United States Patent [19]

Booth, Jr.

[11] **3,825,174**

[45] **July 23, 1974**

[54] **COMPARTMENTALIZED CARTON**

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[73] Assignee: **Continental Can Company, Inc.**, New York, N.Y.

[22] Filed: **June 22, 1972**

[21] Appl. No.: **265,376**

[52] **U.S. Cl.** ..... **229/28 R**, 229/15

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

[58] **Field of Search** ..... 229/15, 28 R, 28 BC, 29 D, 229/39 R, , 42; 220/115

[56] **References Cited**

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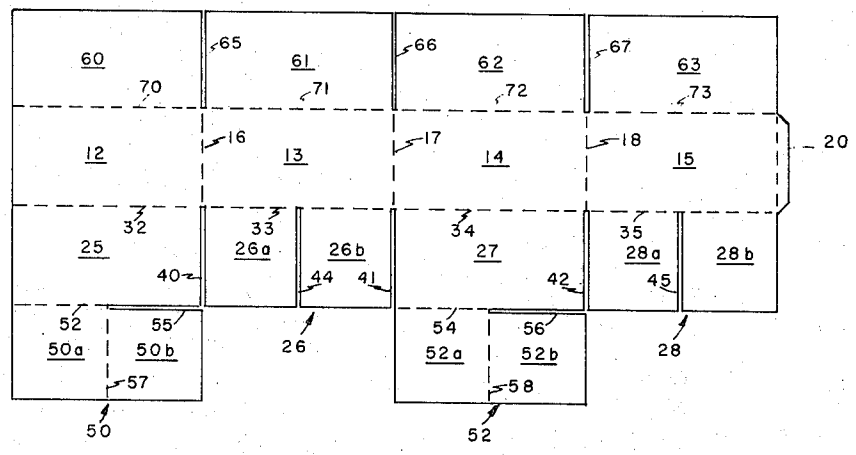
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2,785,844	3/1957	Metzger	229/28 R
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Assistant Examiner—Stephen Marcus
Attorney, Agent, or Firm—Diller, Brown, Ramik & Wight

[57] **ABSTRACT**

A carton formed of paper or corrugated board having four side walls folded to form a rectangular section with four bottom flaps attached thereto. Two opposing bottom flaps are provided with integral partition panels for dividing the carton into four compartments thereby increasing the carton's stacking strength.

2 Claims, 4 Drawing Figures



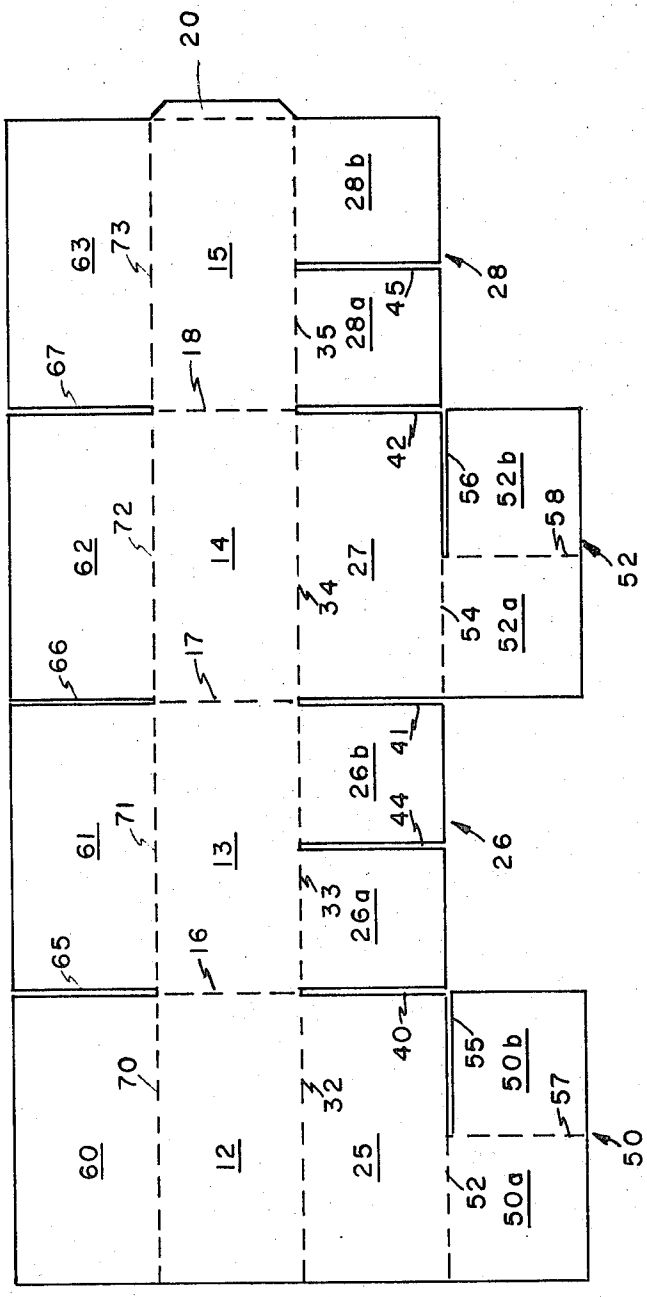

20
28b
63
73
15
28
45
35
28a
67
18
42
56
52b
58
62
72
14
27
52
34
54
52a
66
17
41
26b
61
71
13
44
26
33
26a
65
16
40
55
50b
70
57
32
60
12
25
50
52
50a

Fig - 1 -

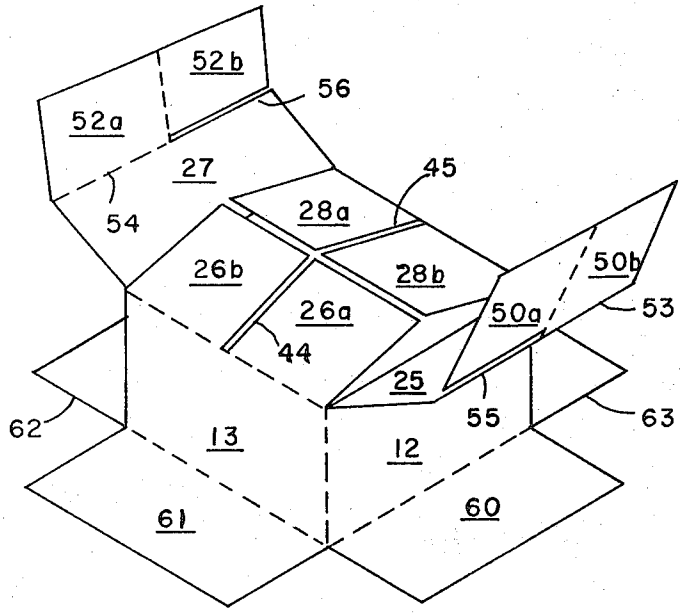


Fig-2-

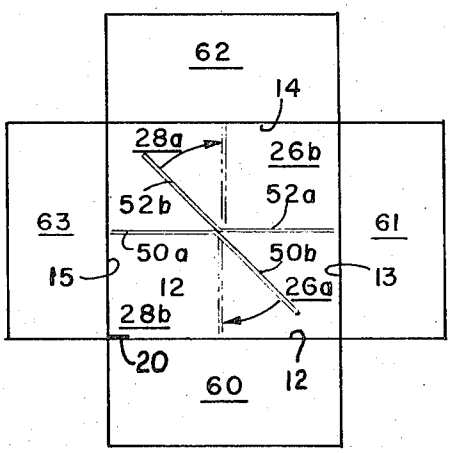


Fig-3-

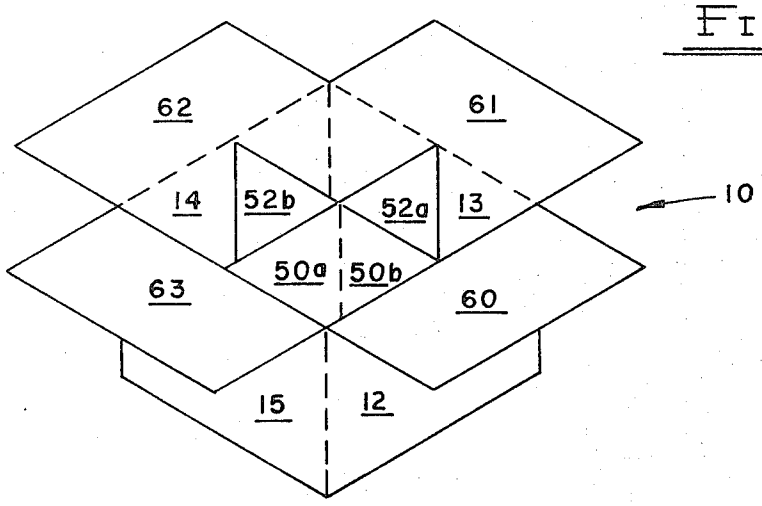


Fig-4-

COMPARTMENTALIZED CARTON

BACKGROUND OF THE INVENTION

This invention relates to cartons formed of paper or corrugated board. More particularly, it relates to containers having dividers for compartmentalizing the interior of the container.

THE PRIOR ART

Compartmentalized board containers normally comprise a container and dividers formed of separate pieces of container board. Such requires separate manufacture, shipment and assembly of the carton and the divider sections. In an effort to overcome these disadvantages, U.S. Pat. No. 2,747,785 issuing to Raymond E. Fink on May 29, 1956 suggests the use of integral dividers with a carton blank. The patentee discloses a container having four sides with bottom flaps attached thereto. Two of these flaps carry partition panels which are partially severed horizontally along a mid-section. When folded inside of the box structure, the extended sections above the cut may rotate to rest upon the other section with the upper edges of each of these divider portion acting as a carrying handle. However, the resulting construction does not provide full partitions for each of the compartments, nor does it seem to substantially enhance the stacking capacity of the container.

SUMMARY OF THE INVENTION

In order to provide a more desirable container, the instant invention includes a box blank with four vertical side walls having integral bottom flaps attached thereto. Carried by two of the opposing bottom flaps are two divider panels having substantially the same dimension as the bottom flap to which it is attached. A cut parallel to the bottom edge of the side wall extends between the flap and the divider for approximately one half of the width of the flap. Additionally the remaining two bottom flaps are cut along their center line perpendicular to the side wall. After folding the four side walls into a box shape, the bottom flaps are folded at a right angle to the side wall portion so as to close the bottom thereof while the divider panels extend into the interior of the carton. Subsequently, each divider panels is folded along a vertical crease line so as to form a right angle and to divide the compartment into four separate compartments. The folded portions of the divider panels extend the full depth of the container and provide both a self-locking characteristic for the bottom of the box and additional vertical loading capacity.

Accordingly, it is an object of the instant invention to provide a container made of container board or other relatively rigid material which can be formed into a box shape and provided with divider portions which both compartmentalize the interior of the container as well as enhance its vertical stacking strength. Additionally, it is an object of this invention to provide a carton blank foldable into the described compartmentalized container which utilizes a minimum amount of material. Similarly, it is an object of the instant invention to provide a compartmentalized container having a self-locking feature without requiring any substantial amount of set-up time for forming the container from the blank.

DESCRIPTION OF THE DRAWING

The manner in which the objects of this invention is obtained will be made clear by a consideration of the following specification and claims when taken in conjunction with the drawings in which:

FIG. 1 is a plan view depicting the box blank which forms a preferred embodiment of the instant invention;

FIG. 2 is a perspective view of a carton of this embodiment in a partially assembled condition;

FIG. 3 is a plan view of a carton in its final stage of assembly; and

FIG. 4 is a perspective view of the instant embodiment in its assembled form.

DETAIL DESCRIPTION

The completed carton of the instant invention is depicted in FIG. 4 which illustrates a preferred embodiment of my invention. This container has four side walls **12, 13, 14** and **15,** a bottom closure formed of flaps **26***a*, **26***b*, **28***a* and **28***b* (see FIGS. **2** and **3**) attached to each of these side walls, and integral dividers **50***a*, **50***b*, **52***a*, and **52***b*. These partition panels extend for the entire depth of the container to completely compartmentalize the same into four compartments and to provide additional stacking strength to the container. Additionally, top flaps **60, 61, 62** and **63** are provided at the upper end of the four side walls to provide a top closure.

The paper or corrugated board blank from which the invention of FIG. 4 may be formed is illustrated more particularly in FIG. 1 while FIGS. 2 and 3 describe the preferred mode of assembly to achieve the finish product.

As illustrated in FIG. 1, a blank is cut from paper or corrugated board so as to form four side panels **12, 13, 14** and **15** separated by three vertical scores **16, 17** and **18.** Integrally attached to one side panel **15** is a flap **20** which may be glued or stitched to panel **12** upon folding of the side panels into a rectangular section in a conventional manner. Integrally carried by each of these side walls are top flaps **60, 61, 62** and **63** which are used to form a top closure for the container. As indicated, these top flaps are separated from one another by vertical cuts **65, 66** and **67** and are delinated from the side panels by horizontal crease lines **70, 71, 72** and **73,** such a top closure being conventional.

At the lower marginal edge of each of the side walls **12** through **15** is a bottom flap denoted by the numbers **25, 26 27** and **28** which are separated from the side walls by a crease lines **32, 33, 34** and **35** and separated from each other by vertical cuts **40, 41** and **42.** Two of the opposed bottom flaps (**26** and **28**) have vertical cuts **44** and **45** extending from the lower marginal edge upward to the crease lines **33** and **35** to divide each flap into two portions **26***a* and **26***b*; **28***a* and **28***b*.

The remaining two flaps **25** and **27** are also integrally formed with the side walls **12** and **14,** and are delinated therefrom by a crease lines **32** and **34** to facilitate folding them at a 90 degree angle to the side walls. Each of these flaps extend the width of the side walls and has a depth equal to one half the width of the formed container.

Integrally attached to these opposing bottom flaps **25** and **27** are partition panels **50** and **52** delinated therefrom by crease lines **52** and **54.** Additionally, these partition panels are partially separated from the bottom flaps **25** and **27** by horizontal cuts **55** and **56** while a vertical crease lines **57** and **58** separate each of these

partition panels into two halves 50*a*, 50*b*, 52*a* and 52*b*.

The manner in which this box blank is formed into the desired compartmentalized container of FIG. 4 is illustrated in FIGS. 2 and 3. In FIG. 2, the four side walls 12 through 15 have been folded along the crease lines 16, 17 and 18 to form a rectangular section, with the glue flap 20 being attached to the inner edge of the side wall 12 so as to rigidify the four side walls into box-like structure. As shown in FIG. 2, the box structure has been turned up-side-down to assemble the bottom portion. Here the two flaps 26 and 28 having the cuts 44 and 45 therein are folded at 90 degrees to their respective side walls. Subsequently, the partition panels 50 and 52 are passed through the cuts 44 and 45. Subsequently, as the divider panels pass all the way into the interior of the box shaped structure, the bottom panels 25 and 27 are bent at a 90 degree angle to the side walls along their crease lines 32 and 34, thus providing the container with a solid bottom portion.

Referring now to FIG. 3 in which the divider panels 50 and 52 have been extended completely into the interior of the carton, it can be seen that they initially divide same into two elongated compartments. At this point, the divider portions 50*b* and 52*b* are rotated in clockwise direction along the crease lines 57 and 58 respectively with the cuts 55 and 56 permitting such rotary movement. Upon the completion of this rotation the separate portions of these panels are at right angles with one another and the container is compartmentalized into four compartments. Since two of the divider panel portions 50*b* and 52*b* are folded at 90 degrees to rest upon the end panels 25 and 27 respectively, they are self locking and will not open unless the rotated panel portions 50*b* and 52*b* are crushed. Further it should be noticed that the divider panels 50 and 52 extend the entire depth of the container and act as columns to increase the stacking strength of the container.

Although the self-locking feature of the instant invention just described is sufficient for carrying light articles such as empty plastic bottles, the bottom of the container may be closed by conventional adhesive tape when utilized to package heavier articles.

From this discussion, it should be evident that applicant has proferred a compartmentalized container which is simple and economic to manufacture and to assemble. Although as shown, the carton has a box-shape, but it may be of an oblong construction if desired. Additionally, the self-locking feature may be obtained even though the divider panels do not extend the full depth of the container.

What is claimed is:

1. A carton formed of a container board comprising:

a. four side walls folded at right angles to one another to form a hollow box shape;

b. two end panels attached to the bottom portion of two of said side walls opposite one another and folded inwardly at right angles to the side walls to which they are attached; each of said end panels being cut at its center in a direction perpendicular to the side wall;

c. two other end panels attached to the bottom portion of the other two of said side walls and folded inwardly at right angles to the side wall to which they are attached;

d. partition panels attached to said other end panels and passing through said cut end panels into the interior of the carton formed by the four walls, said partition panels being partially severed from said other end panels whereby the severed portion may be folded at 90 degrees to the remaining portion so as to define four cells within said carton, and

e. said partition panels extend the depth of the carton.

2. A container blank adapted to be folded into a box-shape container comprising:

a. a rectangular blank of container board divided into four panels by vertical crease lines;

b. four bottom flaps carried by said four panels and separated therefrom by horizontal crease lines;

c. two of said bottom flaps each at an opposite side of one of said four bottom flaps having vertical cuts therein which are perpendicular to said crease lines;

d. said one flap and the remaining of said bottom flaps carrying divider panels having a width equal to that of the flap, but separated therefrom by a horizontal cut for one half the width, said carton being foldable into a box-shape structure with a self locking bottom closure formed of the four bottom flaps and the divider panels,

e. and a pair of crease lines normal to each other in each divider panel intersecting each other at an inboard end of their associated horizontal cuts with one of said pair of crease lines forming a coincident extension of its associated horizontal cut.

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