Dec. 9, 1969 T. A. MASON 3,482,678

SHADOW BOX DISPLAY

Filed Aug. 26, 1968 2 Sheets-Sheet 1

Fig. 2

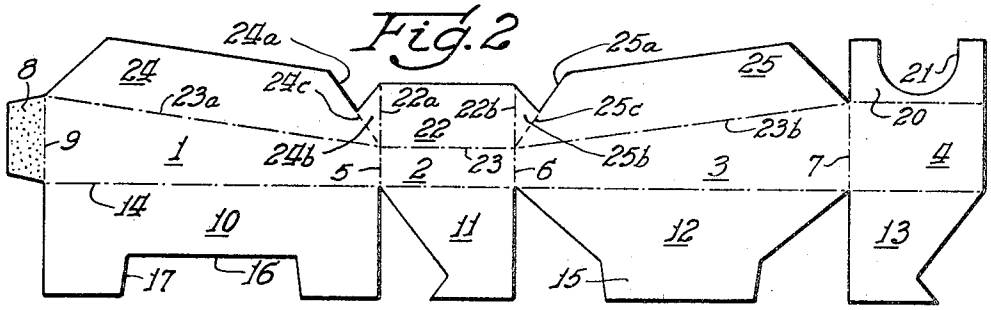


Fig. 3

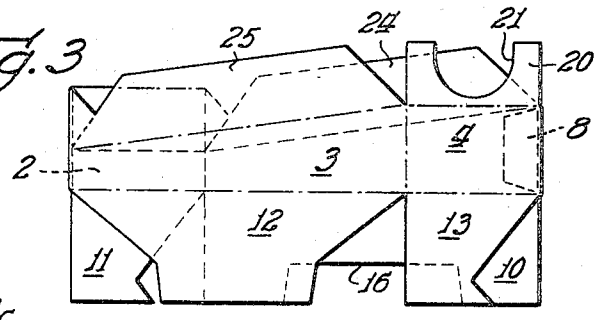


Fig. 4

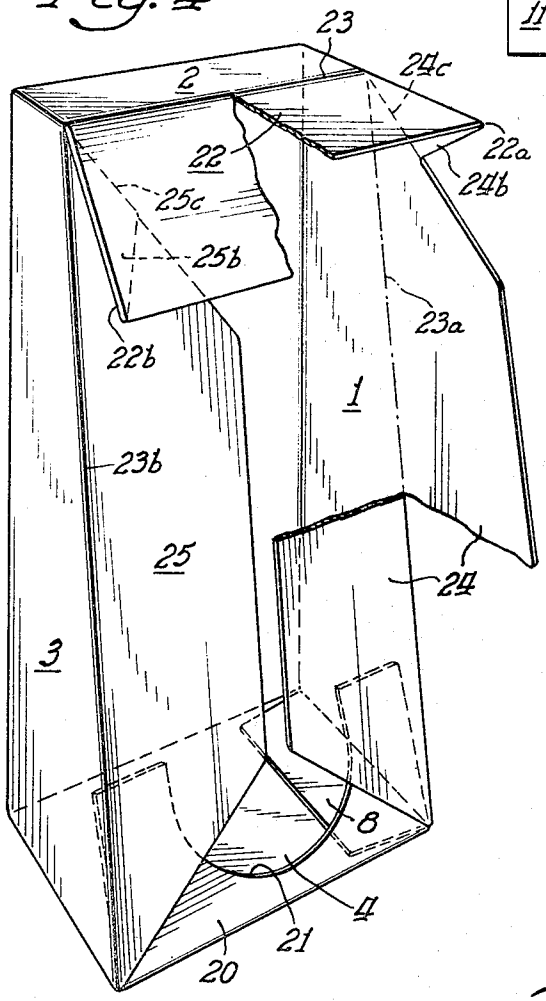
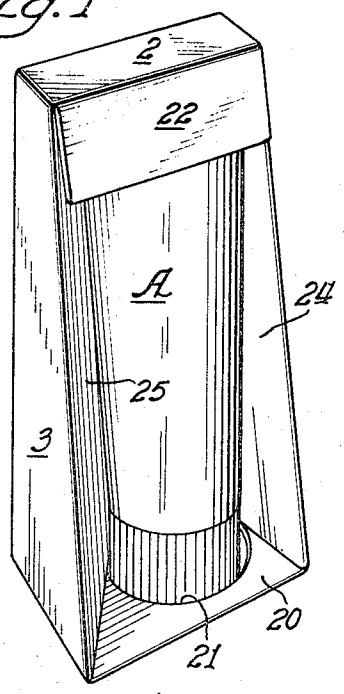


Fig. 1



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Dec. 9, 1969 T. A. MASON 3,482,678

SHADOW BOX DISPLAY

Filed Aug. 26, 1968 2 Sheets-Sheet 2

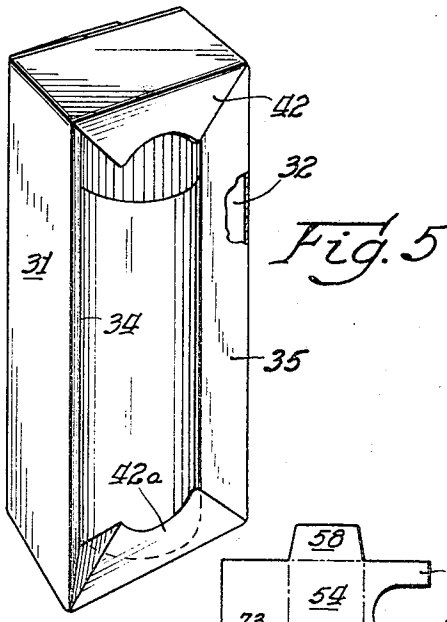


Fig. 5

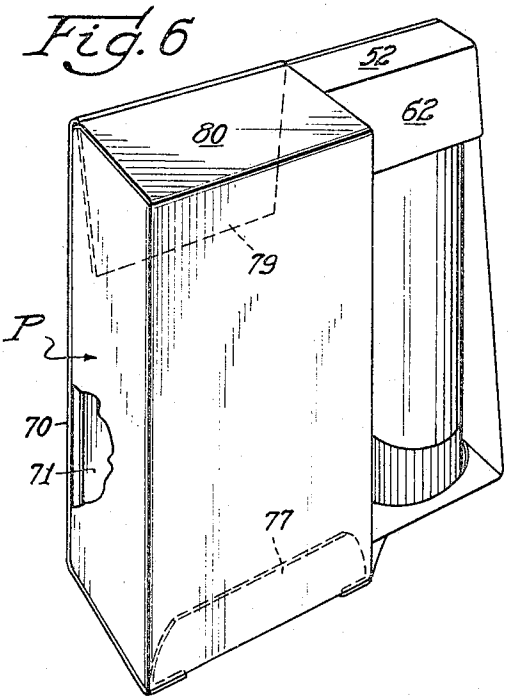


Fig. 6

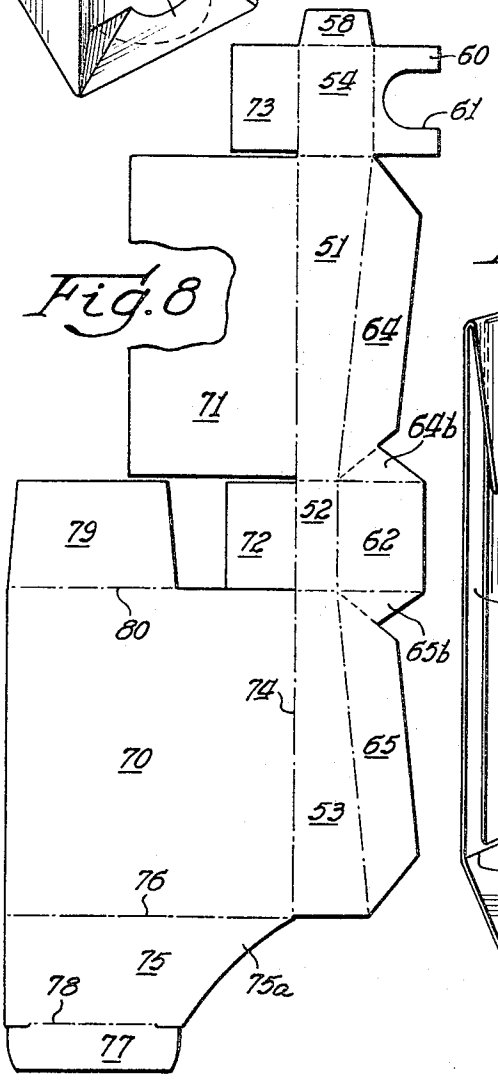


Fig. 8

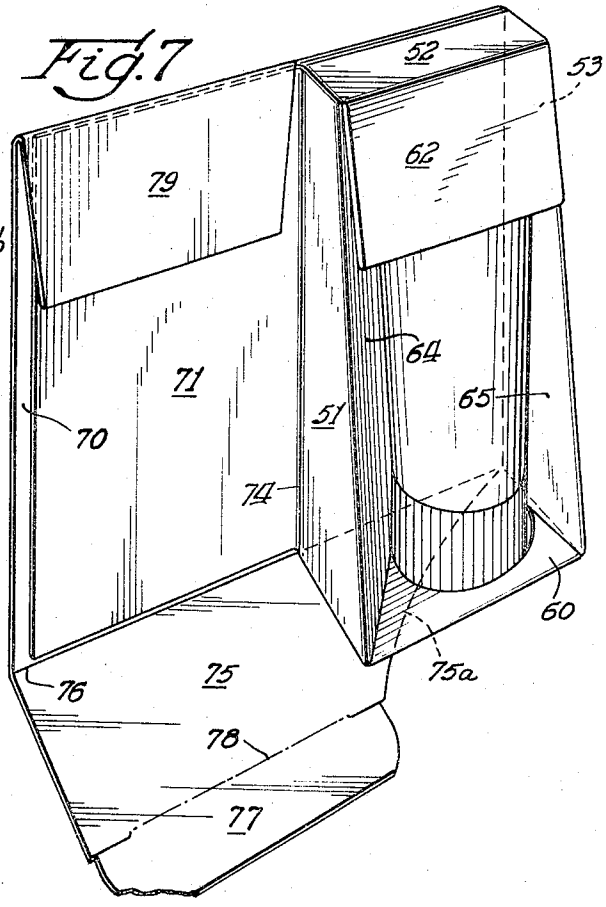


Fig. 7

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SHADOW BOX DISPLAY

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Int. Cl. B65d 5/50
U.S. Cl. 206—45.14 6 Claims

ABSTRACT OF THE DISCLOSURE

An open face display carton for elongated articles of generally cylindrical shape. The carton has four connected side walls and a rear closure. At the front of the carton, hinged to opposite side walls, are narrow, inwardly foldable panels which, when infolded, remain in contact with the sides of the contained article. Transverse flaps on the other opposed walls are joined at their ends by integral gussets to the adjacent ends of the inwardly foldable panels, so that such panels, when inwardly folded, will hold the transverse panels in article-retaining position.

This invention relates to a type of display carton formed of foldable sheet material, such as paperboard, for holding and displaying an elongated article such as a bottle or tube. More particularly, the invention relates to an open face display carton of generally rectangular form within which the article may be placed and held in display position by foldable panels carried on the free edges of the carton side walls.

Cartons, commonly known as shadow boxes, have been popular for holding and displaying in a three-dimensional manner three dimensional articles. A typical carton for this purpose has the general appearance of a shallow, elongated tray which can be set upright on its narrow end to display an elongated bottle or tube through the open side of the tray which is, in effect, the front of the display carton. The carton includes suitable panels or flaps to retain the article in the desired display position.

Certain styles of this type of carton have been made from blanks providing a single-panel back or bottom, having side and end walls hinged thereto, one or more of which will carry structure which forms the retention means for the article. Other styles have been made in the general form of a relatively thin, elongated tube in which one of the broad panels forms the back of the display and the opposite broad panel is suitably cut both to form the front and to provide flaps or other portions to retain the articles. This elongated tube style of shadow box has an advantage over the basic tray style for the reason that it can be rapidly handled on automatic, high-speed carton set-up equipment.

The carton of the present invention has the general form of a tray in which the side and end walls are connected in tubular form and the bottom or back of the tray is formed from panels or flaps carried by the side and end walls. The opposite edges of the side and end walls carry foldable panels to give a finished appearance to the front of the display and to retain the packaged article.

An object of the invention is to provide a simple and inexpensive display carton having the general form of a tray with interconnected side and end walls which carry cooperating bottom or back forming panels and also carrying front forming panels for display of the article, such carton being adaptable for rapid setting up and loading on high-speed automatic equipment, and also being adapted to be easily and quickly set up and loaded entirely by hand operation.

Another object is to provide a display carton in which the walls are provided with cooperating foldable flaps or panels some of which are held inwardly folded by the presence of the displayed article and others are held in position to retain the article within the carton.

A further object of the invention is to provide a display carton having generally the form of a tray with an open front or top to receive the displayed article, and having supplemental panels carried by the display carton structure to retain a companion package in a relatively rigid and secure manner at the side of the display package.

Additional objects and advantages of the invention will become apparent as the description proceeds.

In the drawings:

FIGURE 1 is a perspective view of the complete package;

FIGURE 2 is a plan view of a suitable blank from which the carton may be formed;

FIGURE 3 is a view of the carton in its collapsed, tubular form;

FIGURE 4 is a perspective view on an enlarged scale of the front of the carton prior to reception of the article to be retained and displayed;

FIGURE 5 is a perspective view of a somewhat modified form in which the top and bottom article retaining means are substantially alike;

FIGURE 6 is a perspective view of a modified form in which a companion package is secured at one side of the open face display package;

FIGURE 7 is a perspective view of the construction shown in FIGURE 6 but with the companion package removed; and

FIGURE 8 is a plan view on a small scale of a suitable blank for forming this modified form of the invention.

For convenience of understanding, the carton will be described as being in upright position, as shown in FIGURES 1 and 4, with the elongated side walls disposed vertically and with the carton resting on one of the shorter side walls, such walls, for convenience, being sometimes referred to as upper and lower end walls. The carton is made in the form of a tray and the parts which would otherwise be referred to as forming the bottom closure will be termed the rear or back of the carton.

Referring to FIGURE 2, the blank is cut and crease scored to provide four connected side walls **1**, **2**, **3** and **4**. The walls **1** and **3** are elongated and form the vertical sides of the carton while the walls **2** and **4** are shorter and form the upper and lower ends of the carton. Walls **1** and **2** are hinged together along fold line **5**. Walls **2** and **3** are hinged along fold line **6** and walls **3** and **4** are hinged along fold line **7**. An attaching flap **8** is hinged to wall **1** along fold line **9**. As herein shown, the side wall **4**, forming the lower end of the carton, is wider than wall **2** which forms the upper end or top of the carton, and walls **1** and **3** are tapered to conform with the end edges of walls **2** and **4**.

The back closure of the carton may be of any desired construction. As herein shown, this closure is of conventional form and is provided by cooperating flaps **10**, **11**, **12** and **13**, hinged respectively along fold line **14** to the edges of walls **1**, **2**, **3** and **4**. By first folding flap **10** to closed position and next folding flaps **11** and **13** against flap **10**, the rigid tongue **15** of flap **12** may be depressed to bear against the previously folded flap **10**. Then, by continuing to depress the flap **12**, the other three flaps will be depressed thereby and the tongue **15** will snap past the edge **16** of the wide notch **17** formed in the outer free edge of the flap **10**. Upon relieving the pressure on the flap **12**, all of the flaps will tend to return toward their original positions, but will be prevented due to the contact of the rigid tongue **15** against the inner face of flap

10 and contact of the free ends of flaps 11 and 13 against the inner face of flap 12.

It is obvious that variations in the rear closure may be employed. As an example, the rear closure flaps may be suitably connected by gusset fold elements and folded inward prior to securing the walls in collapsed tubular form, thus providing an automatic set-up construction in which the rear closure flaps will be swung to closed position by the operation of expanding the walls to rectangular shape.

Flap means are preferably employed for retention of the upper and lower ends of the displayed article, indicated at A in FIGURE 1 as an elongated bottle or tube.

As shown in FIGURES 1 to 4 the lower end of the displayed article may be retained by an inwardly foldable flap 20 notched at 21 to conform to the lower end of the article.

For retention of the upper end of the article a flap or panel 22 is hinged to the edge of upper wall 2 along fold line 23. Inwardly foldable side panels 24 and 25 are hinged to side walls 1 and 3, respectively, along fold lines 23*a* and 23*b* which meet the opposite ends of fold line 23. The opposite ends of panels 24 and 25 may be cut angularly as indicated, and the angular edges 24*a* and 25*a* adjacent the panel 22 terminate at the point where they meet triangular gusset panels 24*b* and 25*b* hinged to the ends of panel 22 along fold lines 22*a* and 22*b*. The gusset panels are also hinged to the ends of panels 24 and 25 along fold lines 24*c* and 25*c* which, as herein shown, may be aligned with the angular cut ends of panels 24 and 25, if desired.

The width of the panels 24 and 25 may vary, but such width is chosen so that the panels will be held securely in rearwardly infolded position by the article when in position within the carton. It is important that the width of the panels 24 and 25 is made sufficient to prevent them from swinging outward while the article remains in place. As will presently be explained, the infolded panels may be formed of such width as to enable them readily to snap past the curved sides of the article when previously placed in position within the carton.

With the carton set up as illustrated in FIGURE 4, the flap 20 is first folded inward, after which the panels 23 and 25 are swung to preliminary positions extending across the front of the carton. The folding of panels 24 and 25 causes retaining panel 22 to swing partially toward its retaining position due to the gusset fold connections. The carton is then ready to receive the article. The article may be brought into place by inserting the upper end inside or beneath the partially folded panel 22 and against the surfaces of panels 24 and 25, and then swinging the lower end of the article inward until the article is brought to final position parallel with the rear closure structure. This causes the side panels to swing closer to the side walls 1 and 2 and causes panel 22 to be drawn by the gusset fold connections so that the panel 22 will be disposed substantially in the plane defined by the front edges of walls 1 and 3, as shown in FIGURE 1, and will thus serve to retain the upper end of the contained article.

The angles between the fold lines 22*a* and 24*c*, and fold lines 22*b* and 25*c*, defining the edges of the gusset elements, will be suitably varied dependent upon the final angles to be assumed by the infolded panels 24 and 25 with respect to their attached side walls.

The notched opening 21 in the flap 20 will receive the lower end of the article when it has been brought to final position.

The length of the carton, measured between the walls 2 and 4, is preferably determined by the length of the contained article so that the lower end of the article will somewhat depress the flap 20 when the article is being inserted and so that the forward edge portion of the notch 21 will snap into article-holding relation when the article is in its final position.

The article may readily be removed by forcing the infolded panels apart when grasping the article and then simply pulling the article from the carton. The upper end will engage the retaining panel 22 and cause it to swing upward as the article swings away from the carton. The article may then be lifted so that its lower end can be removed from engagement within the notched flap 20.

It is to be noted that the lower, angled edges of the side panels 24 and 25 remain in position over the inwardly extending flap 20 to retain it from outward displacement.

Referring to the modification, illustrated in FIGURE 5, the side walls 31 and 32 are formed with parallel sides and the top and bottom retaining panels 42 and 42*a* are formed with angled ends connected by gusset elements to the infolded side panels 34 and 35. The arrangement of the infolded positions of the side panels and the angle of the gusset edges is such that the retaining panels are drawn inward somewhat inside the plane defined by the front edges of the side walls. Also, the retaining panels may be notched to conform with the curvature of the packaged article.

In the construction illustrated in FIGURE 5 the foldable side panels 34 and 35 are made of such width as to permit their inner edges to snap past the curved sides of the contained article. Thus, in loading the article, the panels 34 and 35 may be folded so that they will be approximately in the plane defined by the edges of side walls 31 and 32. This will allow the retaining panels to remain in positions clear of the ends of the article to be loaded. Then, by positioning the article lengthwise along the panels and forcing it rearwardly, the article will somewhat depress the panels and snap past their free edges. Depression of the panels will cause the upper and lower retaining panels 42 and 42*a* to swing to their retaining position in front of the end portions of the article, and the panels 34 and 35 will be held in their depressed or inwardly swung positions by the contour of the article sides.

Referring to the modification of the invention shown in FIGURES 6, 7 and 8, this form has a display section, generally similar to the first described form, and a supplemental section for supporting a companion closed package at the side of the display section.

The blank for this form, shown in FIGURE 8, comprises four connected wall panels which are counterparts of the connected wall panels in the first form but are arranged in different order. The vertical side panels are designated 51 and 53 and the upper and lower end panels are indicated at 52 and 54. The attaching flap 58 is hinged at the edge of wall panel 54.

A lower retaining flap or panel 60, having a notch 61, is hinged on the wall 54. An upper retaining panel 62 is hinged on wall 52 and inwardly foldable front panels 64 and 65 are hinged on the walls 51 and 53. Gusset connections 64*b* and 65*b* join the opposite ends of panel 62 with the ends of panels 64 and 65. These parts are all identical with those shown in FIGURES 1 to 4.

A large panel 70 is hinged to panel 53 to form the main portion of the rear closure for the display section and part of the supporting structure for the companion package, indicated at P in FIGURE 6. A smaller panel 71 hinged to wall 51 forms an additional part of the supporting structure for the companion package. Flaps 72 and 73 on walls 52 and 54 form part of the rear closure of the display section. These flaps are foldable to lie flat against the closure forming part of the panel 70.

The panels 70 and 71 and the flaps 72 and 73 are hinged to their attached walls along a common fold line 74.

The panel 70 has a bottom supporting panel 75 hinged thereto along fold line 76. The panel 75 has a tuck flap 77 hinged thereon along fold line 78. The panel 75 has an extended portion 75*a* arranged to extend beneath the bottom wall 54 of the display section.

An upper tuck flap **79** is hinged along fold line **80** at the upper edge of the panel **70**.

The attaching flap **58** is secured to the free edge of vertical wall **53** at the box factory and the carton is supplied to the user in the form of a collapsed tube.

The carton for the companion package is conventional and preferably constructed as a so-called reverse-tuck style carton in which the tuck flap at one end of the carton is inserted along the inside surface of one main panel and the tuck flap at the opposite end is inserted along the inside surface of the opposite main panel.

In assembling the construction of this modified form the side walls are brought to expanded condition and panel **71** is swung outward of wall **51** to the position shown in FIGURE 7. The panels **72** and **73** are then folded across the rear of the carton and panel **70** is folded to lie over panels **72** and **73** and in rear closing position. This brings panel **70** against panel **71** as shown. Flap **79** is then folded forwardly and downwardly to overlie panel **71**. The companion carton may then be place flat against panel **71** with the carton top closure panel **80** placed so that its tuck flap (not shown) is adjacent the panel **70**, and the companion carton is then slid upwardly, causing the flap **79** to enter alongside the tuck flap at the edge of top panel **80**. This brings the bottom end of the companion carton into approximate alignment with the lower edges of the panels **70** and **71**. The panel **75** is then swung upward toward the bottom panel of the companion carton and the tuck flap on panel **75** is folded upward and inserted into the carton alongside the tuck flap on the bottom end closure of the carton.

Either before or after the companion carton is secured to the display carton the article to be displayed will be secured in place as explained in the first described form of the invention.

The extension **75***a* of the panel **75** assists in providing a relatively rigid connection between the display section and the companion package.

While only specific embodiments of the subject invention have been disclosed, it will be understood that additional modifications can be made therefrom. Accordingly, it is desired that the invention be limited only by the claims hereinafter following.

I claim:

1. A rectangular paperboard carton, adapted for upright display of an elongated article such as a bottle or tube, comprising:

(a) relatively narrow side and end wall panels joined at their ends in tubular form to provide the sides and ends of an elongated tray-like construction which may be positioned upright on one of the end wall panels;

(b) closure means for the rear of the carton;

(c) a narrow panel hinged along the front edge of each of the opposite side walls and arranged to be folded inwardly through an angle of more than 90° from the planes of such side walls, whereby the panels, when so folded, may engage the opposite sides of a contained article thereby to hold the panels in such inwardly folded positions;

(d) a transverse, article-retaining panel hinged to an end wall and adapted to be swung into position to overlie an end portion of the contained article;

(e) means for connecting the transverse panel to the adjacent ends of the inwardly foldable narrow panels on the side walls to hold the transverse panel in article-retaining position; and

(f) said means for connecting the transverse panel to the inwardly foldable panels comprising gusset elements joining the ends of the transverse panel to the respective adjacent ends of the inwardly foldable panels, whereby inward folding of such panels will draw the transverse panel to a position overlying the contained article.

2. The invention as defined in claim **1** wherein the inwardly foldable panels hinged on the side walls are sufficiently narrow to enable their free edges to snap past opposite sides of a cylindrical article disposed lengthwise and centrally of the carton and generally parallel to the carton side walls, whereby the contained article will maintain the foldable panels in place and such article will be held from outward displacement by the transverse panel.

3. The invention as defined in claim **2** wherein an additional transverse, article-retaining panel is hinged to the opposite end wall and such additional transverse panel is connected at its ends by gusset elements to the adjacent ends of the inwardly foldable side wall flaps.

4. A rectangular paperboard carton, adapted for upright display of an elongated article, such as a bottle or tube, combined with support means for a companion rectangular carton, comprising:

(a) relatively narrow side and end wall panels joined at their ends in tubular form to provide the sides and ends of an elongated tray-like construction which may be positioned upright on one of the end wall panels;

(b) panel means associated with the front edges of the side and end walls for retention of an article within the carton;

(c) a first panel hinged to the rear edge of one side wall, said panel being foldable outwardly of the carton to lie in an extension of the plane defined by the rear edges of the side walls; and

(d) a second panel, adapted to provide a combined closure and support means, hinged to the rear edge of the opposite side wall, said panel being foldable to a position to form a rear closure for the carton and having a sufficient extent beyond the edge of the carton to overlap the outwardly folded first panel,

(i) said second panel including flap means for supporting engagement with a companion carton arranged flatwise on the first panel.

5. The invention as defined in claim **4** wherein the flap means on the second panel is adapted for retention of a companion carton of reverse tuck style, and comprises:

(a) a first flap on one edge of the second panel which is adapted for reception within a tuck-flap receiving opening of such a companion carton with the adjacent wall of such carton disposed flat against the first panel;

(b) a second flap on an opposite edge of the second panel which is foldable outwardly to engage the end of such a companion carton,

(i) said second flap having on its outer free edge a hinged tuck-flap for insertion into the diagonally opposite tuck-flap receiving opening of such companion carton.

6. The invention as defined in claim **5** wherein the second flap on the second panel has an extended portion of generally triangular shape extending from a point adjacent the end of the hinge connection of the second panel with its attached side wall to a point adjacent the end of the hinge connection of tuck-flap with the second flap, whereby such extended portion is adapted to be disposed in close relation to the lower end wall panel of the display to increase the rigidity of the construction.

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