March 1, 1960 W. M. STRANGE 2,926,831

INFOLD CARTON WITH CORNER BRACING STRUT

Filed Aug. 30, 1957

FIG. 1

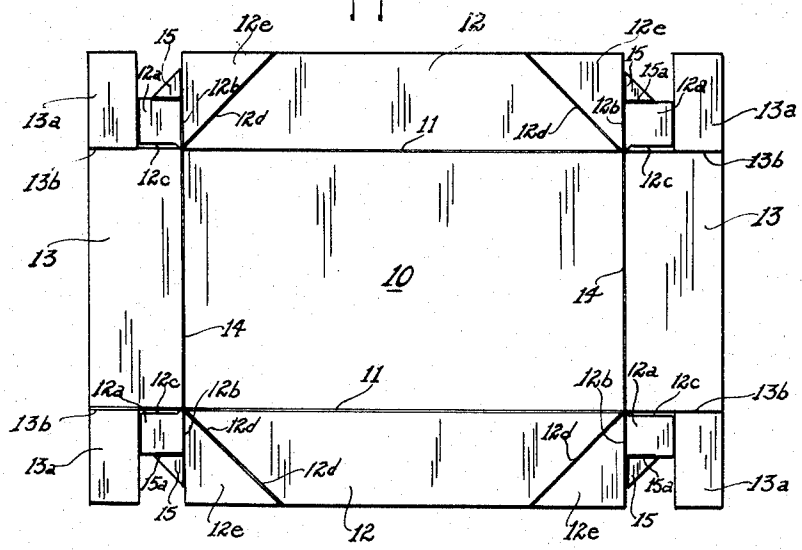


FIG. 2

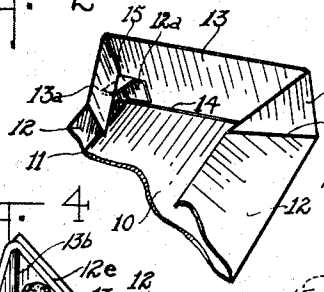


FIG. 3

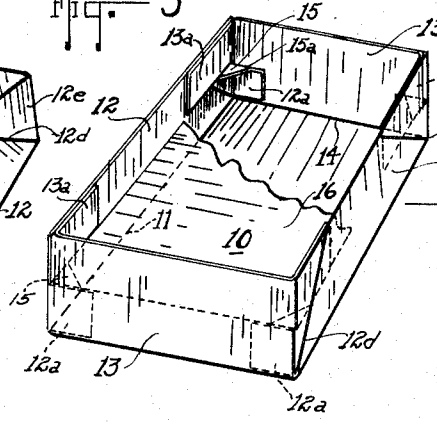


FIG. 4

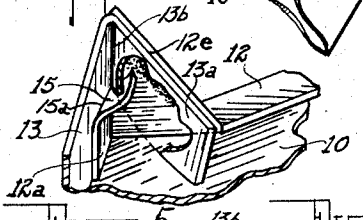


FIG. 5

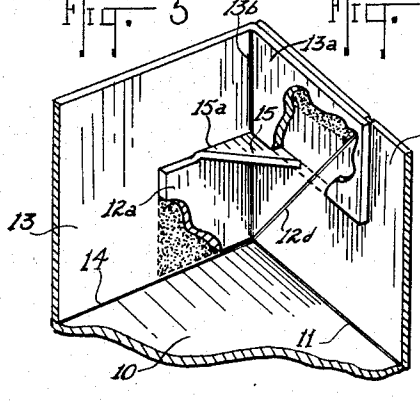


FIG. 6

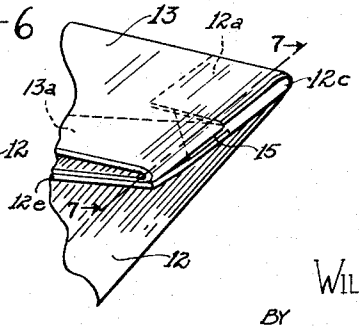
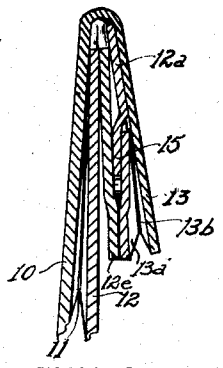


FIG. 7



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INFOLD CARTON WITH CORNER BRACING STRUT

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3 Claims. (Cl. 229—32)

This invention relates from the general aspect to infold cartons and more particularly to an infold carton having a corner bracing strut extending diagonally across the corner in substantially horizontal position.

Infold cartons have in the past been developed which have attempted to prevent collapsing of the corners thereof although for the most part these have not proved to be satisfactory. In the present invention I have provided an infold type carton which enables the manufacturer to produce imperforate bottom and side walls and yet will produce positive means for holding the corners in fully expanded relation.

It is an object of my present invention to provide an infold type carton wherein a bracing strut disposed entirely within the carton is provided to securely and positively retain the sides of the carton in upstanding relation.

More specifically it is an object to provide an infold type carton wherein a pair of corner anchoring flaps are provided on the respective sides and ends and wherein a bracing strut is integrally formed in connection with one of said flaps and underlies the other flap in sliding relation thereto when in collapsed position but snaps out into substantially horizontal bracing position when the carton is initially opened.

These and other objects and advantages of my invention will more fully appear from the following description, made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

Fig. 1 is a top plan view of a blank from which my new carton is constructed;

Fig. 2 is a fragmentary perspective view showing the sides in partially collapsed position;

Fig. 3 is a perspective view showing the tray of a carton in fully expanded operative position;

Fig. 4 is a fragmentary perspective view showing a carton corner in partially collapsed position;

Fig. 5 is an enlarged fragmentary perspective view showing a carton corner held in fully expanded operative position;

Fig. 6 is a fragmentary perspective view of a carton corner in collapsed position; and

Fig. 7 is a vertical sectional view taken substantially along the line 7—7 of Fig. 6.

As illustrated I provide an infold tray type carton having a bottom panel **10** with a pair of spaced apart parallel fold lines **11** formed along the sides edges thereof. A pair of carton sides **12** are integrally formed with the bottom **10** and are hinged thereto along said fold lines **11**. A pair of carton ends **13** are also integrally formed with said carton bottom **10** and are hinged thereto along fold lines **14**.

A pair of anchoring flaps **13***a* extend outwardly from the ends of end panels **13** and are hinged thereto along the fold lines **13***b*. These flaps **13***a* are in the form shown disposed only adjacent the upper portion of said end flaps **13** and a pair of side anchoring flaps **12***a* are

formed from the sheet material between the ends of the side panels **12** and the lower edges of flaps **13***a* and are hinged to the lower end portions of the respective side panels along the fold line **12***b*. A bracing strut **15** is integrally formed with the upper edge of each flap **12***a* and is hinged thereto along a fold line **15***a*. The lower edge portion of the flap **12***a* is cut away as indicated at **12***c* of Fig. 1 to prevent bunching at the corners when the carton is in folded collapsed position.

A pair of diagonal fold lines **12***d* extend from the respective corners of the bottom panel **10** across the ends of said side panels **12** at substantially 45° to the fold lines **11** thus forming generally triangular attachment portions **12***e* to which the flap **13***a* is securely adhered along the upper marginal portion thereof as best shown in Fig. 5. The lower marginal portion of the flap **13***a* must be free and unattached with respect to the side panel **12** to permit the triangular bracing strut **15** to be slidably received thereunder when in collapsed position as best shown in Figs. 6 and 7.

The attachment or anchoring flaps **12***a* is of course secured to the inside of the adjacent end **13** as by being glued thereto and the bracing strut **15** integrally connected with the upper edge of flap **12***a* along fold line **15***a* is slidably received under the end anchoring flap **13***a* as indicated when the carton is in collapsed position.

When the carton is opened into operative position the shifting of the end panels **13** into upstanding relation pulls the diagonal bracing strut **15** out from under the lower portion of attachment flap **13***a* to position said strut in substantially horizontal position extending diagonally across the corner portion of the box. The side edge of the bracing strut when in corner locking position abuts the inside surface of the side panel **12** as shown in Figs. 3 and 5 and the lower edge of anchoring flap **13***a* overlies the extreme side marginal edge portion of said strut **15** to positively hold the same in locking position.

It will be seen that I have provided a relatively simple yet highly efficient infold box construction having a corner locking bracing strut which will automatically snap out into operative position to positively hold the corner from collapsing after the same has been fully opened. It will be apparent that the bracing strut will also serve to provide a support for a divided platform or panel **16** which may be desirable across the central portion of the box tray as indicated in Fig. 3 so as to divide the box horizontally into two separate sections.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of my invention which consists of the matter shown and described herein and set forth in the appended claims.

What is claimed is:

1. An infold carton comprising a bottom having fold lines along the sides and ends thereof, side and end panels respectively hinged to and extending outwardly from said bottom at said fold lines, a pair of corner attachment flaps formed on said panels at each corner, each of said flaps being secured to the inner surface of the adjacent panel, each of said pairs of flaps comprising an upper and a lower flap, the upper edge of the lower flap lying in substantially the same plane as the lower edge of the upper flap, the panels carrying said lower flaps being provided with diagonally disposed fold lines extending from the corners of said bottom across the end portions of said panel at substantially 45 degrees to the bottom fold line to form generally triangular attachment portions to permit compact collapsing of the panels against the bottom, corner bracing struts hingedly connected to said lower flaps and tensioned for biased upward movement to at least substantially horizontal position, said corner struts having a disconnected marginal edge cooperatively

engaging the inner surface of said triangular attachment portions and an upper surface contiguous to and underlying the lower edge of said upper flap when the carton is in an open upright condition.

2. The structure set forth in claim 1, wherein the lower portion including the lower edges of the upper flaps adjacent the corner struts are unattached and form strut receiving pockets between said flaps and the panels to which they are secured, which pockets removably and slidably receive said corner struts when the carton is in collapsed position.

3. The structure set forth in claim 1 wherein said corner bracing struts form horizontal supporting elements for a horizontal divider partition extending across the open area of the carton.

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