United States Patent [19]

Forbes, Jr.

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[45] **Oct. 9, 1973**

[54] **DISPLAY CARTON**

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[73] Assignee: **Westvaco Corporation,** New York, N.Y.

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[52] **U.S. Cl.** ..... **206/45.14,** 229/34 HW

[51] **Int. Cl.** **B65d 5/22,** B65d 5/50

[58] **Field of Search** ..... 206/45.19, 45.14; 229/34 HW

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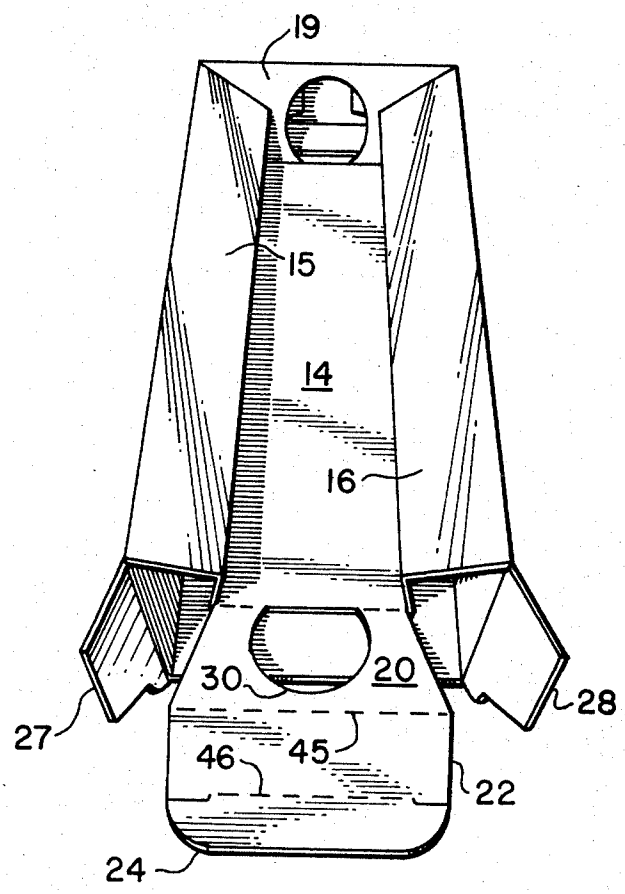
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[57] **ABSTRACT**

A frame view carton is disclosed based on the principles of construction of a tuck style carton wherein the front wall of the carton is adhered directly to the back wall with shadow panels extending from the front wall at both ends and sides of the carton and including tuck flaps for closing the carton as an integral part of either the end shadow panels or the side shadow panels.

1 Claim, 10 Drawing Figures



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SHEET 1 OF 4

FIG. 1.

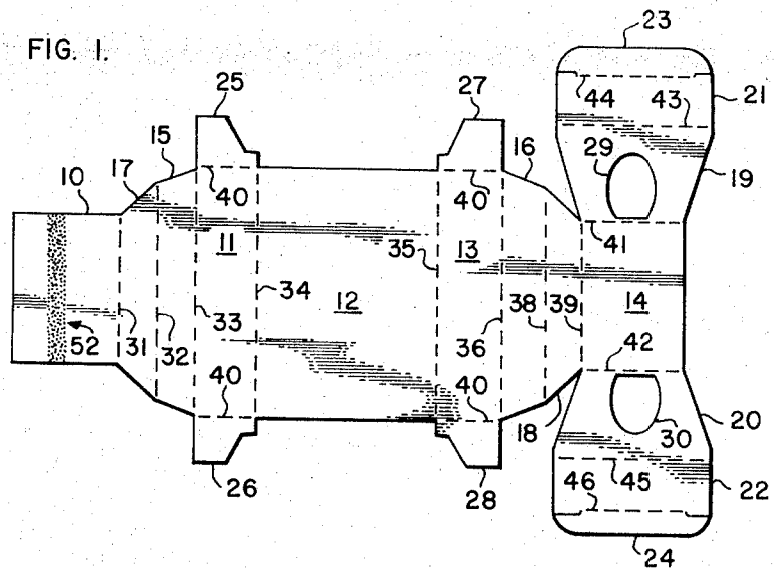


FIG. 2.

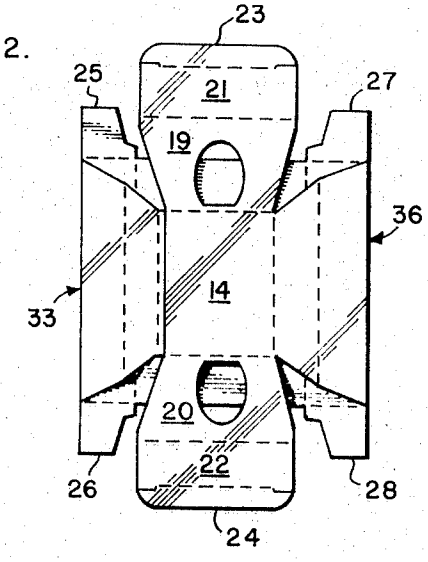
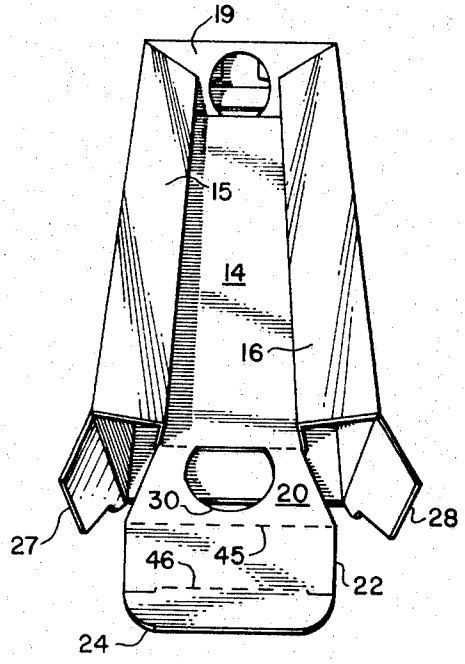


FIG. 3.



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FIG. 4.

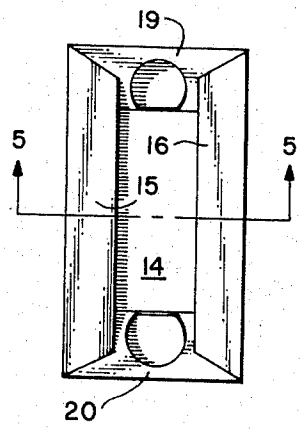


FIG. 5.

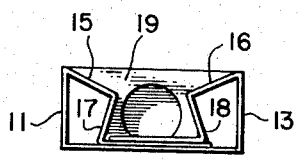
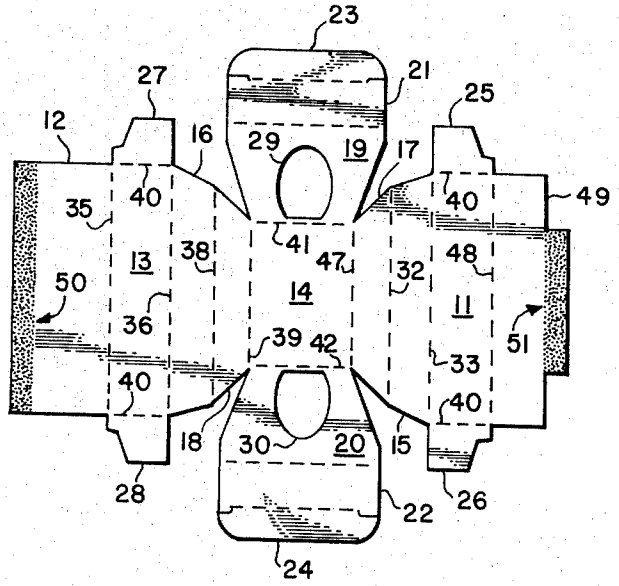


FIG. 6.



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FIG. 7.

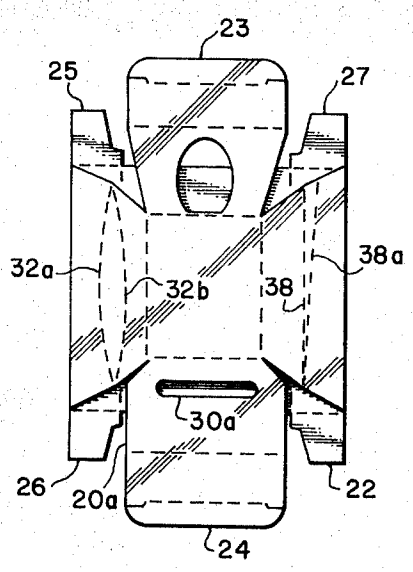
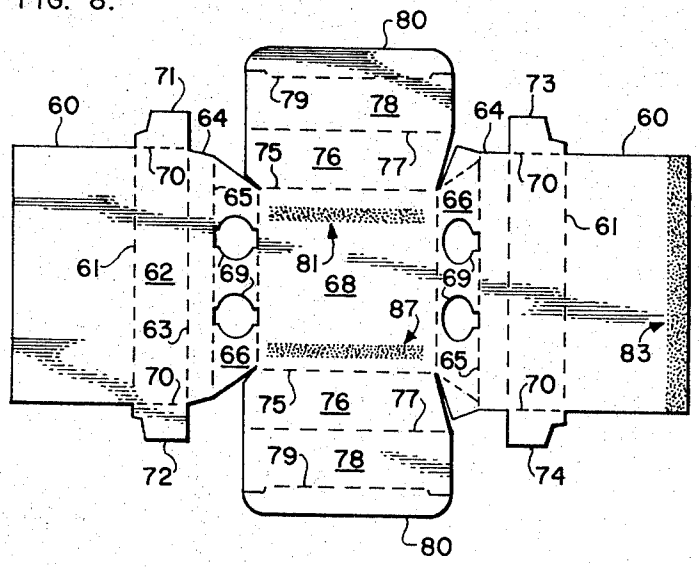


FIG. 8.



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FIG. 9.

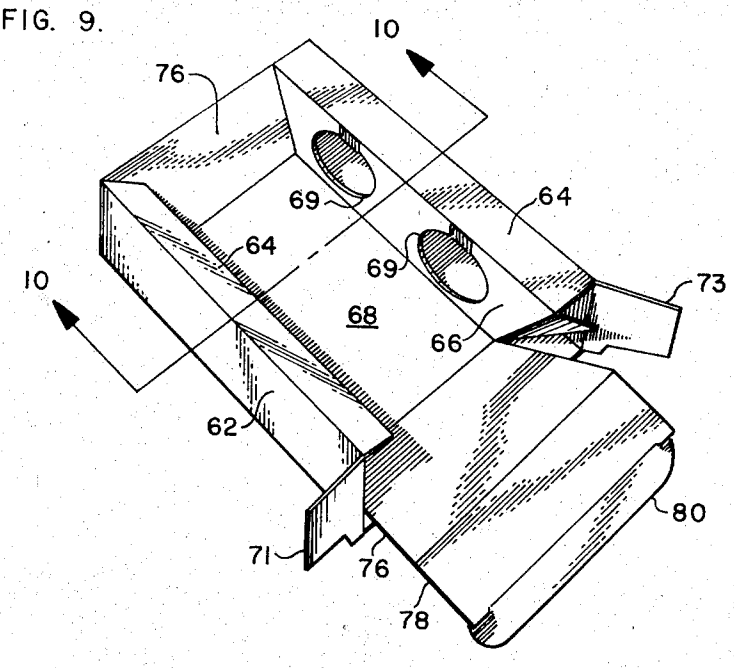
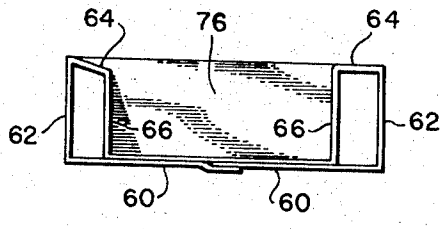


FIG. 10.



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DISPLAY CARTON

SUMMARY OF THE INVENTION

This invention relates to a display carton for articles of merchandise and more particularly it relates to a frame view carton for packaging a product having an unusual shape, and in which the packaged article is visible through the front face of the carton with portions of the carton providing an attractive frame around the article as well as proper support for the article. The carton is particularly adapted for the display of cosmetics, although its usefulness is not limited thereto, and therefore the attractiveness of the display is of particular importance. Frame view type display cartons are not a new concept in the art of packaging. However, display cartons disclosed in the prior art and which are in common use today are subject to several deficiencies.

Frame view type display cartons usually include a back wall, side walls and end walls, with a front wall that is designed to provide shadow panels to frame the article of merchandise and present it visibly from within the carton. Generally these prior art cartons are characterized as comprising a multiplicity of flaps, panels, cuts and creases, all of the elements being folded and joined to each other to provide the display. In particular, it has been normal practice to design the display portion of the carton to include longitudinally extending shadow panels which are hinged to the side walls of the carton and which extend angularly into the carton to frame the article. Additionally, provisions are usually made at each end of the carton for support or retention of the ends of the article. The supporting means has taken a variety of forms, but usually it has been obtained through specially formed end flaps which are sometimes apertured. Under normal conditions, the end flaps are adapted to be folded into the carton so as to capture the ends of the article to hold it in a fixed position and to provide lateral and transverse support for the article as a whole.

The deficiencies normally found in the prior art frame view cartons are that the configuration of the blanks heretofore used require much more paperboard than is normally needed for a standard tubular type carton. Further, the requirement of a multiplicity of panels, flaps and other elements for the prior art cartons, all of which must be interrelated or interlocked, results in a carton which is something less than rugged. Thus the repeated jostling of the carton and the article which it contains sometimes causes the related flaps, panels, tabs and the like to pull apart, causing unsightly gaps and even resulting sometimes in the destruction of the carton. In addition, many of the cartons described in the prior art are adapted only for loading through the front face thereof and hence require hand loading or loading using more complex machinery than would be needed for other types of loading schemes.

Accordingly, one feature of the present invention resides in the provision of a preassembled frame view display carton, constructed from a single blank of suitably cut and scored material, such as paperboard, to provide a full frame view for displaying a three dimensional article. The carton may be erected by automatic machinery or by hand, and the articles may be inserted in the display carton either from the front or from the end thereof.

It is another objective of this invention to provide a frame view display carton which includes means at each end thereof for supporting and retaining the ends of the packaged article. Moreover, the blank from which the novel frame view display carton of this invention is constructed requires no more board than would be necessary for a straight or reverse tuck carton. Therefore, the carton of the present invention may be erected and loaded on existing semi-automatic machinery for handling straight or reverse tuck cartons with only slight modifications to the machinery.

A straight or reverse tuck carton is one of the most commonly used cartons and it normally includes a bottom wall, two side walls, a front wall and a glue flap to form a generally rectangular tube. At each end of the tube, the conventional tuck style carton includes a pair of lateral end flaps which are foldable against the end of the carton, and a tuck flap having a panel to overlie the end of the carton. Finally, the tuck flap also includes a tuck tab to extend into the carton in the closed condition. It is this basic structure that is employed in the present invention to form the frame view display carton disclosed herein.

In constructing the frame view display carton of the present invention, only straight tucks are utilized at either the ends or the sides thereof, by forming the straight tucks as integral parts of the front panel of the carton. Moreover, the tuck style construction employed herein is further characterized by the arrangement which requires that the front panel of the carton be adhered directly to the back panel thereof. This arrangement is permitted in the construction disclosed herein, because, in the case of most frame view type display cartons, the interior depth dimension of the carton is not required to be extremely deep, so that the front panel of the carton may, in each case, be adhered to the inside of the back panel. However, even if the depth dimension of the carton were required to be extremely deep, the configuration disclosed herein could still be accommodated, since with the front panel adhered directly to the back panel, the only change required would be to provide end and side shadow panels having a greater width dimension. This configuration yields in each embodiment disclosed herein, a printable front panel surface located underneath the packaged article, and, which is therefore available for graphic material. In addition, because the end and side shadow panels are integral with and foldably attached to the front panel, each of these panels provide printable surfaces which surround the packaged article. Moreover, in most of the embodiments of the invention disclosed herein, the end frame panels are constructed so as to include article engaging slots or openings therein although this feature is not required. The article engaging slots in the end shadow panels may be omitted, for instance, in those embodiments which include intermediate panels between the front panel and the side frame panels. For this latter case, the carton is formed around the article in such a manner that the intermediate side panels grip the article and hold it in a more-or-less fixed position.

The back panel of the carton disclosed in the present invention has attached at each side thereof conventional upstanding side wall panels. These side wall panels are the same as are normally found in conventional tuck style cartons and serve the same purpose in the present invention. However, when the front panel of the carton disclosed in the present invention is adhered directly to the back panel thereof, the side frame panels

or shadow panels, and, in some cases, the intermediate side panels, serve to connect the conventional side wall panels of the carton to the front wall panel. Of course, the end frame panels serve to connect the front wall panel with the end wall panels as described hereinbefore. Accordingly, in each embodiment of the present invention, with the front panel secured directly to the back panel of the carton, there is provided four tapered frame panels or shadow panels extending from the front panel at each side and end of the carton ensuring both lateral and end support to the packaged article.

It should be appreciated however, that the above described construction represents only one preferred arrangement for the different panels of the carton. For instance, it could be possible to construct the conventional side walls or end walls of the carton with an exterior taper if desired. That is, instead of forming the side or end walls in their typically upstanding configuration, one or more of these walls could be made to taper outwardly toward the base panel of the carton simply by repositioning the fold lines in the carton blank. These alternative forms have not been illustrated because they are believed to be within the scope of the invention as disclosed herein.

DESCRIPTION OF DRAWING

FIG. 1 shows in plan one embodiment of a single blank of material from which the carton of the present invention might be constructed;

FIG. 2 shows a front view of the frame view carton constructed from the blank of FIG. 1;

FIG. 3 illustrates a perspective view of the carton of FIG. 2 with one of the end flaps open for end loading of the carton;

FIG. 4 shows a top view of the carton of FIG. 3 with both ends closed;

FIG. 5 is a sectional view of the carton of FIG. 4 taken along the lines 5—5;

FIG. 6 shows in plan a second embodiment of a single blank of material which might be used to construct the carton of the present invention;

FIG. 7 shows a front view of the frame view carton constructed from the blank of FIG. 6;

FIG. 8 shows in plan a third embodiment of a single blank of material which might be used to construct the carton of the present invention;

FIG. 9 illustrates a perspective view of the carton formed from the blank of FIG. 8 with one side flap open; and,

FIG. 10 is a sectional view of the carton of FIG. 9 taken along the lines 10—10.

DETAILED DESCRIPTION OF THE INVENTION

The blank 1, from which the carton is formed, is shown in FIG. 1 and includes reading from left to right, a first front panel 10, a first side wall panel 11, a back wall panel 12, a second side wall panel 13, and a second front wall panel 14. Located between the first front wall panel 10 and the first side wall panel 11, there is a side frame or shadow panel 15 and an intermediate side panel 17. The intermediate side panel 17 is shown as being connected to the first front wall panel 10 along a first fold line 31 and also connected to the side frame panel 15 along a fold line 32. The side frame panel 15 is then connected to the side wall panel 11 along a fold line 33. Back panel 12 has connected at each side thereof, the first side wall panel 11 along a longitudinal fold line 34, and, the second side wall panel 13 along the fold line 35. At the right side of the blank of FIG. 1, there is arranged a duplicate set of side frame panels and intermediate panels as provided at the left side of the blank. In this regard the second side frame or shadow panel 16 is shown as connected to the second side wall panel 13 along the fold line 36, with the second intermediate panel 18 connected to the second side frame panel 16 along the fold line 38, and finally, the second front wall panel 14 connected to the second intermediate panel 18 along a fold line 39. In each of the cases described thus far, the individual panels and fold lines are arranged to be serially connected to one another along parallel fold lines, with end flaps 25, 26, 27 and 28 connected along fold lines 40 to the ends of the first and second side wall panels 11 and 13. The end closure tuck flaps for the carton construction illustrated in FIG. 1 is provided by attaching straight tucks to the ends of the second front wall panel 14 as follows. A pair of end frame or shadow panels 20 are connected to each end of the front panel 14 along fold lines 41 and 42. In addition, each of the end frame panels 20 include product retaining openings 29 and 30, and, have attached to the ends thereof the end closure panels 21, 22 along fold lines 43, 45, and tuck closure flaps 23, 24 along fold lines 44 and 46 respectively.

The carton formed from the blank of FIG. 1 utilizes two straight tucks since both of the tuck flaps 19–21 and 20–22 extend from the front wall panel 14. For the purpose of preassembling the carton formed from the blank of FIG. 1, the blank may be run on a straight line gluing and folding machine which requires two glue applications and two folds. Thus, with the printability side of the carton down, the blank is passed through a glue station having a top glue pot for applying glue at 52 to the inside of the front wall panel 10, while at the same time, glue is applied from a bottom glue pot to the outside of the front wall panel 10. Next the carton is folded along fold line 33 to adhere the inside of the front wall panel 10 to the inside surface of the back wall panel 12, and then a second folding stage is encountered which folds the carton blank along fold line 36 to adhere the inside of the front wall panel 14 to the exterior surface of the first front wall panel 10. FIG. 2 illustrates the carton thus constructed which is then squared up, as shown in FIG. 3, and either one or both ends of the carton is then closed before filling and shipping.

For the purpose of loading the carton, initially the two side wall panels 11 and 13 are moved to their upstanding position. If the carton is then to be loaded from one end, only the opposite end of the carton is closed before loading and after loading the other end of the carton is subsequently closed. Of course where the carton is to be front loaded, both ends of the carton are closed and the article to be packaged is simply forced down, and in between the two side wall panels 17 and 18 with the ends of the packaged article being engaged in the product retaining openings 29 and 30 provided in each of the end frame panels. FIG. 3 illustrates the carton as arranged for end loading, and, FIG. 4 shows the carton in the completely set up configuration, but without a product.

As an alternative to the specific construction just described for the first embodiment, the blank structure illustrated in FIG. 1 could be changed within the scope of the present invention to effect an even greater savings in the material required for cutting a given number

of blanks from a sheet of blank material. For instance, the tuck flap **20-22** at the lower end of panel **14** could be attached to the lower end of panel **10** thus reducing the amount of waste material generated when cutting the carton blanks. Of course, if this alternative form were used, the blank would have to be applied with adhesive using a pattern glue applicator rather than the straight line glue applicator used with the blank construction of FIG. **1.**

In addition, for an even greater savings in blank material, it would also be possible to omit the first front wall panel **10** entirely if an optional glue flap were attached to the free edge of the second front wall panel **14.** For this latter alternative, the carton would be preassembled without the double thickness front wall panels by adhering panel **14** to the inside of panel **12** and gluing the optional glue flap on panel **14** to the intermediate side panel **17.**

Thus it should be obvious to one skilled in the art that the novel concept disclosed herein, for constructing a frame view type carton based on the principles of a conventional tuck style carton, is susceptible to many different variations within the scope of the present invention.

In a second embodiment of the invention, the top wall panel **14** and the attendant end closure tuck flaps **19** and **20** are oriented at a different location on the blank structure which yields a double thickness back wall panel when using the preferred folding sequence for setting up the carton. FIG. **6** shows the blank construction for the second embodiment of the present invention, and, for the identical elements used in the second embodiment that were used in the first embodiment, the same reference characters have been provided. Thus, reading from left to right in FIG. **6,** bottom wall panel **12** is shown attached to the first side wall panel **13** along fold line **35.** A second fold line **36** is shown dividing the first side wall panel **13** from the first intermediate panel **16.** The first side frame panel **18** is attached to the first intermediate panel **16** along fold line **38,** and a front wall panel **14** is shown attached to the first side frame panel **18** along fold line **39.** At the opposite side of the front wall panel **14,** there is a second side frame panel **17** attached thereto along a fold line **47,** and the second intermediate panel **15** is shown attached to the second side frame panel **17** along fold line **32.** Finally the second side wall panel **11** is shown as being attached to the intermediate panel **15** along fold line **33,** and to complete the construction, an additional bottom wall panel **49** is shown attached to the second side wall panel **11** along fold line **48.** In the blank of FIG. **6** as in the blank shown in FIG. **1,** end flaps **25, 26, 27** and **28** are shown attached to the respective end wall panels **11** and **13** along fold lines **40** and, of course, the straight tuck flaps **19–21** and **20–22** are shown as being directly connected to the front wall panel **14** as before in the embodiment of FIG. **1.**

Accordingly, the distinguishing features between the embodiment of FIG. **1** and the embodiment shown in FIG. **6** resides in the fact that in the FIG. **1** embodiment, a double thickness front wall panel results from the arrangement of the different panels, whereas in the FIG. **6** embodiment, a partial double thick bottom wall panel is used to close the carton. Furthermore, in the second embodiment the carton formed from the blank shown is applied with adhesive from two glue pots, both located at the top of the blank, and, utilizing a simultaneous straight line application. In this regard the blank shown in FIG. **6** is preassembled by arranging the blank with the printability side down on a straight line gluing and folding machine utilizing the following steps. First the blank is passed through a gluing stage where glue is applied to the inside of the bottom wall panel **12** as shown at **50,** and to the second bottom wall panel **49** as shown at **51.** Secondly, the blank is folded with a first fold from right to left along fold line **33** to adhere the bottom panel **49** to the front panel **14,** and then the blank is folded from left to right along fold line **36** to adhere the bottom wall panel **12** to the second bottom wall panel **49** as shown. Of course, with this particular arrangement the carton comes out of the folding and gluing machine in an upside-down configuration so that prior to squaring the carton and filling and sealing it, the blank must be turned over. However, the subsequent steps for using the carton shown in the FIG. **6** embodiment are the same as were needed for the FIG. **1** embodiment carton.

FIG. **7** illustrates several alternative arrangements which come within the scope of the present invention. For instance, the single score line at **32** separating the side frame panel from the intermediate side panel could readily take the form of curved lines **32*a*** and **32*b*** as shown. This sort of configuration would be used for packaging specialty products to achieve a different printable surface or a different esthetic effect to the outside surface of the framed walls of the carton. In addition, as shown at the right side of the blank of the carton of FIG. **7,** the single score line **38** separating the side frame panel from the second intermediate panel could either be replaced by a single diagonal score line **38*a***, or, both diagonal score line **38**a in addition to the regular score line **38** could be used. These changes would be necessitated when a particular type of article were to be packaged that, for instance, had a larger dimension at one end than at the other. It would also be possible when the circumstances demanded it, to omit the fold lines **32, 38** entirely to achieve frame or shadow panels at the sides of the carton of a curved configuration. The curved shadow panels would result from the proper dimensioning of the shadow and intermediate panels, and the adjacent side wall panel. Obviously, to achieve different effects within the scope of the present invention.

To further illustrate other alternative embodiments that could readily be used in the present invention, note that in FIG. **7** the lower tuck flap construction off the front wall **14** has been shown as having a shape at **20*a*** different from the shape illustrated in FIG. **6,** with a different shaped opening **30*a*** therein for retaining one end of the product. Obviously these features could readily be substituted for, or incorporated with, the features previously disclosed in conjunction with the detailed description of FIGS. **1** and **6.** It should be appreciated, therefor, that the carton obtained by folding the blank of either FIG. **1** or FIG. **6,** as hereinbefore described, incorporates several unique and novel features not hereinbefore anticipated by the prior art frame view cartons. For instance, with the novel carton construction presented herein the front wall panel is not slit or scored except in regard to furnishing framed panels or shadow panels at each of the four sides thereof. Moreover, by adhering the front wall panel directly to the back wall panel, the carton obtains a structural rigidity heretofore not found in the prior art frame view

cartons. Thus when the construction disclosed herein is utilized for a frame view carton, lighter weight material could be employed for the blank than that required for the prior art cartons. In addition, by utilizing a pair of frame panels, i.e., the frame panel and the intermediate panel, at each side of the carton, the product loaded therein can be firmly fixed in position to thus render the carton pilfer proof and rugged. It should be appreciated, however, that the side frame panel construction shown herein is only to be considered a preferred embodiment. Obviously one could extend the side frame panels from the upper edge of the side wall panels continuously and in an unbroken plane down to the edges of the front wall panel **14.** This alternative construction would not, however, yield the lateral protection to the packaged article that would be achieved with the preferred embodiments.

Moreover, in each of the specific embodiments disclosed thus far, the end frame panels of the carton have been illustrated as having provisions therein for packaging only a single product. It should be obvious, however, that more than one product could be packaged in a single carton by providing more than one product retaining opening in each of the end frame panels. The principal provisions of the invention would still be retained in the different constructions because the carton would still have the tuck flaps extending from the front wall portion and the carton, and it would still be subject to being end loaded with the product after one end of the carton was closed. Moreover, by careful orientation of the fold lines between the two side intermediate panels and the two side frame panels, the longitudinal or lateral product retaining features of the invention could still be retained.

FIG. **8** illustrates yet another embodiment of the present invention which has for its distinguishing feature the provision whereby the tuck flaps form the side walls of the carton rather than the end walls of the carton. In this embodiment as in the previously described constructions, the tuck flap is still an integral part of the front panel of the carton, however instead of forming the end of the carton the tuck flaps are taken off at the sides of the front panel. Obviously the carton formed from the blank of FIG. **8** would not be susceptible to an end loading scheme, but, the use of a basic tuck-style carton design is still utilized which feature is deemed to be the novel element in the present invention.

Since the blank disclosed in FIG. **8** is more-or-less symmetrical about its two centerlines, similar reference characters have been used to denote similar elements of the blank. Note that the blank includes a pair of overlapping back panels **60** separated from their respective end wall panels **62** by fold lines **61.** The end frame panels **64** of the blank are connected to the end wall panels **62** along fold lines **63,** and the product retaining end panels **66** are connected to the end frame panels **64** along fold lines **65,** and, to the single front wall panel **68** along fold lines **67.** It is noted in FIG. **8** that the product retaining end panels **66** each include a pair of product retaining openings **69,** however it should be appreciated that only one, or, more than two product retaining openings **69** could be employed depending upon the kind of product being packaged. In addition, the product retaining openings **69** could be omitted entirely if the type of product to be packaged did not require retaining openings.

For the purpose of closing the ends of the carton, the blank in FIG. **8** also includes the end flaps **71, 72, 73** and **74** attached along fold lines **70** to the ends of the end wall panel **62.**

The tuck closure flaps at each side of the carton blank of FIG. **8** include a pair of side frame panels **76** attached to the single front wall panel **68** along respective fold lines **75.** The side wall panels **78** are foldably attached to the side frame panels **76** along fold lines **77,** and the tuck flaps **80** are attached to the opposite side of the side wall panels **78** along fold lines **79.**

Accordingly, the carton blank shown in FIG. **8** and described hereinabove is pre-assembled and glued for shipment to the user as follows. With the carton blank placed printability side down, ahdesive is applied to the inside surfaces of the front wall **68** in a pattern as shown at **81, 82** and the blank is initially folded along the left fold line **63** to adhere the inside of the left portion of the bottom panel **60** to the front panel **68.** Next the blank would pass through a straight line adhesive applicator to apply adhesive to the inside of the right portion of the bottom panel **60** as shown at **83.** Finally the blank would be folded a second time along the right fold line **63** from right to left to adhere the inside overlapping edge of the right portion bottom panel **60** to the exterior of the left portion bottom panel **60.** Obviously these panels **60** could be made to overlap one another completely if desired, but the result would only require more material than really necessary to fabricate the desired carton.

Before filling the carton constructed from the blank of FIG. **8,** the blank in its preglued form would be turned printability side up and the end walls **62** squared to their upright position. Subsequently, the side frame panels **76** would be raised to their frame view position, at an oblique angle to the attached front wall panel **68,** and the end flaps **71, 72, 73** and **74** would be folded in prior to the final step of maneuvering the tuck flaps **80** into the tucked position shown in FIG. **9.** With the carton thus set-up, it would then be filled from the front and provided with an overwrap to secure the product or products in place.

Alternatively, the product or products to be packaged in the carton of FIG. **9** could be introduced into the carton during the folding sequence. That is, before erecting the carton end walls **62** to their upright position, the product could be arranged on the front wall panel **68** by spot gluing or the like, and with the upward movement of the end walls **62,** the product retaining walls **66** with their product capturing openings **69** would simply slide around the packaged product. Thus it should be appreciated that the carton shown in FIG. **9** could be capable of several alternative features without deviating from the inventive concept described herein. In this regard, to provide an even easier scheme for front loading the carton, the frame vue panels **64** could be made continuous, with the product retaining end panels **66** thereby yielding a construction (i.e., without score lines) with sloping end walls from the front panel **68** to the upper edge of the end walls **62.**

Thus there is disclosed herein a novel frame view carton which achieves all of the advantages of previous frame-type cartons but which suffers form none of the disadvantages. By discovering that the principles behind the construction of a more-or-less conventional tuck style carton could be applied to producing frame

view cartons, the novel carton embodiments disclosed herein were developed to yield a superior product.

Accordingly, while the drawing and description herein are deemed to illustrate and describe only the preferred embodiments of the present invention, it should be understood that various changes and alterations could readily be made within the scope of the following claims without departing from the spirit of the invention.

I claim:

1. A tuck-style display carton of the frame view type comprising:

a. a front and back panel adhered directly to one another, said front panel further comprising a pair of flaps adhered to one another, a pair of side wall panels connected to said back panel and a pair of end wall panels connected to one of the flaps of said front panel;

b. shadow panels foldably connected to each of said pair of side and end wall panels and extending angularly into the carton for framing articles packaged therein wherein the end wall shadow panels are also foldably attached to one of the flaps of said front panel and each end wall shadow panel contains one or more product retaining openings;

c. an intermediate panel connected between each of said shadow panels connected to the side wall panels and each of the flaps of said front panel for retaining articles packaged in said carton; and,

d. a pair of tuck flaps connected to said end wall panels.

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