United States Patent

[11] 3,575,286

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[21] Appl. No. 812,161
[22] Filed Apr. 1, 1969
[45] Patented Apr. 20, 1971
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[54] DISPLAY CARTON
8 Claims, 8 Drawing Figs.

[52] U.S. Cl. 206/45.14, 93/37, 93/49, 206/45.31, 229/27
[51] Int. Cl. B65d 5/48, B31b 3/60
[50] Field of Search 206/45.14, 45.31; 229/27; 93/49.1, 37

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ABSTRACT: The carton is of parallelepiped configuration and comprises spaced front and backwalls connected by two sidewalls, and provides a central pocket or compartment for receiving an article of commerce, and a buffer compartment on each side of said pocket, defined by partition panels extending across the interior of the carton from front to back and parallel with the sidewalls.

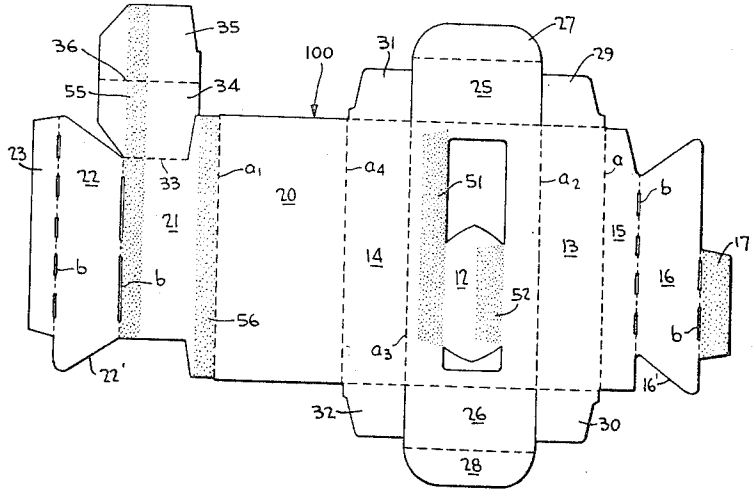

FIG. 1

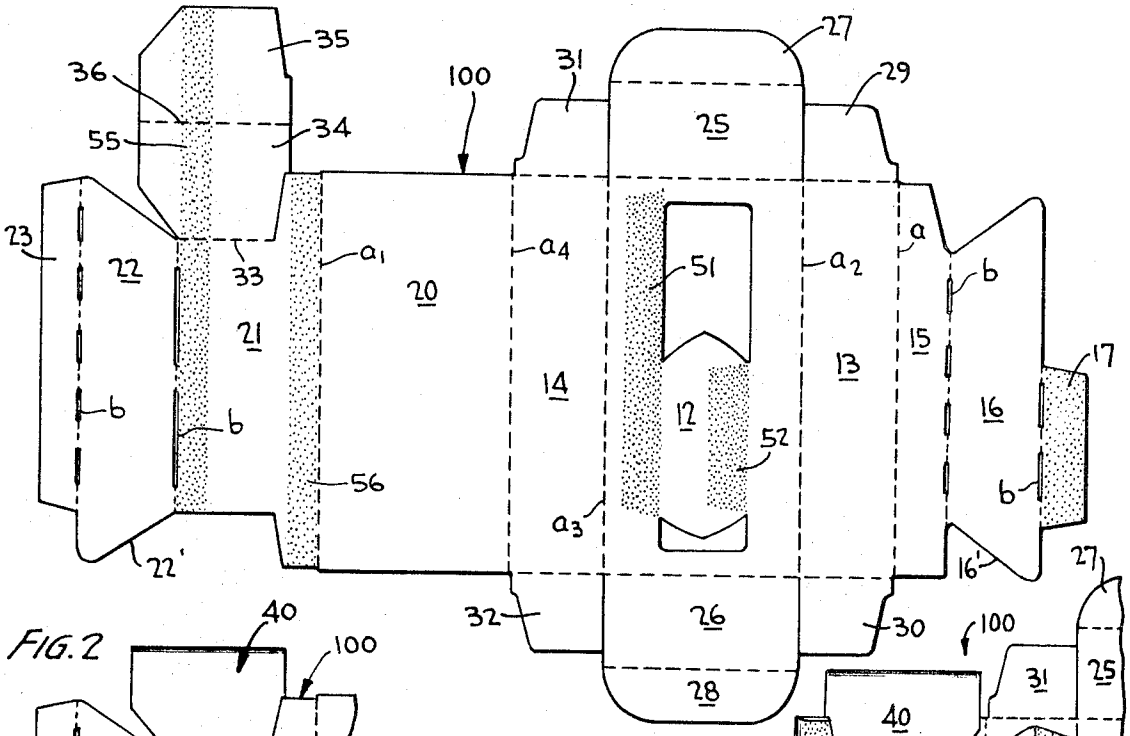

FIG. 2

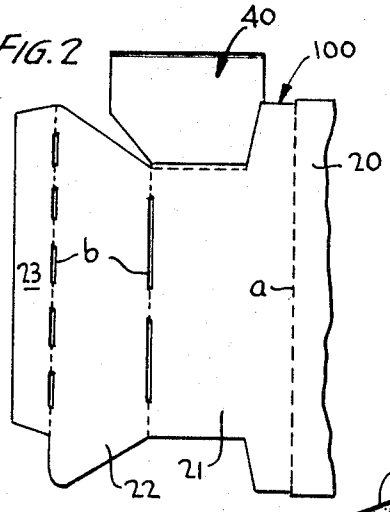

FIG. 3

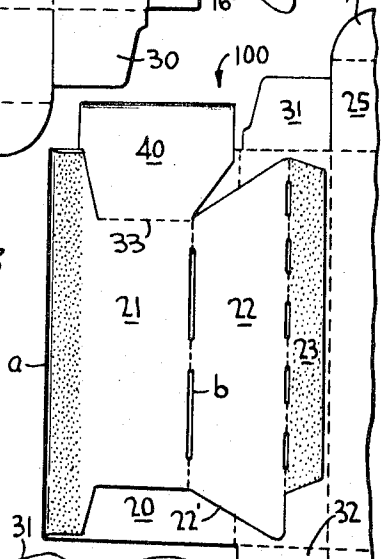

FIG. 4

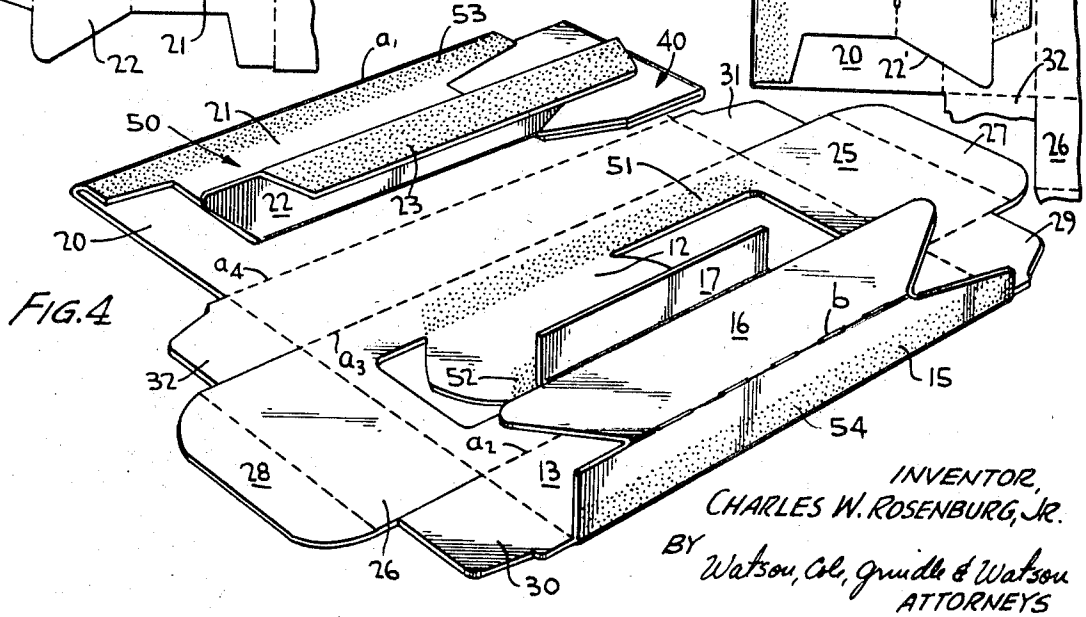

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FIG. 5

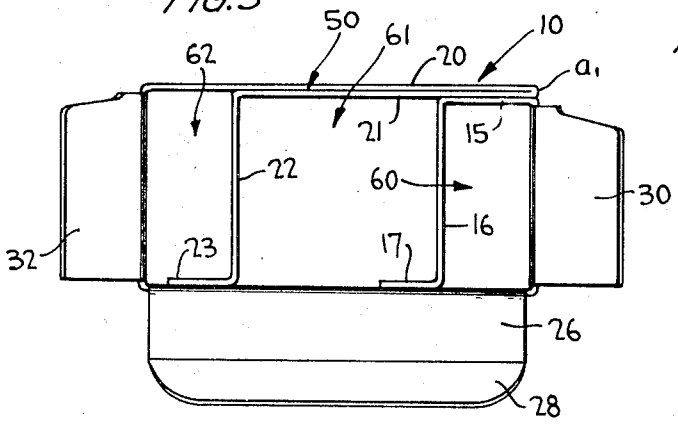


FIG. 7

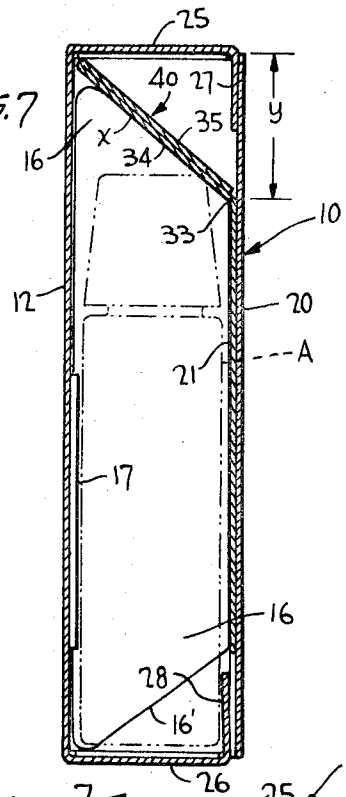


FIG. 6

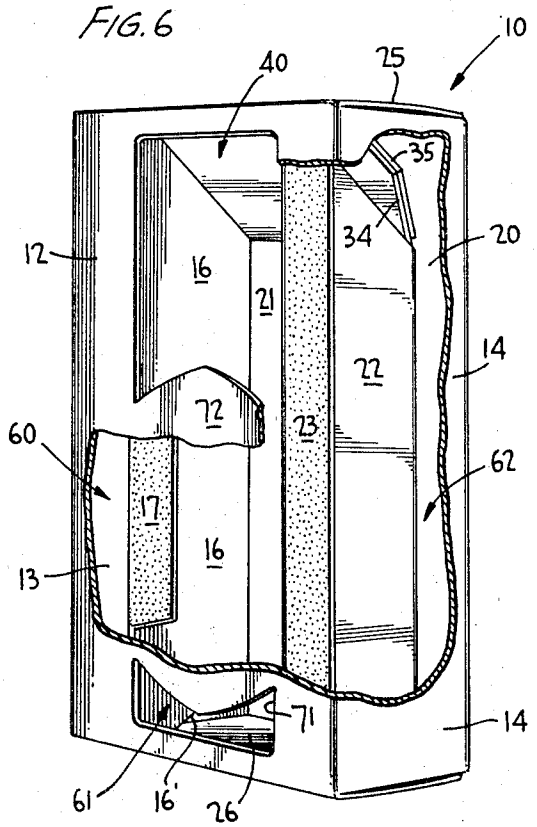
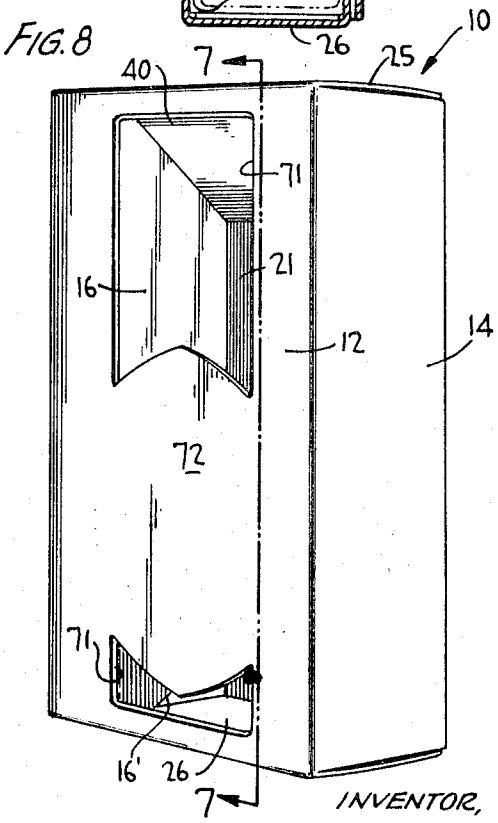


FIG. 8



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DISPLAY CARTON

A novel feature lies in the provision of the respective buffer compartments by panel structures extending from opposite side edges of the basic front panel, the buffer compartments at one side of the compartment being formed by a structure comprising a sidewall panel, a partition panel, and appurtenant flaps successively hinged at the corresponding side edge of said first panel. However, the entire carton is formed of a one-piece blank, and the backwall panel is hinged to the other sidewall panel which is adjacent to the opposite edge of the first panel, and the panel structures which are to comprise the other buffer compartment are disposed along the blank beyond said backwall panel. Thus, in order to bring this last named panel structure to the proper position for forming the second buffer compartment, the backwall is formed double, i.e., in two layers, by means of a partial inner backwall panel hinged to and doubled back over and preferably glued to the primary or outer backwall panel. This brings the partition panel structure for the second buffer compartment at the proper side of the carton and also provides a reinforced structure adding to the sturdiness of the enclosure.

This invention relates to boxes or cartons made of cardboard or materials of similar properties, and more particularly to cartons which are adapted to protectively contain and display articles of commerce, especially those of a frangible nature.

The general object of the invention is to provide a carton of this class which is of sturdy construction and at the same time economical in production.

In its preferred embodiments, the invention contemplates the provision of such a carton which is of novel and improved reinforced construction, and also embodies improvements in the structure and means for securing the parts to provide buffer compartments alongside the central pocket in which the article of merchandise is received.

Other objects, including the provision of a novel one-piece blank from which the carton is formed and the novel method of erecting the carton from such blank will be apparent from the following specification when read in connection with the accompanying drawings in which one embodiment of the invention is illustrated by way of example.

In the drawing,

FIG. 1 is a plan view of a one-piece blank from which the novel carton may be formed;

FIG. 2 is a fragmentary view showing the two layers of the "roof" panel for the article-containing pocket, folded and secured together;

FIG. 3 is a similar view showing the left-hand portion of the blank folded over against the central area as a further step in the forming of the carton;

FIG. 4 is a view in perspective of the blank at a further stage, in which the panels and tabs comprising the pocket partitions are partially folded and ready to be brought to their glued positions;

FIG. 5 is a bottom end view of the completed carton, with the closure flaps open;

FIG. 6 is a view in perspective of a completed carton in erect position, with portions broken away to reveal the interior construction of the pocket partitions;

FIG. 7 is a view in vertical section taken on line 7–7 of FIG. 8; and

FIG. 8 is a perspective view of the completed carton.

The completed carton shown in FIG. 8 is given the designation **10**, but in developing the disclosure the one-piece blank designated **100** in FIG. 1 will be described first.

The front-wall panel **12** is flanked on both sides by the sidewall panels **13** and **14**. Extending from and hinged to the sidewall panel **13** are panels which are to provide one of the buffer compartments of the completed carton. These include a narrow panel **15** (which will have its rear surface adhered to an edge portion of the ultimate backwall structure as will be described), the partition panel **16** and a stub glue flap **17**, for ultimate adhesion to a portion of the front panel **12**.

Hinged to the opposite sidewall panel **14** is the primary or outer backwall panel **20** which is of an area the full width and length of the carton. Then comes an abbreviated panel **21** which will constitute an inner lamination of the backwall structure to be adhered to the surface of the panel **20**. Hinged to this inner partial panel is the other partition panel **22** and its glue flap **23**, which will provide the second buffer compartment.

As suggested in FIG. **1**, the fold lines between panels which will comprise outward exposed areas of the carton are merely creased or scored lines such as shown in broken or dash lines, for example at *a*, but the fold lines for interior panel junctions may be of a slit or perforated and scored nature as suggested at *b*.

End closure flaps and tabs are provided at each end of the front and side panels and include the top and bottom closure panels **25** and **26** hinged to the front panel **12** and provided with the respective flaps **27** and **28**. End flaps for the sidewall panels are at **29** and **30**, and at **31** and **32**, respectively.

Hinged along the line **33** is a panel structure comprising the mirror-duplicate panels **34** and **35**, hingedly connected along the crease or score line **36**; and one of the first steps in erecting the carton may well be the doubling of the panel **35** over the mating panel **34** and adhesively securing the resulting structure together to provide the "roof" structure **40** for the article containing display pocket. This is clearly shown in FIG. **2** of the drawing.

The next step will logically be the folding of the blank along the crease or scoring designated *a*, so that the partial inner back panel **21** overlies and is preferably adhesively secured back-to-back to the outer panel **20**, as clearly depicted in FIG. **3**.

Then partition panel **22** may be moved to a position substantially at a right angle to the doubled backwall structure **50**, with its glue flap **23** flared forwardly to ultimately be adhesively secured to the front panel **12** along the area indicated at **51**. This is suggested in FIG. **4**, and in that FIG., the narrow panel **51** is shown folded at a right angle to the sidewall panel **13**, the partition panel **16** bent at right angles to the panel **15**, and the glue flap **17** flared outwardly to ultimately be adhered to a small area **52** at one side of the center of front panel **12**.

Now the pocket and compartments may be completed by folding the right-hand structure along the score line *a*2 until the sidewall **13** stands at a right angle to the front wall **12** and the glue flap or tab **17** is adhered to the area **52** of the front panel. This establishes the buffer compartment indicated at **60** in the right-hand portion of FIG. **5** or at the left in FIG. **6**. Then the opposite structure is folded at right angles along the lines *a*3 and *a*4 and the flap or tab **23** glued to the area **51** on the inner surface of front panel **12**. Finally, the basic carton structure is completed by the gluing of the area **53** at the extreme edge of double back panel **50** to the area **54** on the narrow connecting panel **15**. Then the pocket **61** and the buffer compartment **62** are completed.

The article to be contained, represented by the bottle or vial A, may then be inserted through the open bottom end of the carton shown in FIG. **5**, being guided by the sloping end edges **16'** and **22'** of the partitions **16** and **22**.

The closure flaps and tabs **25**—**32** are then folded and tucked in the conventional ways to close the carton. In closing the upper flap **25**, the roof **40** is moved to the inclined position shown in FIGS. **6**—**8** and the latter is retained in this position by virtue of the relationship of its height *x* with respect to the distance *y* from its fold line **33** to the closure flap **25** (see FIG. **7**).

Openings **71** may be formed in the front wall of the carton through which only a portion of the contained article may be seen; and these openings may be separated by a band or panel area **72** which may bear identifying legends or labels or other printed or pictorial promotional matter. It will be noted that the positioning of the viewing openings **71** and the areas **51** and **52** to which the flaps **17** and **23** are secured, are such as to

avoid interference one with the other, and at the same time present a symmetrical appearance at the front of the carton.

Incidentally, it may be mentioned that the adhesive for securing all joints, **23—51, 17—52, 20—21, 15—21**, may be applied in streak or stream form to areas **15, 23, 17, 35** and **56** (both sides of **21**).

I claim:

1. A blank from which a multiple-compartment carton may be formed, which carton includes two buffer compartments, one at each side of the carton and separated by space for the contents of the carton: said blank comprising:

a front-wall panel;

a sidewall panel having a first edge connected with a first edge of said front-wall panel;

a backwall panel having a first edge connected to the opposite second edge of said sidewall panel;

a buffer compartment-forming structure connected to the opposite second edge of said front-wall panel to comprise a first buffer compartment at the side of the carton adjacent said second edge of the front-wall panel; and

a second buffer compartment-forming structure connected to an opposite second edge of said backwall panel to comprise the second buffer compartment at the opposite side of the carton adjacent the first named edge of the front-wall panel.

2. The blank as set forth in claim **1**, in which the blank is in one piece;

the first named buffer structure comprises panels including the second sidewall panel of the carton, a partition panel to extend across the carton from front to back, and a glue-flap panel to be secured to an area of said front-wall panel;

the second named buffer structure comprises panels including a carton-spanning partition panel and a glue-flap panel to be secured to another area of said front-wall panel;

and a second inner backwall panel adapted to lie against said first named backwall panel and connected at its opposite edges respectively to the second named edge of the first named backwall panel and to the second mentioned partition panel;

whereby said second buffer compartment may be properly located at the appropriate side of the front wall when the carton is completed.

3. A blank from which a multiple-compartment carton may be formed, which carton includes two buffer compartments, one at each side of the carton and separated by space for the contents of the carton, said blank comprising in sequence from one side to the other:

a glue flap,

a partition panel,

an inner backwall panel,

an outer backwall panel greater in width than said inner backwall panel,

a sidewall panel,

a front-wall panel greater in width than said inner backwall panel,

another sidewall panel having the same width as said first sidewall panel,

a narrow connecting panel,

another partition panel having the same width as said first partition panel, and

a glue flap.

4. A one-piece blank from which a multiple-compartment carton may be formed, which carton includes two buffer compartments, one at each side of the carton and separated by space for the contents of the carton; said blank comprising:

a front-wall panel flanked by two sidewall panels;

a backwall panel having one edge connected to one of said sidewall panels;

two partition panels;

a narrow panel connecting one of said partition panels hingedly with the other of said sidewall panels;

a wider panel connecting the other of said partition panels hingedly with the other edge of said backwall panel;

gluing tabs connected with the remote edges of said partition panels; and

closure flaps and tabs connected to the ends of certain of the wall-forming panels.

5. The method of erecting a multiple-compartment carton comprising providing a one-piece blank including a front-wall panel flanked by two sidewall panels; a backwall panel having one edge connected to one of said sidewall panels; two partition panels; a narrow panel connecting one of said partition panels hingedly with the other or second sidewall panels; and a wider panel connecting the other of said partition panels hingedly with the other edge of said backwall panel; folding the blank along the connection between the second named connecting panel and said backwall panel to bring these two panels into face-to-face contact; swinging both of said partition panels to a position to stand at right angles to the connecting panels; swinging said second sidewall panel to a right angle with respect to said front-wall panel, and swinging said narrow connecting panel to a right angle with respect to the second sidewall panel, whereby the partition panel stands in its final position, as described; swinging said first named sidewall panel to a right angle with respect to said front-wall panel; swinging said combined backwall panels to a right angle with respect to said first sidewall panel, whereby the folded edge portion of said combined backwall panel overlies the narrow connecting panel; and gluing said portion to said narrow connecting panel.

6. A multiple compartment carton of cardboard or the like, erected from a one-piece blank comprising a series of panels connected by fold lines; said carton comprising a parallelepiped structure having a front wall, two oppositely disposed sidewalls, and a backwall; two buffer compartments within said carton, one at each side thereof and just inwardly of each of the sidewalls; one of said compartments formed by an extension of one of said sidewalls inwardly of the carton and including a partition extending from the rear wall to the front wall and secured to a portion of the latter, and parallel with said first named sidewall; the second buffer compartment formed from an extension of said backwall including an inward supplemental backwall panel folded over said first named backwall panel, and a second partition extending from the end of said supplemental panel short of said second sidewall transversely of the carton and having its end secured to another portion of said front wall.

7. The carton as set forth in claim **6** in which the extension of the first named sidewall includes a narrow connecting panel between said sidewall and said first named partition, which connecting panel is in face-to-face contact with and is secured to the inward supplemental backwall panel adjacent the fold line, to complete the basic panel structure of the carton.

8. The carton as set forth in claim **6** in which said front wall is centrally interrupted by openings providing a partial view of the contents enclosed within the carton between the partitions, the remaining solid portions of said front wall affording areas on the inner surface for the securing of the ends of the partitions and areas on the outer surface for display matter.