A carton for glassware which is X-shaped in end view, is made from a single piece blank. The carton can be folded flat for shipping even when fully glued up, and is erected for use in a simple "pop-in" operation.
BACKGROUND OF THE INVENTION

This invention relates to a carton for displaying glassware. When glued, the carton can be flattened for storage and shipment, and it is easily erected from the collapsed state to receive the glassware. Cartons for glass articles are known in the prior art which can be assembled by scoring, folding and gluing a single piece carton blank and which can be flattened for shipment. U.S. Pat. No. 2,940,653 shows a carton for light bulbs made from a single piece blank of paperboard, assembled to receive two light bulbs with a centrally disposed wall to prevent the bulbs from contacting each other. The container itself, when not holding ware, can be flattened so that it will take up very little space, thereby reducing the cost of storage and shipment of the container itself. That carton container is designed to protect light bulbs and the bulbs themselves are largely surrounded by the carton walls and, consequently, the container is not well suited to displaying the articles.

Another collapsible carton is shown in U.S. Pat. No. 3,199,762. That carton is made from a single piece carton blank which, when scored, folded and glued, forms a boxlike structure which has two "pop-in" end walls and a "pop-out" bottom wall to permit the assembled carton to be flattened for easy storage. Because that carton is also designed to surround the glass articles it contains, it also is unsuitable for displaying the articles.

In addition, that container requires score lines that run both parallel to and angulated to the axes of the carton blank. Such an irregular arrangement of score lines makes it relatively difficult to assemble such cartons, as compared to cartons having only score lines which are all parallel to each other.

BRIEF DESCRIPTION

In contrast, the carton to which this invention is directed can be made from a single piece blank, can be flattened for storage, etc., after all gluing operations on it have been completed, can easily be erected to present an unusual X-shaped appearance (as viewed endwise) and when erected forms a strong carton which provides good visibility and display of articles inserted in it.

It is a further advantage of this structure that no score lines are required on its top or bottom walls, which would tend to weaken them by facilitating their bending or buckling. The basic carton can easily be configured to engage and grip different shapes of glass articles, including both stemware and tumblers.

In a preferred embodiment, the carton of the invention is constructed from a generally rectangular single sheet carton blank having a plurality of parallel transverse score or fold lines. The carton includes a central divider wall with a score line parallel to and midway between the upper and lower edges of the divider wall. A top wall and a bottom wall are disposed in parallel spaced relation to each other with the divider wall extending perpendicularly between them. The upper and lower edges of the divider wall are aligned along the mid-lines of the top and bottom walls, respectively. A pair of side walls flexibly join the outer edge of the top wall with the outer edge of the bottom wall, on each side of the central divider wall. Each side wall includes an upper portion and a lower portion flexibly joined together along a fold line which is parallel to the score line on the central divider wall.

The carton itself is flattenable to a collapsed condition wherein the top and bottom walls are in close proximity and the side and divider walls are all folded along their respective fold and score lines. The carton can be thus flattened by folding each side wall to form an inwardly facing V, that is, a V-like structure (as seen in end view) with the opening thereof facing toward the divider wall. The top and bottom walls are brought together to collapse the divider wall along its score line. When flattened, the divider wall and the side walls are folded in half, and the carton has minimal height.

The carton can be brought to a substantially rigid erect condition suitable for holding and displaying glassware and the like, by moving the top and bottom walls apart from one another and popping in the V's formed by the side walls so that each side wall forms an outwardly facing V with the flexible fold line between the upper and lower portion thereof disposed substantially adjacent the score line on the divider wall. These outwardly facing, back-to-back V's thereby form an "X" appearance as viewed endwise, with the divider wall running up the middle and the top and bottom walls extending across its edges, to the upper and lower ends of the V's. In this X-shaped erect configuration, openings in the upper and lower portion of each side wall engage the upper and lower parts respectively of articles such as glassware, and hold the articles in the carton.

DESCRIPTION OF THE DRAWINGS

The invention can be further described and its features and advantages explained in connection with the accompanying drawings, wherein:

FIG. 1 is a plan view of a preferred form of single sheet blank from which the container of the invention is constructed;

FIG. 2 is an end view of a carton constructed from a blank of the type shown in FIG. 1, in partly erected condition with its side walls arranged to form inwardly facing V's;

FIG. 3 is a perspective view of the partially erected carton with the side walls positioned to form inwardly facing V's, prior to inverting the V's to complete the erection of the carton;

FIG. 4 is an end view of the carton as it is being flattened from the partly erected condition, to a collapsed condition for storage;

FIG. 5 is a diagrammatic end view showing the side walls being inverted inwardly for erecting the carton to its X shape;

FIG. 6 is an end view of the carton after it has been erected for receiving glassware; and

FIG. 7 shows a perspective view of the assembled carton with stemware mounted therein.

DETAILED DESCRIPTION

Referring first to FIG. 1, the numeral 10 refers generally to a single sheet blank from which the preferred embodiment of the carton is constructed. In its preferred form, blank 10 is made from a foldable boxboard or other creasable paperboard, although other materials can be used.

Blank 10 is generally rectangular in outline and has an imaginary longitudinal axis shown by the dotted line 12. The blank is either folded or scored along several
3,884,353

3,884,353 3 spaced, parallel fold or score lines 14 which extend transversely of the blank, i.e., perpendicular to the imaginary axis 12. These fold or score lines 14 define the positions at which the blank 10 is folded during assembly of the carton. As will be made clear, some of the folds 14 are preferably solid creases while others are perforated rules to permit easier folding of the blank along them.

Between adjacent pairs of score lines 14, different sections of the cartons are defined. Specifically, a first flap 16 is located between the rightmost edge 18 of the blank 10 (as viewed in FIG. 1) and a score line 20. Line 20 is preferably a perforated rule, that is, a fold with portions of the blank being perforated along it. The width of the first flap 16 is indicated by the arrow labeled a. An adhesive material is applied to this flap for gluing the carton together.

A divider wall portion 24 is between score line 20 (which in use comprises its upper edge) and another score line 22 (which in use comprises its lower edge). Line 22 is also preferably of the perforated rule type. The divider wall portion 24 is divided into an upper half 26 and a lower half 28 by a score line 30, preferably of the perforated rule type, disposed midway between and parallel to the score lines 20 and 22. The halves 26 and 28 have widths designated by the arrows b. The divider wall 24, as will become more clear later, becomes a central divider wall dividing the assembled carton so as to prevent the articles on its opposite sides from contacting each other.

Disposed between score line 22 and another score line 32 is a second flap portion 34. Score line 32 is preferably a solid crease. This flap portion 34 has a width designated by arrow c, and preferably has an adhesive applied on it on the same side of the blank 10 as the adhesive on flap 16.

Disposed between the score line 32 and another score line 36, preferably of the solid crease type, is a side wall designated generally by 38. As will become clearer later, the score lines 32 and 36 respectively form in use lower and upper margins to foldably attach the side wall 38 to the top wall 54 and the bottom wall 52. Midway between the score lines 32 and 36 of side wall 38 is a fold line 40, preferably of the perforated rule type, which divides it equally into a first lower side wall portion 42 and a first upper side wall portion 44. The side wall portions 42 and 44 have widths designated by the arrows d.

The lower side wall portion 42 has two holes or cutouts 46 and 48, shaped to receive the particular item which is to be packaged in the carton. For holding stemware of the type shown in FIG. 7, the shape of these holes 46 and 48 is somewhat D-shaped with the straight edge of the D disposed along the score line 32 and the curved edges being disposed entirely within the lower side wall portion 42, for holding the base of stemware as will be described. (When the carton is to be used for tumblers, rather than the stemware shown, the holes 46 and 48 are made with a shape such that the side wall portion 42 will engage the outside of the tumbler, near its base.)

The upper side wall portion 44 has holes 50 and 52. For use with stemware as shown, these holes 50 and 52 are substantially D-shaped with the straight edge thereof disposed along the score line 36 and the curved edge thereof disposed entirely within the upper side wall portion 44. The curved edge of the holes 50 and 52 is shaped to grip the exterior surface of such glassware. (These holes should be generally elliptical for most tumblers.)

A top wall 54 is bounded on the right by the score line 36 and on the left by another score line 56 which is preferably of the solid crease type. The wall 54 has a width between the score lines 36 and 56 designated by arrow e.

Two holes 58 and 60 are optionally formed in top wall 54. These are located at positions directly above the glassware held by the carton (FIG. 7), to permit a purchaser to insert his fingers in them to carry the carton.

Disposed to the left of the score line 56 and to the right of another score line 62, preferably of the solid crease type, is another side wall portion shown generally at 64. As will become clearer later, the score lines 56 and 62 respectively form, in use, upper and lower margins to foldably attach the side wall 64 to the top wall 54 and the bottom wall 82. The side wall portion 64 is divided in half by a fold line 66, preferably of the perforated rule type, so as to form a second upper side wall portion 68 and a second lower side wall portion 70, each having a width identified by arrow f. The upper side wall portion 68 has two holes 72 and 74, corresponding to holes 50 and 52. The lower side wall portion 70 has two holes 76 and 78, corresponding to holes 46 and 48.

Located to the left of the score line 62 and extending to the left edge 80 of the carton blank 10, a distance indicated by g, is a bottom wall 82.

Carton Assembly

As viewed in FIGS. 2 and 3, the carton blank of FIG. 1 is folded along the score lines for assembly, so as to form two substantially identical cells, indicated generally at 84 and 86, with divider wall 24 disposed centrally between them. The first flap 16, as viewed in FIG. 2, is folded along the score line 20 so as to be disposed substantially perpendicular to divider wall 24, line 20 thus forming the upper edge of the divider wall. Flap 34 is arranged perpendicularly to divider wall 24 and parallel to the first flap 16, line 22 thus forming the lower edge of wall 24.

Top wall 54 is disposed above flap 16 substantially perpendicularly to wall 24, and an adhesive secures flap 16 to the underside of top wall 54, so that the divider wall is attached medially at its upper edge to the top wall 54. In a similar manner, bottom wall 82 is adhesively secured medially to flap 34. The adhesive may be coated on flaps 16 and 34 when the blank is cut. In FIG. 1, the precoated adhesive is disposed within the cross-hatched areas on panels 16 and 34; in use, these adhesive areas are secured to the areas 90 and 91 respectively, on panels 54 and 82.

Disposed on the left side of the carton (as seen in FIG. 2) is the side wall 38 which joins the leftmost edge of top wall 54 with the leftmost edge of flap 34. The upper side wall portion 44 and the lower side wall portion 42 of wall 38 have a combined length of 2d (FIG. 1), which is greater than the height (2b) of divider wall 24, and the side wall therefore forms an inwardly facing V, that is, the opening of the V formed by the upper side wall portion 44 and the lower side wall portion 42 faces inwardly toward divider wall 24. Similarly, on the right side of the carton shown in FIG. 2, the other side
wall also forms an inwardly facing V. In this condition the carton is partially erected. As viewed in FIG. 4, the semi-erected carton of FIGS. 2 and 3 can be compressed or flattened by applying a force thereto in the direction indicated by the arrows labeled 88, i.e., perpendicular to the top and bottom walls. When this is done side walls 38 and 64 and divider wall 24 fold along their score lines 40, 66 and 30 respectively, so that the side walls 38 and 64 and the divider wall 24 are folded in half, to a collapsed condition. When so flattened, the carton presents a substantially planar body of minimal height which takes up a small amount of space thereby minimizing storage and shipping costs.

Carton Erection

The carton is shown being erected in FIG. 5. The phantom line 100 shows the side walls 38 and 64 in their semi-erect position. A force is applied to the score lines 40 and 66 in the direction indicated by the arrows 92 and 94 (i.e., parallel to the top and bottom walls). This force causes the side walls to move across the center position shown by the solid line 102 to the erected position shown by the dotted line 104 where the V's defined by the side walls 38 and 64 are popped in or inverted so as to form outwardly facing V configuration as shown in FIGS. 6 and 7. When the side walls 38 and 64 have thus been popped in to erect the carton, the carton as seen endwise takes on an "X-like" configuration, with top and bottom walls joining the arms of the X. This is a surprisingly strong configuration when the carton is filled with glassware. As can be seen, there are no score lines on either of the top or bottom walls 54 or 82, so that they resist the concave bending seen in FIG. 5, and tend to remain planar.

As viewed in FIG. 7, the article receiving holes in each side wall portion are aligned to receive an article 98 such as stemware, glassware or the like. In the preferred embodiment of the invention, divider wall 24 has substantially the same height as the article 98 so that the article 98 just fits between the top wall and the bottom wall. The perimeter of each opening is shaped to engage and hold the stemware.

While the foregoing description has been made with particular emphasis on a preferred embodiment for use with a particular shape of stemware, those of skill in the art will recognize that modifications in form may be made. For example, the carton according to the invention may be made from a plurality of rectangular sections shaped as described herein the carton sections are joined by tape. It will also be recognized that the shape of the apertures in the side walls can be different than shown, although the shape of these holes preferably should conform to the shape of the particular article with which the carton is to be used.

The foregoing and other modifications in form only can be made without departing from the spirit and scope of the invention as defined by the following claims.

What is claimed is:

1. A carton for glassware or the like, comprising: a central divider wall having upper and lower edges and a score line parallel to and midway between said upper and lower edges, a top wall and a bottom wall each medially attached to said divider wall at the respective edges thereof, said top wall and said bottom wall being parallel to each other and generally perpendicular to said divider wall, and a pair of side walls on opposite sides of said divider wall, each having upper and lower margins which are foldably attached to said top wall and said bottom wall respectively, each said side wall including an upper portion and a lower portion flexibly joined together along a central fold line parallel to said score line, each said side wall having a dimension between said upper and lower margins which is greater than the height of said divider wall, each said side wall being bent at said fold line to form a V, the V formed by each said side wall being invertable between a collapsible position in which it opens inwardly toward said central divider wall, across a center position to an erected position in which it opens outwardly, said divider wall being foldable along said score line by bringing said upper and lower edges toward one another when said side walls are in the said collapsible position, said upper portions and said lower portions including openings to hold glassware therebetween when said side walls are in said erected position.

2. The carton of claim 1 wherein the fold lines of the respective side walls are disposed substantially adjacent said score line on said divider wall on opposite sides thereof, when said side walls are in said erected position.

3. The carton of claim 1 wherein said central divider wall, said top wall, said bottom wall and both said side walls are formed integrally from a single piece blank.

4. The carton of claim 3 wherein said blank is made of paperboard.

5. The carton of claim 1 wherein the height of said divider wall between said top wall and said bottom wall is substantially equal to the height of glassware to be inserted within said openings and said openings are shaped to conform with the sectional shape of the glassware where the glassware contacts the respective side wall.

6. An erected display carton comprising: a central divider wall having an upper edge and a lower edge, a first flap foldably joined to said upper edge of said divider wall, said first flap being disposed generally perpendicularly to said divider wall, a second flap foldably joined to said lower edge of said divider wall, said second flap also being disposed generally perpendicularly to said divider wall, a first lower side wall foldably joined with said second flap and converging inwardly toward said divider wall, a first upper side wall foldably joined with said first lower side wall and diverging outwardly from said divider wall, a top wall foldably joined with said first upper side wall, said top wall overlying and secured to said first flap, a second upper side wall foldably joined with said top wall and converging inwardly toward said divider wall on a side thereof opposite from said first upper side wall, a second lower side wall foldably joined with said second upper side wall and diverging outwardly from said divider wall,
3,884,353

7. An erected display carton made from a single piece carton blank comprising:
   a central divider wall having an upper edge and a lower edge,
   a first flap formed integrally at said upper edge of said divider wall, said first flap being disposed generally perpendicularly to said divider wall,
   a second flap formed integrally at said lower edge of said divider wall, said second flap being disposed generally perpendicularly to said divider wall,
   a first lower side wall formed integrally with said second flap and converging inwardly toward said divider wall,
   a first upper side wall formed integrally with said first lower side wall foldably joined with said second lower side wall, said bottom wall overlying and secured to said second flap, and
   a plurality of opposed openings in said first and second upper and lower side walls for receiving articles between said top and bottom walls.

8. A carton made from a single piece carton blank comprising:
   a bottom wall foldably joined with said second lower side wall, said bottom wall overlying and secured to said second flap, and
   a plurality of opposed openings in said first and second upper and lower side walls for receiving articles between said top and bottom walls.

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