Aug. 25, 1964 G. E. STRUBLE 3,145,898

DISPLAY CARTON HAVING NON-RECTILINEAR FOLD LINES

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FIG. 1.

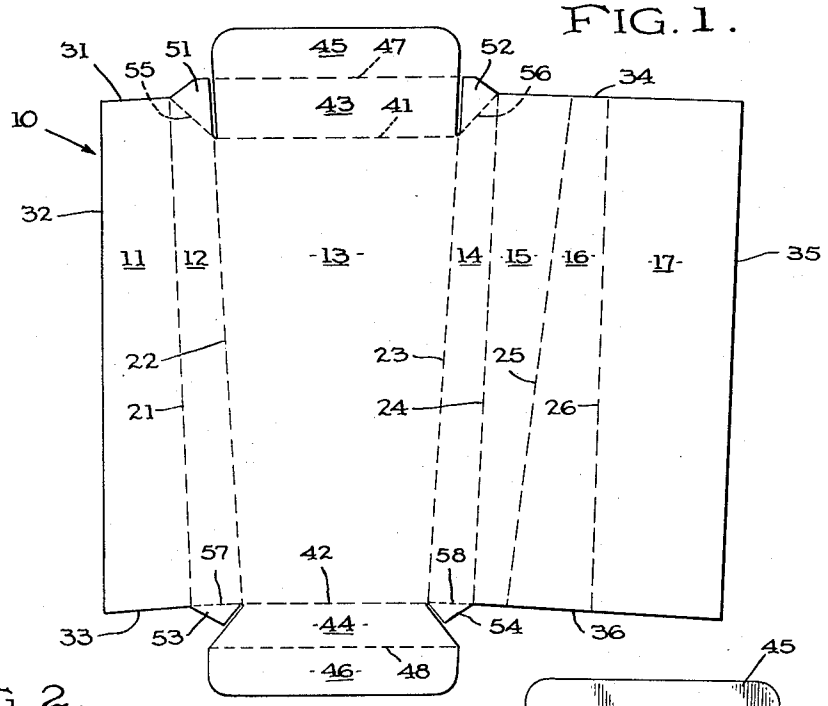


FIG. 2.

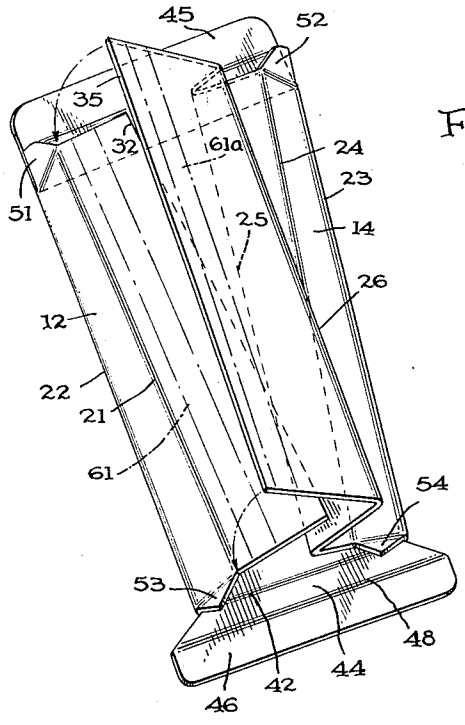
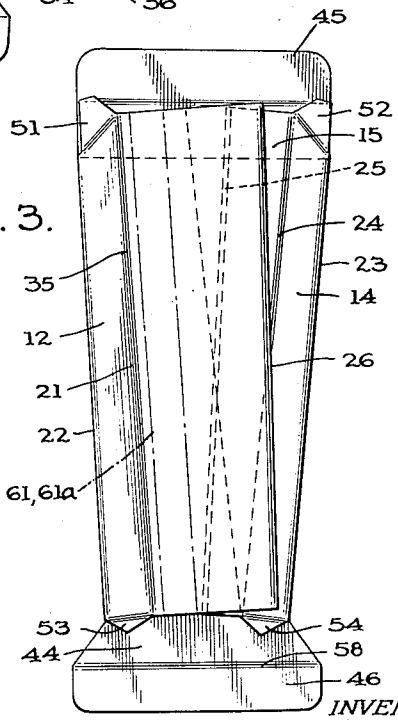


FIG. 3.



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FIG. 4.

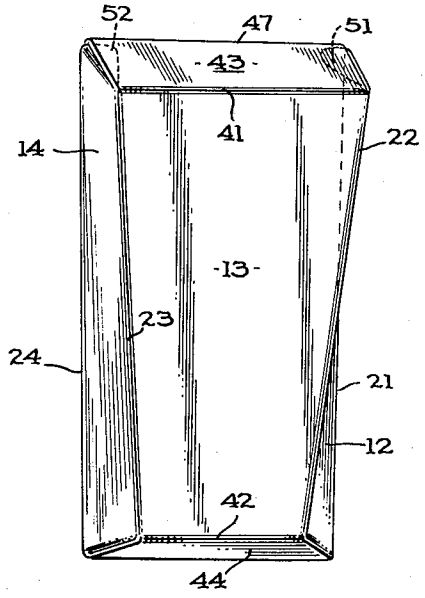


FIG. 5.

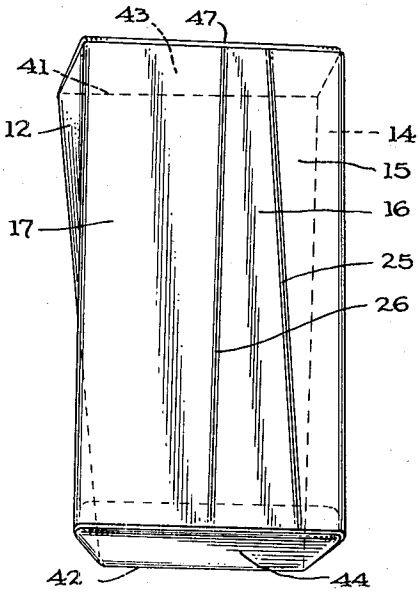


FIG. 6.

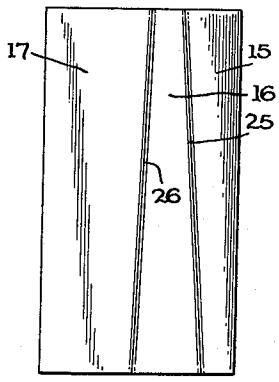


FIG. 7.

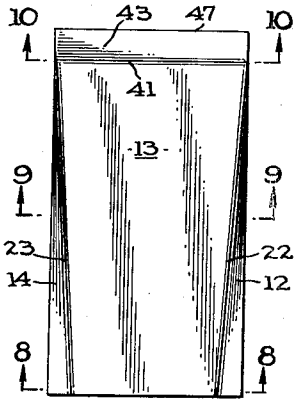


FIG. 8.

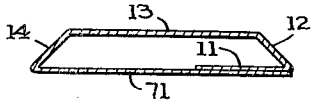


FIG. 9.

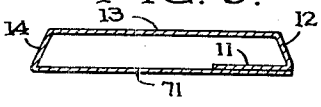
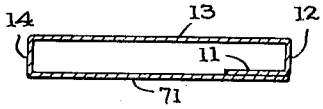


FIG. 10.



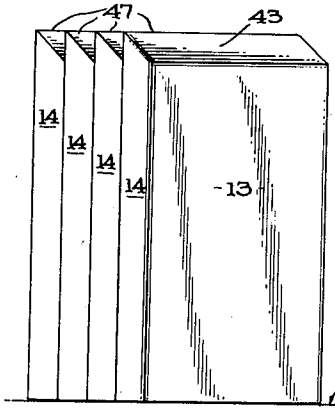
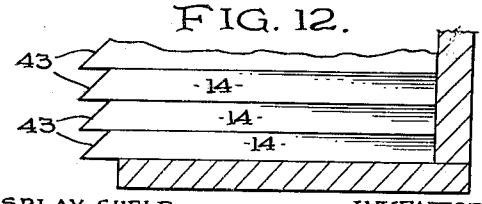


FIG. 11.

FIG. 12.



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DISPLAY CARTON HAVING NON-RECTILINEAR FOLD LINES

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2 Claims. (Cl. 229—8)

This invention relates generally to improvements in cartons and more particularly to a novel display package having non-rectilinear fold lines.

A primary object of the present invention is to provide a novel blank and carton constructed from paperboard or the like which is readily adapted for use in standard automatic erecting, gluing and packing equipment.

Another object is to provide a display package in which all sides are displayed to the most advantage and although all sides are angled, the profile of the novel carton remains rectangular in all planes. This allows normal packing in a case and stacking on the shelves which was not possible with a carton of this type prior to the present invention.

A further object is to provide a distinctive display package with angled sides which may be glued on standard straight line equipment.

Other objects and the nature and advantages of the instant invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a plan view of the novel blank in its flat condition from which the box in accordance with the invention is constructed;

FIG. 2 is a perspective view showing the novel carton in a partially folded condition during the glue applying operation;

FIG. 3 is a plan view of the carton folded during the next step in the gluing operation;

FIG. 4 is a front perspective view showing the carton in fully erected and closed condition;

FIG. 5 is a rear perspective view of the carton shown in FIG. 4;

FIG. 6 is a back elevation view of the carton;

FIG. 7 is a front elevation view of the carton;

FIG. 8 is a transverse section taken in the plane of line 8—8 of FIG. 7;

FIG. 9 is a transverse section taken in the plane of line 9—9 of FIG. 7;

FIG. 10 is a transverse section taken in the plane of line 10—10 of FIG. 7;

FIG. 11 is a perspective view of several of the novel cartons stacked and standing on a shelf for display; and

FIG. 12 is a fragmentary perspective view showing an alternative method of stacking the novel cartons on a shelf for display purposes.

Referring to the drawings in detail, and first considering FIG. 1, the novel blank is indicated generally at **10** and is produced from any suitable paperboard material or the like. The blank includes elongated quadrilateral panels **11** through **17** inclusive, hingedly connected by fold lines **21** through **26** inclusive. Panel **11** with fold line **21** forming one side has top edge **31**, side edge **32** and bottom edge **33**. Quadrilateral panels **15**, **16** and **17** together form a rectangle bounded by fold line **24**, top edge **34**, side edge **35**, and bottom edge **36**. Panel **13** which may be designated as the front panel of the carton is a quadrilateral of trapezoidal shape bounded by fold lines **22** and **23** and by fold lines **41** and **42** hingedly connecting cover flaps **43** and **44** respectively to front panel **13**. End tabs **45** and **46** are hingedly connected to cover flaps **43** and **44** respectively by fold lines **47** and **48** respectively. Panel **12** which may be designated as a side of the carton has quadrilateral end flap **51** hingedly attached to side panel **12** by fold line **55** formed at an angle to fold lines **21** and **22**. In a like manner quadrilateral end flap **52** is hingedly attached to the other side panel **14** by fold line **56**. Triangle end flaps **53** and **54** are hingedly attached to the opposite ends of side panels **12** and **14** respectively by fold lines **57** and **58** respectively.

In the perspective view of FIG. 2 the novel carton **10** is shown in a partially folded configuration. Before any folding takes place a glue strip **61** is applied on the outer surface of panel **11**, as shown by the broken lines thereon forming the boundaries of strip **61**. Fold lines **21** and **22** are so angled in relation to panel **13** that glue strip **61** maintains an alignment parallel with the side of the glue machine allowing application of the glue by the glue wheel of a standard gluing machine. Panels **14–17** are then folded inward along fold line **23** followed by the outward folding of panels **16–17** along fold line **25**. Panels **11–12** are then folded inward along fold line **22**. Panel **17** is then folded inward along fold line **26**. FIG. 2 illustrates carton **10** in a folded position just prior to completely folding along fold lines **22** and **26**. At this time the inside surface of panel **17** has not yet contacted glue strip **61** on the outer surface of panel **11**. FIG. 3 illustrates the carton with the panels **11–17** folded prior to erecting the carton for closing of an end and filling.

Because of the angle of false score or fold line **25** the glue in the alternative may be applied to glue strip **61*a*** on panel **17**. If done in this way then the blank would be folded first on fold line **23** with panels **14–17** moving inward and then on fold line **25** with panels **16** and **17** moving outward. The inside surface of panel **17** would then be exposed to contact with a glue wheel with glue strip **61*a*** applied in parallel alignment with the edge of a glue machine.

The additional false score or fold line **26** allows the folding of blank **10** in a flat condition on the gluing equipment immediately after application of either glue strip **61** or **61*a*** as shown in FIG. 3.

After the blank **10** has been glued, erected, filled and closed it presents a carton having the form shown in the various views of FIGS. 4–10. The front perspective view shows the slope of sides **12** and **14** and cover flap **43** in relation to front panel **13** and panels **15**, **16** and **17** forming the back panel of the carton. This is further shown in the rear perspective view of FIG. 5 which has been tilted slightly forward to show the bottom. Fold lines **25** and **26** are shown in the back perspective view. These are only false folds since their use is limited to the gluing and forming stages of the carton but there is no fold on these lines in the final carton construction. Panels **15**, **16** and **17** form one flat surface which is the back panel **71** of the carton. The back elevation view of FIG. 6 shows the rectangular form of the carton which allows ease of stacking and packing. This is further shown by cross-sections in FIGS. 8, 9 and 10 taken in planes of lines 8—8, 9—9, and 10—10 respectively of FIG. 7. Also shown in these figures is the juxtaposition location of panels **11** and **71** by glue strip **61** or **61*a***.

In FIGS. 11 and 12 a plurality of the novel cartons are shown stacked on a shelf for display purposes. They may be conveniently stacked on bottom cover flap **44** which is in a rectangular plane in relation to the front and back panels **13** and **71** respectively as shown in FIG. 11. Alternatively the cartons may be stacked with back panel **71** down and sloping cover flap **43** forward for display purposes as shown in fragmentary view of FIG. 12.

These cartons can be formed on conventional machinery now in use because of the additional false folds made on the blank and a carton can be made which is distinctive in appearance and present greater display surface

while still retaining the front, back, and bottom sections in rectangular planes for ease of packing and stacking.

It will be obvious to those skilled in the art that various changes may be made without departing from the scope of the invention and therefore the invention is not intended to be limited to what is shown in the drawings and described in the specification, but only as set forth in the appended claims.

What is claimed is:

1. A blank for producing cartons adapted for display purposes comprising

a trapezoidal panel having fold lines forming the bases and sides of a regular plane trapezoidal structure,

a first side panel hingedly connected to said trapezoidal panel at one of said sides of said trapezoidal panel,

a second side panel hingedly connected to said trapezoidal panel at the other of said sides of said trapezoidal panel,

a substantially rectangular panel hingedly connected to said second side panel,

said rectangular panel having at least one false score line thereon whereby the carton may be constructed on standard machinery,

a substantially rectangular cover flap hingedly attached to one of the bases of said trapezoidal panel,

a substantially trapezoidal cover flap hingedly attached to the opposite base of said trapezoidal panel from said rectangular cover flap.

said trapezoidal panel having less distance between its base fold lines than the distance between substantially adjacent and parallel edges of said rectangular panel,

triangular end flaps hingedly attached to each of said side panels at the edge adjacent said trapezoidal cover flap,

and a panel hingedly connected to said first side panel.

2. A carton adapted for display purposes comprising

a trapezoidal panel with edges forming the bases and sides of a regular plane trapezoidal structure,

a rectangular panel in a plane substantially parallel to the plane of said trapezoidal panel having two of its edges respectively substantially parallel to said base edges of said trapezoidal panel and adjacent thereto,

a substantially rectangular cover flap hingedly connected to one of said base edges of said trapezoidal panel and closing the area between said base edge of said trapezoidal panel and said adjacent substantially parallel edge of said rectangular panel,

said rectangular panel having at least one false score line thereon,

a substantially trapezoidal cover flap hingedly connected to the other of said base edges of said trapezoidal panel and closing the area between said other of the base edges of said trapezoidal panel and said adjacent substantially parallel edge of said rectangular panel,

side panels hingedly connecting each of said side edges of said trapezoidal panel to a corresponding edge of said rectangular panel in planes intersecting outside the confines of the carton,

said trapezoidal panel having a different distance between its base fold lines than the distance between substantially adjacent and parallel edges of said rectangular panel,

triangular end flaps hingedly attached to each of said side panels at the edges adjacent said trapezoidal cover flap,

and a panel hingedly connected to one of said side panels and in a plane parallel to said rectangular panel and in juxtaposition thereto.

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