surface of front panel **11** faces the inside surface of top panel **14** with panel **28** therebetween. At this point cut scored portion **49** on the outer surface of the paperboard, which is of about the same configuration as tear strip **45,** and adhesive portion **48** of tear strip **45** are brought together and tear strip **45** adhesively affixed to cut scored portion **49** and divider panel **28** adhesively affixed to adhesive areas **29** and **30,** thereby forming a folded tube from the carton blank which can be waxed at this stage of construction, if desired.

To erect this type of carton further for filling, the folded, tube-like blank is squared up, as on a conventional squaring machine. Thereafter one end of the carton is closed by first folding bottom end wall member **23.** Tab **35** is thus folded upwardly, rear end wall member **24** and front end wall member **22** are then folded in, the latter overlapping the former. The contour provided by recess **56** permits the terminal edge of member **24** to clear adhesive area **68** on member **22.** In addition, debossment **60** of member **24** permits member

22, when lapped thereover, to seat conveniently in the debossed area.

End flap 26 of cover front wall panel 27 is then folded over and seated in debossment 62 whereupon cover end wall panel 25 is folded down so as to engage embossment 64 on rear end wall member 24 and is adhesively affixed to embossment 64 and end flap 26 in any convenient manner such as by heating when a heat-sensitive adhesive is utilized for the adhesive areas and/or portions of the carton. At the same time adhesive areas 68 and 69 are also activated and member 23 adhesively affixed to members 22 and 24. If desired, hot melt adhesive may be applied on the aforesaid areas at the machine erecting the cartons so as to accomplish the same result as with the pre-applied heat-activated adhesives. When operating in such a manner, additional heat-activating machinery is not required.

The erected carton can now be filled through the remaining open end in the usual manner and the open end subsequently closed in a sequence substantially as hereinbefore described. Alternatively, the first-mentioned carton end may be closed and/or tacked, as with glue, but not sealed, and then both carton ends sealed simultaneously after filling.

The sealed carton may be opened by grasping tab 47 and removing tear strip 45 defined by severance line 46. As cover or top panel 14 is lifted open, cover end wall panels 20 and 25 are parted from adhesive panels 41 and 42, respectively, along the respective fracture lines 43 and 44. The outer liner of cut-scored area 49 adheres to tear strip 45 and, upon opening by removal of the tear strip, this outer liner peels off neatly between the cut scores. The top panel or cover 14, with attached panels 20, 25 and 27, can thereafter be reclosed for storage of any unconsumed contents.

The carton blank shown in FIG. 7 is similar to that shown in FIG. 6 and is assembled in the same manner with parts followed by the designation *a* functioning in the same manner. The only exception is divider panel 36 (FIG. 8) which is separately die cut and then adhered to front wall panel 11a and rear wall panel 13*a* by means of adhesive areas 29*a* and 30*a*, respectively, in the conventional manner using glue or hot melt. When the carton is provided with separately cut divider panel 36, upon erection of the carton for filling tab 37 is folded upwardly by the action of rear end wall member 24*a* in the same manner as tab 35 of divider panel 28 was folded upwardly when one end of the carton was closed by folding bottom end wall member 23. Of course, divider panel 36 can be detachably secured instead to end wall panels, if desired, or detachably secured to front wall panel and rear wall panel normal to the carton bottom if a top-filling carton is desired, the contents of which is removed via an end thereof.

The foregoing embodiments of the present invention are intended as illustrative but are not to be construed as limiting. Still other variations within the spirit and scope of this invention will readily present themselves to one skilled in the art.

I claim:

1. A paperboard carton including top, bottom, front wall, rear wall and end wall panels together defining an enclosure having at least two of said panels opposite each other and cut and scored to provide a front wall panel hingedly connected to one edge of said bottom panel, rear wall panel hingedly connected to the other edge of said bottom panel, end wall members connected to said panels, a divider panel detachably attached between the front wall panel and the rear wall panel, said divider panel separating said enclosure into a plurality of compartments and being provided with lines of weakening along each zone of affixation, and a cover hingedly connected to the upper edge of said rear wall panel and provided with cover flaps which comprise cover end wall panels and a cover front wall panel, and

a detachable means adhesively affixing said cover front wall panel to said front wall panel which is a tear strip connected to the cover front wall panel by a severance line comprising at least two rows of linearly positioned, substantially uniformly spaced cuts extending through the thickness of the paperboard, said rows of cuts being so arranged that the cuts of one row overlap the uncut spaces of the adjacent row;

said cover front wall panel being provided with a cut score line spaced apart from said severance line, extending substantially the entire length thereof, and being cut only partially through the thickness of said cover front wall panel; and

said front wall panel being provided with a cut scored portion of substantially the same configuration as the tear strip, in substantial registry with the tear strip and cut only partially through the thickness of the front wall panel.

2. An integral paperboard blank for forming a carton cut and scored to provide a bottom panel, a front wall panel hingedly connected to one longitudinal edge of said bottom panel, a rear wall panel hingedly connected to the other longitudinal edge of said bottom panel, end wall members connected to said panels, a detachable divider panel hingedly connected to the front wall panel along an edge substantially parallel to but spaced from said bottom panel, and a cover which includes a top panel hingedly connected to the upper edge of said rear wall panel and cover flaps comprising cover end wall panels and a cover front wall panel hingedly attached to the top panel; and

a detachable means adapted for adhesively affixing said cover front wall panel to said front wall panel which is a tear strip connected to the cover front wall panel and defined by a severance line comprising at least two rows of linearly positioned, substantially uniformly spaced cuts extending through the thickness of the paperboard, said rows of cuts being so arranged that the cuts of one row overlap the uncut spaces of the adjacent row;

said cover front wall panel being provided with a cut score line spaced apart from said severance line, extending substantially the entire length thereof, and being cut only partially through the thickness of said cover front wall panel;

said front wall panel being provided with a cut scored portion of substantially the same configuration as the tear strip, adapted to be in substantial registry with the tear strip, and being cut only partially through the thickness of the front wall panel; and

said divider panel being adapted to be adhesively affixed to at least said rear wall panel.

3. A paperboard carton including top, bottom, front wall, rear wall and end wall panels together defining an enclosure having at least two of said panels opposite each other and cut and scored to provide a front wall panel hingedly connected to one edge of said bottom

panel, rear wall panel hingedly connected to the other edge of said bottom panel, end wall members connected to said panels, a divider panel detachably attached between the front wall panel and the rear wall panel, said divider panel separating said enclosure into a plurality of compartments and being provided with lines of weakening along each zone of attachment, and a cover hingedly connected to the upper edge of said rear wall panel and provided with cover flaps which comprise cover end wall panels and a cover front wall panel, and

a detachable means, which is a tear strip connected to the cover front wall panel and defined by a severance line, adhesively affixing said cover front wall panel to said front wall panel.

4. An integral paperboard blank for forming a carton cut and scored to provide a bottom panel, a front wall panel hingedly connected to one edge of said bottom panel, a rear wall panel hingedly connected to the other edge of said bottom panel, end wall members connected to said panels, a detachable divider panel, adapted to separate an enclosure defined by said carton into a plurality of compartments, hingedly connected to the front wall panel along an edge substantially parallel to but spaced from said bottom panel, and a cover hingedly connected to the upper edge of said rear wall panel and provided with cover flaps which comprise cover end wall panels and a cover front wall panel, and

a detachable means, adapted for adhesively affixing said cover front wall panel to said front wall panel, which is a tear strip connected to the cover front wall panel and defined by a severance line;

said divider panel being adapted for adhesive affixation to at least said rear wall panel and being provided with a line of weakening along each zone of affixation.

* * * * *