

Feb. 7, 1961

L. MAYER

2,970,685

SHIPPING AND DISPLAY CARTON

Filed June 20, 1960

3 Sheets-Sheet 1

FIG. 1

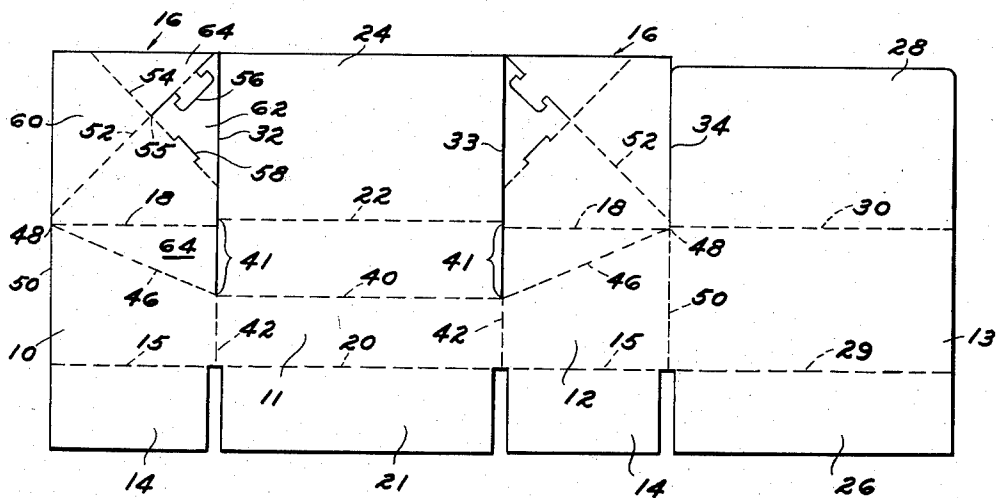
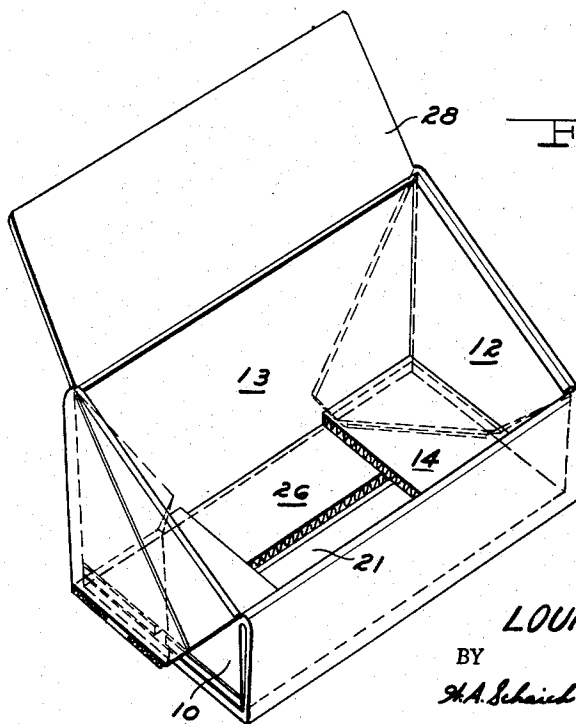


FIG. 2



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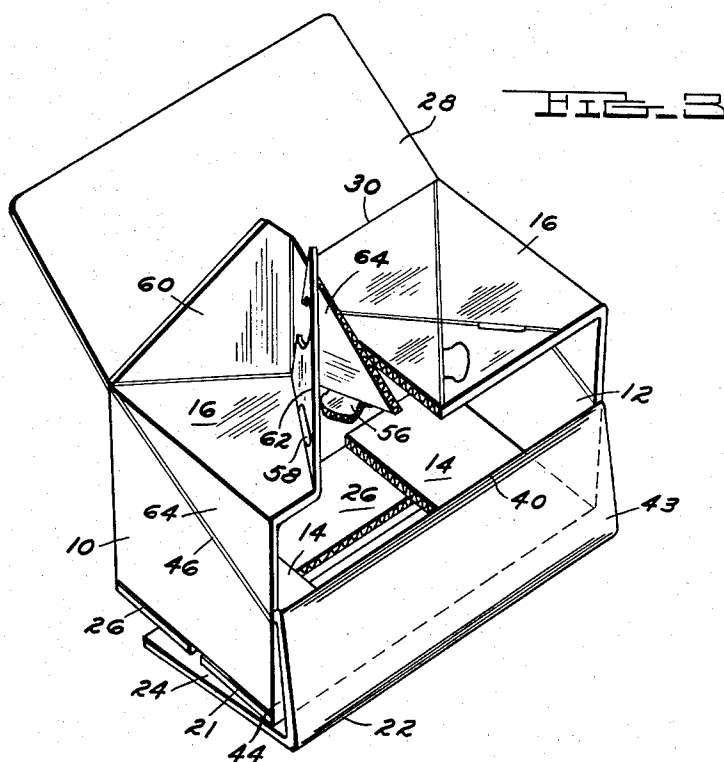
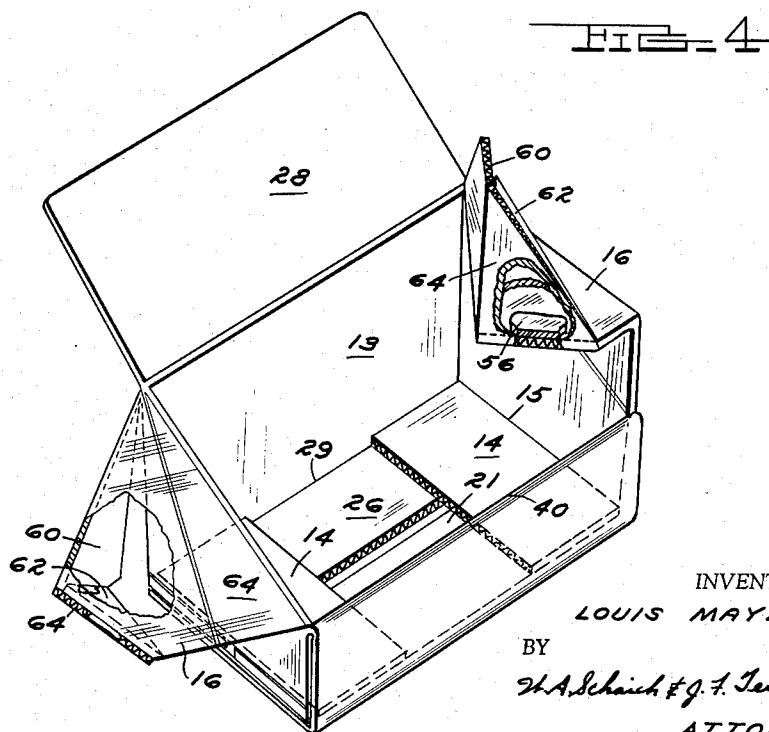
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3 Sheets-Sheet 2



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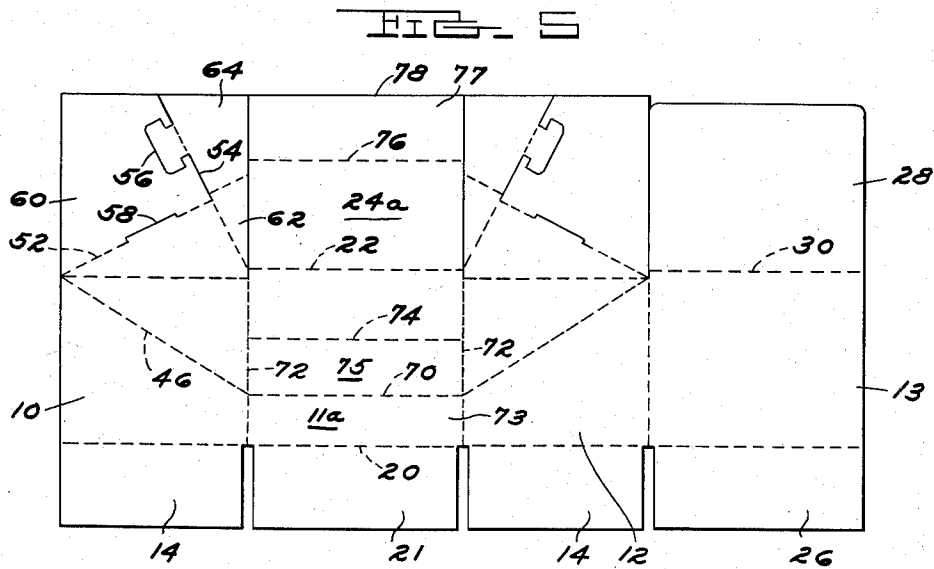
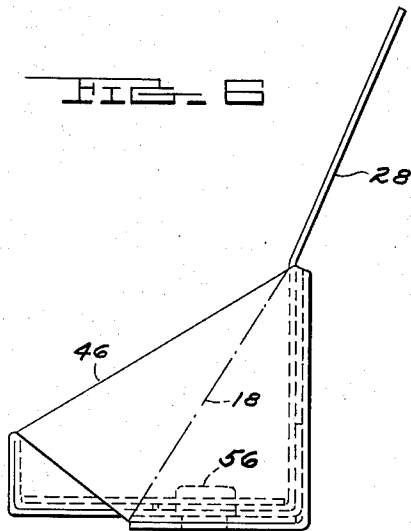
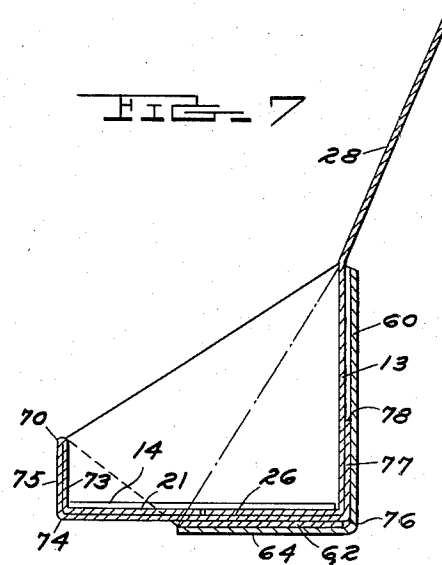
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SHIPPING AND DISPLAY CARTON

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3 Sheets-Sheet 3



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SHIPPING AND DISPLAY CARTON

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7 Claims. (Cl. 206-44)

This invention relates to an improved construction of a carton of the type which can be employed both for the shipment and display of articles contained therein.

The carton of the present invention is also of the type which can be formed by folding a single blank of material such as corrugated board. Cartons of this type conventionally include side and end wall panels with the top and bottom of the carton being formed by flaps on each of these panels. The present invention provides a construction in which, when it is desired to employ the carton for display purposes, means are provided to permit the top flaps to be unfolded, thereby opening the carton, and retained in an unfolded position. In unfolded position, portions of the front and end walls of the carton are also opened up in order to better display the articles, and also to make a more durable display container by employing the unfolded carton portions to re-enforce and stiffen the carton structure.

The invention will be briefly described as follows: a four-sided carton with a top and a bottom, has the top formed by flaps hinged to each of the side walls. For convenience, one pair of opposite side walls will be referred to as the front and rear carton walls, the other pair of opposite side walls being referred to as the end walls. When used as a shipping container, the top flaps are all folded inwardly and sealed in the conventional manner. In order to convert the carton into a display container, a score line is provided on the front wall parallel to the lower edge thereof and at a distance from the lower edge which preferably does not exceed one half the height of the front wall. The portion of the front wall above the score line and the top flap attached to the front wall are foldable into overlapping relation with the front wall portion below the score line and the carton bottom, means such as slits or perforations being employed at the end edges of the front wall above the score line so that the front wall can be separated from the carton ends for this folding operation. Each end wall is provided with a hinge line which extends downwardly from the upper rear end wall corner at an acute angle to the rear end wall edge. This hinge line preferably extends down to the level of the score line on the front panel. A second hinge line is formed across each end wall top flap from the upper rear end wall corner at an angle to the first hinge line equal to the previously mentioned acute angle between that line and the rear end wall edge. This second hinge line is intersected at right angles by another hinge line at a distance from the upper rear corner equal to the end wall height, the intersection of these hinge lines defining two corner panels and a corner panel tab on each end wall top flap. These corner panels can be folded outwardly of the end wall flap and interlocked by the corner panel tab to form a corner structure which can be swung about the first mentioned hinge line on the end wall panel to place the corner structure into overlapping engagement with the adjacent lower rear corner of the carton

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and also into overlapping engagement with the folded front wall and top flap thereof.

Thus the top flap of each end wall and top flap of the front wall are interlocked and retained in unfolded position, and a very attractive, substantial display container is formed as will be more fully appreciated from the representative construction examples disclosed and described herein. The top flap of the rear wall of the carton is merely folded outwardly so that its inner surface can thereby be employed for purposes of advertising or pricing.

Presently preferred examples of the construction of the invention are shown in the accompanying drawings which consist of the following views:

Figure 1, a plan view of a blank used in forming a carton of the invention;

Figure 2, a perspective view showing a carton constructed from the blank of Figure 1 converted to a display container;

Figure 3, a perspective view similar to Figure 2 showing the carton in the initial stage of its conversion to a display container;

Figure 4, a similar perspective view showing a further stage in the conversion operation;

Figure 5, a plan view of a blank for an alternate form of carton construction;

Figure 6, an end elevation showing a display container formed from the blank of Figure 5; and

Figure 7, a sectional end elevation of the structure shown in Figure 6.

The carton illustrated in Figures 2-4 is formed from a blank of corrugated board such as illustrated in Figure 1. This blank is cut and scored, as shown respectively by the solid and dash lines, to provide four side panels 10, 11, 12 and 13. For convenience, the panels 10 and 12 will be referred to as the ends of the carton, the panel 11 as the front, and the panel 13 as the rear thereof. The ends 10 and 12 are each provided with a bottom flap 14, foldable along the score line 15, and a top flap 16 foldable along the score line 18. On the front panel 11, a score line 20 defines the lower edge and a foldable bottom flap 21, and a score line 22 a foldable top flap 24. A bottom flap 26 and a top flap 28 are similarly defined on the rear panel 13 by score lines 29 and 30 respectively. The blank is cut on the lines 32 and 33 to separate the front top flap 24 from the adjacent end flaps 16, and is also cut along the line 34 to separate the rear top flap 28 from the adjacent end flap.

With the possible exception of the fact that the top flap of each side panel is considerably larger in area than is the bottom flap thereof, the construction of the blank as described so far follows conventional practice and enables the blank to be folded to form a four-sided carton having top and bottom walls provided by these top and bottom flaps. The general configuration of this carton can be best visualized from Figure 3. Strips of tape (not shown for clarity) are employed to hold the carton in assembled relation in the usual manner.

In order to make the carton convertible into a display container, the front panel 11 of the blank of Figure 1 is provided with a score line 40 extending parallel to the lower edge line 20 and spaced from this edge line a distance equal to approximately one half the height of the front panel (actually one-half the distance between the lines 20 and 22, less an allowance for the thickness of the corrugated board material). The portion 41 of each front panel end edge line 42 above the score line 40 is slitted or perforated. As a result, when the shipping carton is opened, the front panel top flap 24 can be folded outwardly instead of inwardly of the front panel, the portion 43 of the front panel above the score

line 40 can be folded downwardly into overlapping relation with the front panel portion 44 below the score line 40, and the top flap 24 can be tucked under the bottom of the box, all as shown in Figure 3.

Each of the ends 10 and 12 is scored to define a hinge line 46 which extends from the upper rear corner 48 of each end panel at an acute angle to the rear edge 50 thereof. Preferably this hinge line 46 extends downwardly to the level of the score line 40 on the front panel 11.

A second hinge line 52 extends from each of the upper rear corners 48 across each of the end flaps 16, with the angle between the second line 52 and the first hinge line 46 being substantially equal to the acute angle between the latter line and the rear edge line 50. Hinge line 52 is intersected at right angles by a score line 54, the intersection 55 of the lines 52 and 54 being located from the upper rear corner 48 a distance equal to the end wall height. The portion of each score line 52 beyond the intersection 55 is cut or perforated and provided with a tongue 56, and a notch 58 is cut along score line 54 as indicated in Figure 1. The intersecting score lines 52 and 54 on each of the end flaps 16 define a pair of corner areas or panels 60 and 62, together with a corner panel tab 64, each of these portions 60, 62 and 64 being generally triangular in shape.

When the shipping container is opened, the corner panels 60 and 62 can be folded outwardly as shown in Figure 3, the corner panel tab 64 can be folded over the corner panel 62 and the tongue 56 of the tab 64 engaged in the notch 58 as shown in Figures 3 and 4. As a result, an interlocked corner structure is provided on each of the end flaps 16. This corner structure, together with the triangular portion 64 lying above the hinge line 46 on each of the end walls 10 and 12, can be swung outwardly and downwardly into overlapping engagement with the adjacent lower rear corner of the container and into overlapping engagement with the previously folded top flap 24 of the front wall. When the rear top flap 28 is swung outwardly, the resulting display container appears as shown in Figure 2. All of the top flaps, with the exception of the flap 28, whose inner surface can be used for advertising and pricing the contents, are interlocked in an unfolded position in which portions of the front and end walls of the container have been opened to better and more attractively display the contents. These unfolded end and front flap portions together with portions of the front and end walls act to reinforce the structure.

The construction shown in Figs. 5-7 is similar except as to the provision made for unfolding the front panel and its top flap to convert into a display container. Front panel 11a of the blank of Fig. 5 is provided with a first score line 70 parallel to the lower edge 20 defining a segment 73, and the end edges 72 of the front 11a are cut or perforated between line 70 and the upper edge line 22. A second score line 74 is also provided, being spaced from line 70 a distance equal to the spacing between the latter line and the lower edge 20 plus an allowance for the thickness of the material of the blank, and defining a segment 75. The front top flap 24a is scribed with a score line 76 parallel to the front lines 70 and 74 and spaced from the latter a distance equal to the width of the carton front to rear plus a material thickness allowance. The segment between line 76 and the edge 78 of the flap is identified by the number 77.

Consequently, when the carton is opened and converted to a display container, the front panel 11a and its top flap 24a can be folded to superimpose the front panel portion 75 between lines 70 and 74 over the portion 73 between line 70 and the lower edge 20, portions of the front panel and top flap between lines 74 and 76 over the bottom of the carton, and the portion 77 of the top flap between line 76 and the flap edge 78 over the rear 13 of the carton.

The construction of the remainder of the carton is the same as previously described, except for changes in proportioning, and hence the same reference numbers are used. When the interlocked corner structure is formed on the end panel flaps and swung into engagement with the adjacent lower rear corner of the container, the previously unfolded top flap 24a and front panel portions are positively interlocked in position in engagement with the bottom and opposite or rear side of the container, as shown in Figs. 6 and 7.

While preferred embodiments have been described above in detail, it will be understood that numerous modifications might be resorted to without departing from the scope of the invention as defined in the following claims.

I claim:

1. In a four-sided carton of the type having front, rear and end walls, a bottom, and a top formed by flaps hinged to said walls, means for retaining the top flaps of said end walls and said front wall in an open position whereby said carton can be employed as a display container, comprising a score line extending across said front wall parallel and in spaced relation with the lower edge thereof, means for separating the portion of said front wall above said score line from said end walls, means whereby the top flap and upper portion of said front wall above said score line may be folded outwardly, downwardly and inwardly to place at least a portion of said front wall top flap under said bottom; each of said end walls being provided with a hinge line extending from the upper rear end wall corner downwardly to the edge between the end wall and said front wall at the level of the said score line thereon, said hinge line forming an acute angle with the vertical end wall edge at said upper rear corner; a fold line on each end wall top flap extending from said upper rear end wall corner at an angle to said end wall hinge line equal to said acute angle; a second fold line on each end wall top flap, said second fold line extending at right angles to said first fold line and being located at a distance from said upper rear end wall corner a distance substantially equal to the end wall height, said first and second fold lines defining a pair of corner panels and a corner panel tab which are adapted to be folded outwardly of the plane of said end wall top flap, interlocking means on said corner panel tab for retaining said pair of corner panels in a corner structure; and said corner structure being foldable about said end wall hinge line to place said corner structure in overlapping engagement with said front wall top flap and the bottom and rear wall of said carton.

2. The carton according to claim 1 wherein said means for folding the top flap and upper portion of said front wall includes the hinge line between said front wall and the top flap thereof.

3. A carton according to claim 1 wherein the means for folding the top flap and upper portion of said front wall comprises a second score line extending across said front wall parallel to said first score line and spaced a distance therefrom substantially equal thereto the distance between said first score line and the lower edge of said front wall, and a third score line extending across said front wall top flap at a distance from said second score line substantially equal to the distance between the outer faces of the front and rear walls of said carton whereby the upper portion of said front wall and said top flap thereof can be folded in overlapping relation with the portion of said front wall below said first score line, the bottom of said carton, and with at least a portion of the rear wall of said carton adjacent the bottom thereof.

4. In a four-sided carton of the type having front, rear and end walls, a bottom, and a top formed by flaps hinged to said walls, means for converting said carton into a display container comprising a hinge line extending downwardly across each end wall from the upper rear corner thereof to the vertical edge of the front wall, said hinge line forming an acute angle with the vertical end wall

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edge at said corner, a fold line on each end wall top flap extending from said upper rear end wall corner at an angle to said end wall hinge line equal to said acute angle; a second fold line on each end wall top flap, said second fold line extending at right angles to said first fold line and being located at a distance from said upper rear end wall corner a distance substantially equal to the end wall height, said first and second fold lines defining a pair of corner panels, interlocking means for retaining said pair of corner panels in a corner structure and said corner structure being foldable about said end wall hinge line to place said corner structure in overlapping engagement with a lower rear corner of said carton.

5. A carton according to claim 4 wherein said means for converting said carton into a display container further includes means for exposing at least that portion of the front carton wall above the level of the intersection of said end wall hinge lines with the said front wall vertical edges.

6. A carton according to claim 5 wherein said exposing means comprises a score line extending across said front wall and said level and means for folding the portion of said front wall above said score line and said

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front wall top flap to place said front wall top flap for overlapping engagement by the said corner structure of said end wall top flaps.

7. In a four-sided carton having a bottom and a top formed by flaps hinged to at least some of the sides, means for retaining a top flap in an open position comprising a hinge line extending across the side to which such top flap is secured from one upper corner of such side at an acute angle with the vertical edge at said corner, a fold line extending across said top flap from said one upper corner at an angle to said hinge line substantially equal to said acute angle, a second fold line on said top flap extending at right angles to and intersecting said first fold line a distance from said one upper corner substantially equal to the height of the side to which such top flap is secured, said first and second fold lines defining a pair of corner panels adapted to be folded outwardly of the plane of said top flap, means for interlocking said corner panels in a corner structure, said corner structure being foldable about said hinge line for overlapping engagement with the corner of said carton below the said one upper corner thereof.

No references cited.