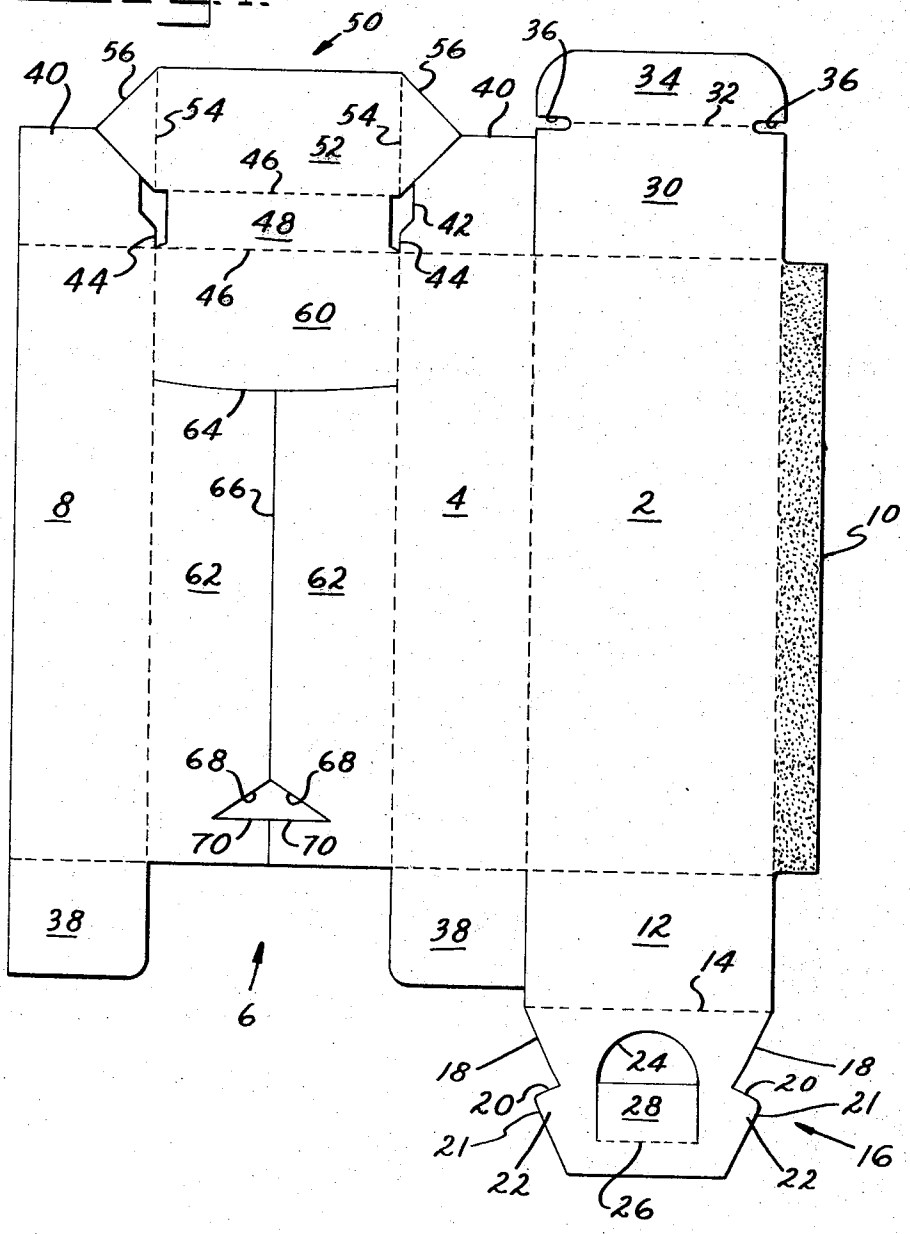
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DISPLAY PACKAGING CARTON

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Fig. 1.



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Fig. 2.

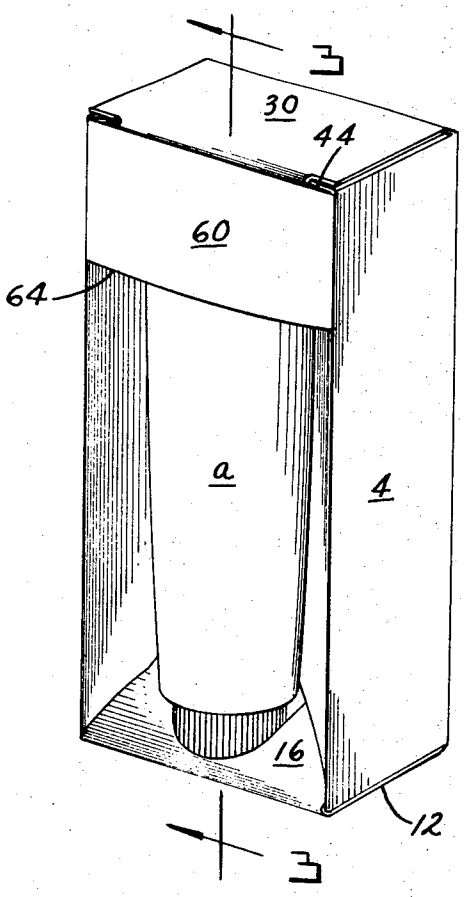


Fig. 3.

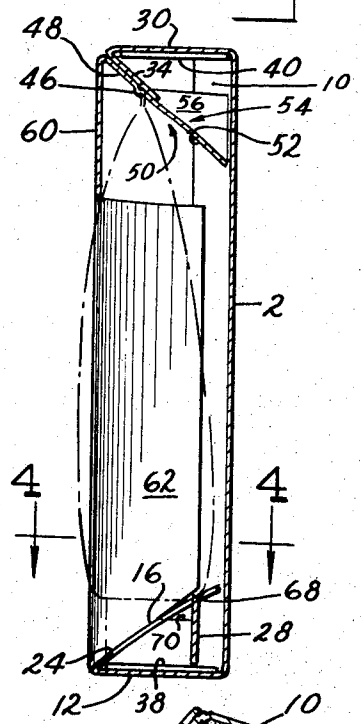


Fig. 4.

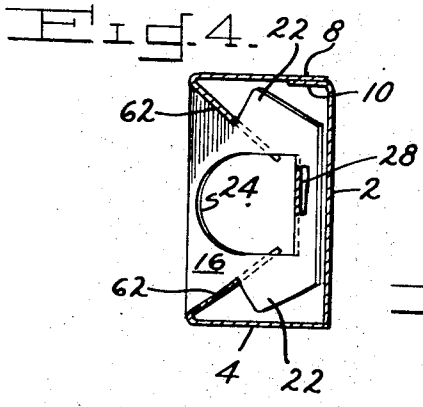
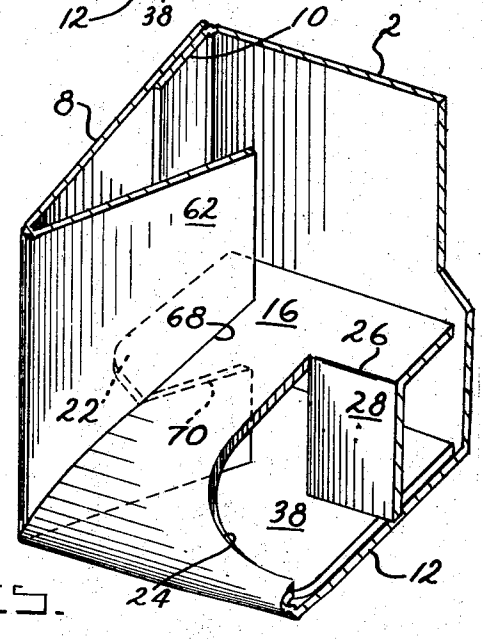


Fig. 5.



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Fig. 6.

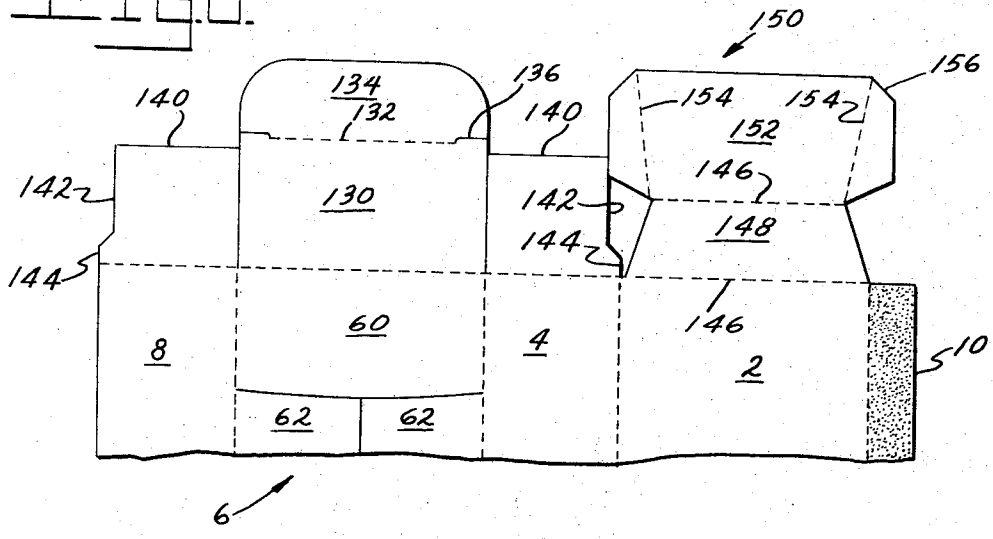


Fig. 7.

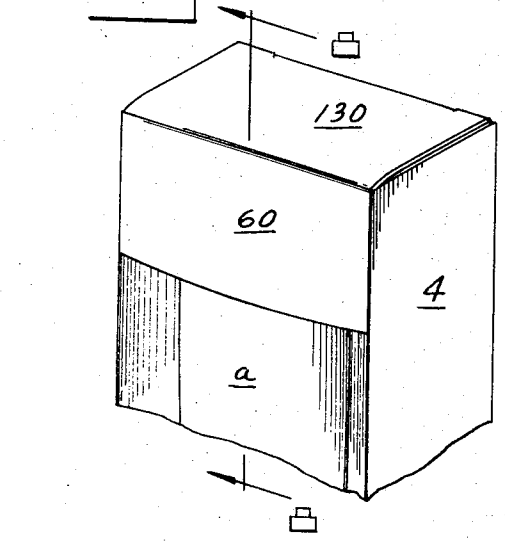
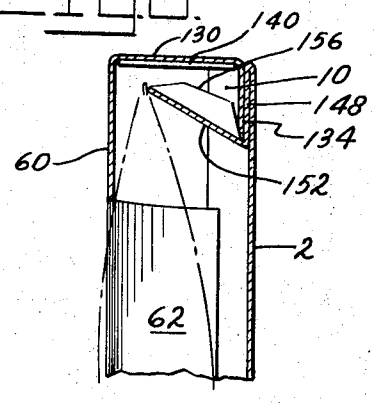


Fig. 8.



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DISPLAY PACKAGING CARTON

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10 Claims. (Cl. 206—45.14)

ABSTRACT OF THE DISCLOSURE

A squeeze tube display carton formed by a one piece blank with four body panels having a shadow panel front opening and flat front section. At one end a back panel end extension provides an end closure panel and an apertured end shadow panel, the latter interlocking with and positioning the side shadow panels of the front opening. At the other end behind the flat front section an end extension projecting from the end edge of either the front section or the back panel is folded interiorly to positionally pocket one end of the squeeze tube, a conventional end closure panel and tucker flap extending from the other end edge.

Background of the invention

The field of this invention relates to the art of display receptacles particularly for articles such as capped squeeze tube dispensing containers and the like. It further relates to a one piece, folded blank construction by which a carton body is formed, the front panel providing a display opening in which interiorly angled side shadow panels form a background for the opening. The opening also has at a first end an angular end shadow panel in which one end of a tubular article is supported and positioned. From the other end of the opening a flat front wall section extends to the end of the carton body, and behind this wall the other end of the displayed article is supported and positioned by extending flap means swung inwardly either from the outer edge of the front wall or from the outer edge of the back panel.

At the first end of the opening the end closure panel construction of the receptacle includes the end shadow panel. At the opposite or other end, an end closure and tucker flap of conventional form extends from that end edge opposite the edge carrying the article supporting flap means.

Insofar as we are aware prior art display receptacles of the type herein disclosed have usually been formed from relatively complex carton blanks, as shown for example in Patent No. 3,252,566, granted to the assignee of the present application on May 29, 1966. As compared to such examples in the art the present invention reduces the size of the blank from which a carton is formed, reduces the number of operations required to assemble the completed carton, and in particular simplifies the loading of an article to be displayed in the carton without requiring a high degree of precision and accuracy especially in mechanism for machine loading.

With respect to the assembled condition of the carton the side shadow panels of the front opening are positionally secured by an overlying and interlocking notched engagement of the end shadow panel of the opening. The end shadow panel is supplied by a extension of the end closure of the carton at the adjacent carton end. At the opposite end of the carton simple extensions of the front and rear body panels, respectively, form an interior positioning flap and an end closure assisting the same in the positioning action. This simplified construction forms a display carton in which a capped tubular article can be loaded and unloaded with extreme ease in contrast to any prior construction known to us.

Summary

This invention is directed to a one piece carton having a front display opening, the blank of which is divided into four main body panel sections to the ends of which are joined the usual dust flap and end closure panel extensions. One closure panel is extended to form for the front opening an apertured end shadow panel which has notched ears for an interlocked positioning with notches in side shadow panels cut in the front panel. The other end closure panel is conventionally formed with a tucker flap and may be joined either to the end edge of the back panel or the end edge of a flat wall section of the front panel. An extension joined to the end edge opposite that carrying the end closure panel provides an interior pocket for supporting the adjacent end of a tubular article in properly supported relation in the carton. Preferably this end is forwardly supported to enhance the display of the tube in the paneled opening.

Drawings

FIG. 1 is a plan view of a single piece blank of this invention from which a display carton assembly may be formed;

FIG. 2 is a perspective view of an assembled carton and capped squeeze tube article displayed therein;

FIG. 3 is a vertical sectional view as on line 3—3 of FIG. 2;

FIG. 4 is a transverse sectional view as on line 4—4 of FIG. 3;

FIG. 5 is an enlarged fragmentary perspective of one corner of the carton end assembly illustrated in FIG. 4;

FIG. 6 is a plan view, similar to FIG. 1, of one end of the single piece blank and having an alternative arrangement of the article supporting flap means at that end;

FIG. 7 is a view, similar to FIG. 2, showing the end assembly as formed from the blank of FIG. 6, and

FIG. 8 is a sectional view, similar to FIG. 3, showing the assembled position of the alternative supporting flap construction.

Referring to FIG. 1 the outer faces of the walls or panels of the body of a one piece blank are shown, the end closure and other portions being joined thereto along the end fold lines as indicated. A rear or back panel is at **2**, one side having joined thereto, in the order named, a first side panel **4**, a front panel indicated by arrow **6** and a second side panel **8**. A narrow glue panel **10** is at the other side of panel **2**. These four panels form the body of the carton and are assembled by bending along the parallel fold lines indicated. They may be joined as best shown by FIG. 4 with glue panel **10** affixed to the inner surface of the second side panel **8**.

At each end of the back panel **2** is an end closure panel of the carton. At the lower end in FIG. 1 is the panel **12**. At the outer edge of panel **12** and joined along the crease line **14** is an apertured flap extension indicated as a whole by numeral **16**. The side edges of extension **16** from the outer corners of panel **12** are first convergent as at **18**, then sharply divergent in substantially perpendicular relation as at **20**, and then convergent as shown at **21** to the outer end thereof. This formation provides the notched ears **22** at each side of the extension.

In extension **16** is an aperture formed at one side with a semi-circular edge as at **24**. In the assembled carton position, edge **24** is the front edge. The rear edge is shown as at the straight crease line at **26**. Crease **26** indicates the base of a tongue **28** cut from the opening for a purpose to be later explained.

At the upper end of panel **2** in FIG. 1 is the end closure panel **30**. Panel **30** terminates at a crease line **32** with end tucker flap **34** of conventional form being joined

thereto. At opposite ends of crease line 32 are lock tab notches 36.

Referring now to side panels 4 and 8 end dust flaps 38 of conventional construction are shown at the lower edges. At the top of these panels are dust flaps 40 having offset edges as at 42 which provide lock tabs indicated at 44 for cooperating with the notches 36 of the tucker flap 34.

At the top of the front panel is an extension indicated generally by the numeral 50. It is divided into two sections, an inner portion 48 defined between the crease lines 46 and an outer portion 52. Crease lines 54 at each side of the outer portion 52 define a pair of eared or wing portions at 56. The lateral edges of the inner portion 48 are of less than width than the width of the front panel for clearance purposes as will be later described.

Front panel 6 at the top in FIG. 1 has a flat front wall panel section 60. The lower edge of wall 60 is defined by the transverse cut line at 64. A pair of side shadow panels 62 is cut for the front opening along the center line at 66. In the facing edges of the side shadow panels are registered V-shaped notches 68 adjacent the lower ends thereof. These notches are preferably, as shown, provided with lower edges 70 parallel to the lower edges of the shadow panels 62.

As will be appreciated the blank is cut in flat form as shown by FIG. 1 with the crease lines formed in suitable manner. When glue panel 10 is attached along the inside edge of side panel 8, the box is preferably in flat collapsed form being folded at diagonally opposite edges (as at the back corner of panel 8 and at the fold line between panels 4 and 6) for storage and shipment purposes. The end extensions of the panels in such a case may thus extend therefrom in flat planar relation. Preferably, however, for purposes to be later explained, the extension 50 at the top of panel 6 is first turned inwardly of the fold line 46 at the upper edge of wall 60 before the attachment of glue panel 10. Extension panel 50 in collapsed condition then lies inwardly against the rear face of wall 60 (the right hand ear 56 being folded along line 54 against the fold between panels 6 and 4).

In assembling the carton the body panels are first brought into a rectangular cross sectional relationship (as best illustrated by FIG. 4) and the panel extensions at ech end may be assembled as follows.

At the lower edges the dust panels 38 are turned at right angles and end closure panel 12 is brought against that end for extension 16 to be turned upwardly and inwardly at the lower edge of the opening. As the extension 16 is pressed inwardly against the side shadow panels 62 the ears 22 will slide over the outer faces thereof until they snap into place in the V-shaped notches 68 of panels 62. This snap-locking engagement may be readily appreciated from the showing of FIG. 5. Thus the extension 16 forms an end shadow panel for the opening. It will be noted that a snug fit is insured by the inherent tendency of the side panels 62 to return outwardly and the end shadow panel 16 to do likewise.

At the upper end and with reference to FIG. 3, the flap extension 50, which was previously described as being first inserted interiorly of the top end of the body of the carton, is, first of all, pushed to some extent towards the back panel 2 by reason of the side shadow panels 62 being rearwardly urged when the lower shadow panel 16 is snap-locked into place. That is to say, the upper cut corners of panels 62 bear against the lower edge of panel 50 at the marginal edge portions of portion 52. Thus the portion 52 is carried in the direction of panel 2, flap 50 being longer than the height of wall 60. Ears 56 by frictional engagement against the inner surface of side panels 4 and 8 serve to yieldably hold the position of flap 50 in any position to which the flap is thus urged.

Dust flaps 40 may at this stage be turned inwardly and the end closure panel 30 brought forwardly for tucker flap 34 to be inserted behind the inner portion 48 of flap 50. Latch tabs 44 (FIG. 2) are caught in notches 36 and the assembly at this end is completed.

With the box formed as described an article *a* as a capped squeeze tube with transversely sealed end (FIG. 2), can be readily inserted by sliding the sealed end up into the pocket formed behind the front wall 60 by flap 50. This may be done against the yieldable resistance of flap 50 pushing this flap still further rearwardly towards panel 2 without causing wall 60 to be bowed forwardly. Flap 50 having the intermediate fold line 46 will yield more readily than wall 60. The position shown by FIG. 3 may thus be established with the ears 56 holding the flap more or less snugly while the capped end is carried rearwardly across the edge 24 of panel 16 at the other end and slightly above the same. When registered with the aperture of the shadow panel 16 the cap may be dropped into place and snugly held there by the now downwardly urged tongue 28. At the upper sealed tube end the positioning flap 50 maintains this end forwardly. In such position the tube is in contact with the lower front edge of the front wall 60 and the side shadow panels 62 are held against the rear sides of the tube by the inherent tendency of the panels to resist rearward pressure.

Alternatively, assembly of the box at the top end (referring to FIG. 3) may be as follows. Flap 50 is longer than the depth of the box between front and back panels and is provided with the intermediate fold line 46. It therefore might be left to extend outwardly of the upper end in the collapsed condition (as in the case of panel 30). In this event the assembly of the top end may be accomplished first by inserting the flap 50 inwardly allowing portion 52 to bend along the line 46 (see FIG. 1) so that the outer edge may be turned downwardly. In pressing this edge down into the carton interior the ears 56 will also turn upwardly along crease lines 54. Thus the extension 50 may ultimately be brought to rest substantially in the position shown by FIG. 3. The free edge of outer portion 52 will lie in close relationship to the inside face of the back panel 2 and ears 56 will serve as bracing means for maintaining approximately the angular relationship shown. This forms a triangular pocket behind the front wall portion 60. The dust flaps 40 and closure end panel 30 may then be assembled and the tube *a* inserted generally in the manner above detailed.

In FIGS. 5, 6, and 7 an alternative arrangement is shown of the flap means for supporting the transversely sealed end of the tube behind the wall 60. In this arrangement the flap support is formed by an extension 150 joined to the edge of the back panel 2 while the end closure panel 130 with tucker flap 134 is joined to the outer end edge of the front panel wall section 60.

The fold line between portions 130 and 134 is at 132 having at each end the offset lock tab slits at 136, these latter cuts being provided to function with tabs at 144 of the dust flaps 140 in the same manner as previously described in connection with the elements 36 and 44 of the blank of FIG. 1.

The extension 150 is divided by crease line 146 to form an inner portion 148 with converging side edges for clearance purposes, and an outer portion 152. Portion 152 has eared or wing portions at 156 defined by the angled fold lines at 154.

The blank of FIG. 6 is assembled into carton form by glue flap 10 as previously described. In this form, however, both extension 150 and panel 130 are adapted to be left in an outwardly extending relation until article *a* is inserted in place. As described above the loading of the carton of FIGS. 1–5 was accomplished by inserting the tube through the display opening. This is known as a "top loading" operation. The carton of FIGS. 6–8, on the other hand, is particularly adapted for an "end loading" operation. Here the tube may be inserted through the open end prior to completing the end assembly of the extension 150 and closure panel 130.

With reference to FIG. 8, the "end loading" operation

will be described. First, it will be appreciated that the assembly at the end not shown is identical with that illustrated and described in connection with the lower portion of FIG. 3. Next, it will be appreciated (FIG. 8) that the panel **130**, extension **150**, and dust flaps **140** initially are extending outwardly to leave that end of the carton open. In this condition the tube may be inserted through the open end while the side shadow panels **62** are held out of the way and the capped end of the tube can thus slide into place in the lower end opening of end shadow panel **16** as shown by FIG. 3. The unsupported transversely sealed end of the tube may then be held in a position approximately as shown by FIG. 8 while the extension **150** is turned inwardly of the open end. In so doing the portion **148** is folded down to be disposed substantially against the back panel **2** while the outer portion **152** is carried along with it to rest with its outer edge lodged against the transversely sealed end of the tube. This establishes a supporting relation against the tube and the frictional drag of wings **156** against sides **4** and **8** serves to hold portion **152** angled upwardly toward the front wall **60** and create a pocket for positioning the tube in a desired relationship in the display opening. After the tube is thus pocketed by portion **152** the dust flaps **140** can be turned inwardly and end panel **130** closed by tucking flap **134** against portion **148**. It will be readily seen that tubes of different dimensional characteristics can easily be accommodated by shortening or lengthening the flap portion **152** for proper support.

This construction of FIGS. 6–8 is particularly adaptable as before mentioned for an end loading operation either by automatic machinery or otherwise. It will also be noted that with the end panel **130** extending from the front wall **60** that the front face of the carton contains no tuck opening at the top edge (compare FIGS. 2 and 7), thus presenting a somewhat neater and cleaner appearance than that of FIG. 2.

What is claimed is:

1. In a carton assembly for the display packaging of capped squeeze tube containers and the like, said assembly having back, side, and end panels, and a front panel in which is formed a tube display opening extending from a first end thereof to the inner edge of a flat front wall at the other end, said opening having side shadow panels cut from the plane of the front panel and bent inwardly from each side of the opening, and at said first end with a centrally apertured end shadow panel bent inwardly from the adjacent end panel;

the improvement which comprises said side shadow panels adjacent said first end of the display opening having a pair of oppositely registering V-shaped notched areas in the mating edges thereof,

the adjacent carton end panel being joined to said back panel and having an extension thereof providing said apertured end shadow panel,

said latter extension having its lateral edges converging from the outer corners of said carton end panel and then sharply divergent to form notched ears engageable behind said notched areas of said side shadow panels and securely holding the three so-joined shadow panels positionally braced by the interlocking engagement thereof at said first end of the display opening,

said assembly at its other end having

a carton end closure panel with tucker flap and

a reversely turned interiorly positioned tube supporting flap means

extending from the outer end edges of said flat front wall and said back panel,

said interiorly positioned flap means having a support portion angularly disposed relative to said front wall and forming therewith a pocket in which an end of a tube container may be engaged for bracing the same forwardly against said flat front wall with the other end of the tube being engaged by the aperture of the aforesaid end shadow panel.

2. A carton assembly construction as in claim **1**, in which,

said end closure panel and tucker flap extends from the said back panel, and

said tube supporting flap means extends from the outer end edge of the flat front wall, and is reversely bent interiorly at an inwardly directed angle to lie with its terminal free end engageable in abutting relation against said back panel at a point spaced from the adjacent end of the carton.

3. A carton assembly construction as in claim **1**, in which,

said end closure panel and tucker flap is joined to the outer end edge of said flat front wall, and

said tube supporting flap means extends from said back panel, an inner section thereof being turned inwardly and an outer portion comprising said tube engaging support portion being angularly related to said front wall toward the outer end edge thereof for pocketing the tube container end forwardly of said front wall.

4. A carton assembly construction as in claim **1** formed from a one piece blank, in which,

said back panel is at one side thereof, and a first side panel, the front panel, and a second side panel are foldably joined thereto in that order with a glue flap joining said back and second side panels,

said mating edges of the shadow panels for said display opening are cut on the center line of the front panel and the end edges thereof at said first end of the carton rest against the inside face of the end panel, and

said converging lateral edges of the end shadow panel overlie said side shadow panels at the corner end edge portions thereof, said notched ears of the end shadow panel being snap-locked into said positional bracing engagement.

5. A carton assembly construction as in claim **4** in which,

said divergent edges forming the notched ears of the end shadow panel are approximately normal to said converging lateral edges thereof for said snap-locking engagement,

and said notched areas of the side shadow panels are triangularly formed with that edge of each area adjacent said first end of the carton being substantially parallel with the end edge thereof.

6. A carton assembly construction as in claim **5** in which

the aperture of said end shadow panel is circularly formed at the front side thereof for receiving the capped end of a squeeze tube container, and

the rear edge portion of the aperture is provided with an inwardly foldable tongue yieldably receiving the rearwardly facing side of said capped end.

7. A carton assembly construction as in claim **5**, in which

said interiorly positioned supporting flap means is formed with an inner section of a width reduced from that of the outer support portion thereof and separated therefrom by a crease line,

the lateral edges of said outer support portion being provided with eared wings defined by fold lines, said wings in assembled position being turned upwardly and frictionally engaged against said end panels for stability in positionally supporting the same.

8. A foldable one piece flat blank for display cartons having

side, front, and back panels defined by parallel fold lines and a glue panel for joining opposite sides of the blank to form the body thereof,

said front panel being cut along its center line from a first end of the blank to a point spaced from the other end and at said point being cut transversely

across said panel, thereby providing a flat front wall section adjacent said other end and a pair of opposed inwardly foldable side shadow panels for forming the background of a display opening for the front panel,

the mating edges of said shadow panels having V-shaped registered notches cut therein adjacent the said first end,

said back panel at said first end of the blank having an end closure panel and a centrally apertured shadow panel extending therefrom defined by transverse fold lines for closing the end of the carton and turning the said shadow panel extension inwardly of said first end and against the edges of said front side shadow panels, said panel extension having its side edges converging from the outer corners of the end closure panel and then sharply diverging to form notched ears for a snap-lock engagement and positional interlocking relation with said V-shaped notches of the side shadow panels,

said blank at its other end having an end enclosure panel and tucker flap with a fold line therebetween, and

a tube positioning and supporting means having an inner portion and an outer portion with a fold line therebetween, the outer portion having fold lines defining lateral edges thereof and provided outwardly of the latter fold lines with a pair of eared wing portions,

said wing portions frictionally engaging the side walls when said outer portion is turned inwardly of the adjacent end of the carton on assembly of the same, whereby one end of a displayed article may be pocketed by said outer portion forwardly of an assembled carton with the other end positioned by the apertured lower shadow panel,

said end closure panel and supporting flap means being foldably joined to the end edges of the back panel and front wall section.

9. The blank of claim **8** in which said end closure panel is joined by a fold line to said back panel.

10. The blank of claim **8** in which said end closure panel is joined by a fold line to said front wall section.

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