United States Patent [19]

Kuenzi

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[54] **BEER CARTON**

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[52] **U.S. Cl.** ..... **229/23 R,** 229/52 B

[51] **Int. Cl.** **B65d 5/32,** B65d 5/46

[58] **Field of Search** ..... 229/23 R, 52 B, 52 BC

[56] **References Cited**

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[57] **ABSTRACT**

The entry of light into the interior of a beer carton through the handholes thereof is prevented by flaps, one of which is hingedly attached to the inner surface of each end panel above the upper margin of the handhole. The flaps are preferably wider than the handholes, extend downwardly below the lower margin of the handholes, and have a free lower edge. The flaps are preferably deflectable inwardly along a fold line opposite the upper margin of the handholes to permit entry of fingers around the upper margin of the handhole and between the inner surface of the end panel and the adjacent surface of the flap. Each end wall panel is preferably made of triple-folded material with the flap being cut out of the inside face of the material and the handhole being cut through the other two thicknesses.

4 Claims, 4 Drawing Figures

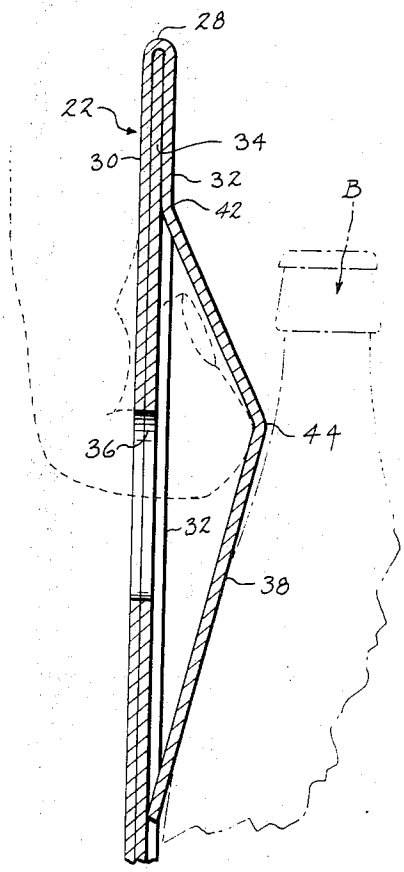


Fig. 1

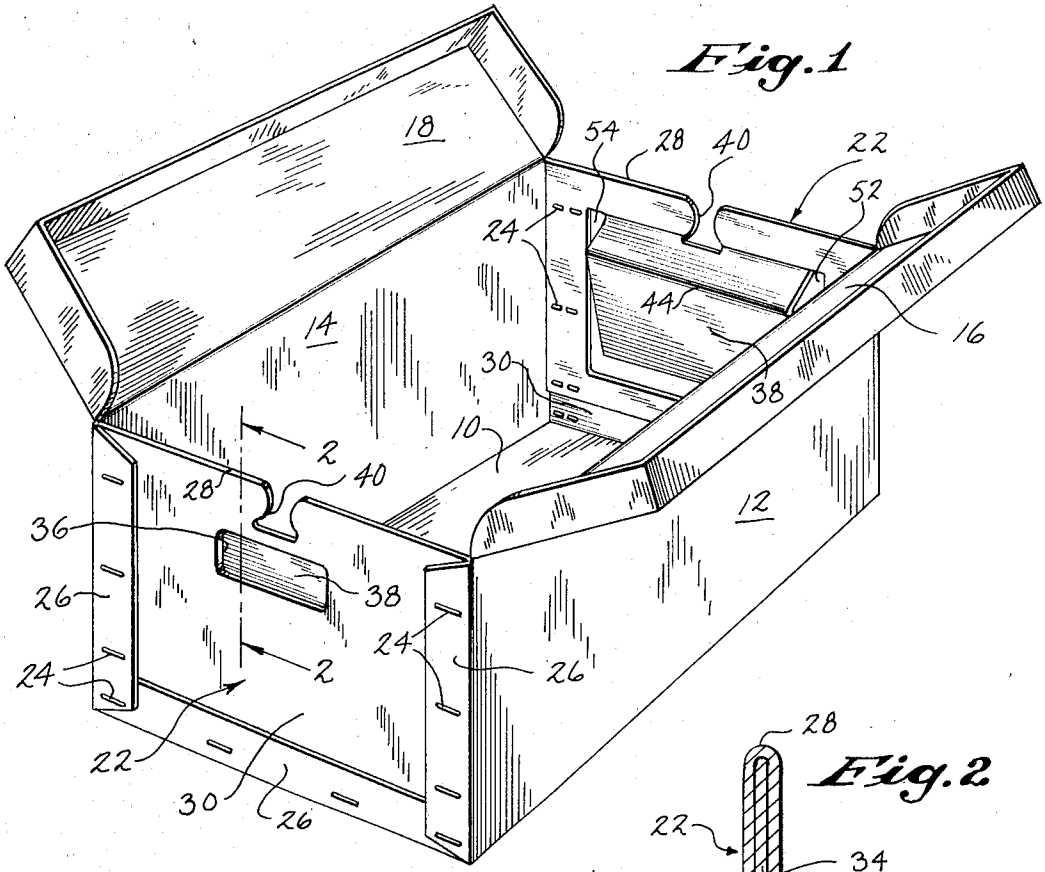


Fig. 2

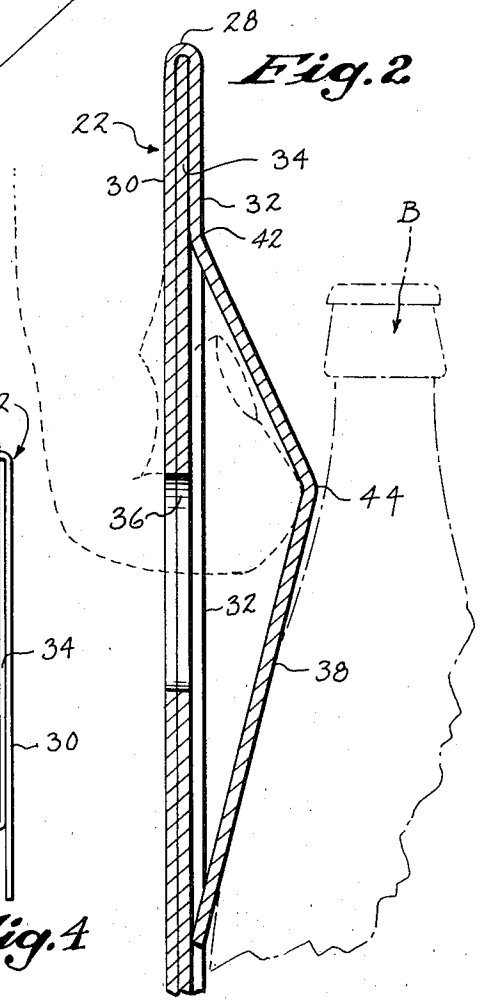


Fig. 3

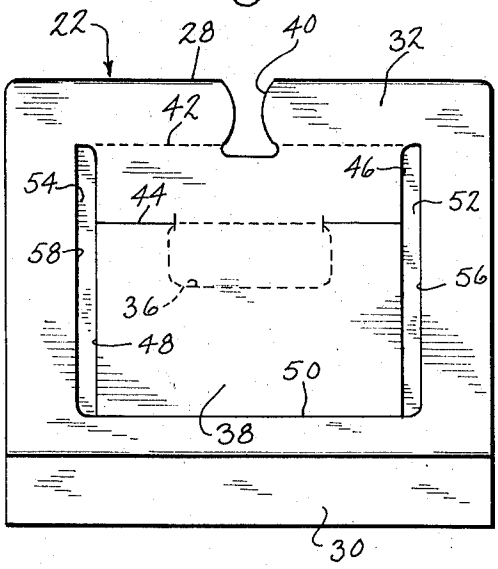


Fig. 4

BEER CARTON

BACKGROUND OF THE INVENTION

It is well known that light has a detrimental effect on bottled beer, and for this reason it has been proposed in the past to provide flaps which cover at least part of the handholes in beer cartons to prevent the entry of light therein through the handholes. In the past, such flaps were formed by leaving the material cut from the handhole attached to the upper or lower margin thereof instead of removing it. This only provided partial blockage of light, however, because such flaps, when bent inwardly, only covered a portion of the handhole, and the further the flaps were bent inward, the less effective they were in blocking light. On returnable, multitrip cartons these prior art flaps soon became bent inwardly so far that they ceased to fulfill their intended function as light shields.

Accordingly, the principal object of this invention is to provide a beer carton in which the handholes are covered by light shield flaps which effectively prevent the entry of light, dirt, or other foreign material or objects into the carton through the handholes, the shield being an integral part of the carton so that it cannot be lost or intentionally removed.

Another object of the invention is to provide light shield flaps as noted above which do not interfere with normal handling of the cartons.

An additional object of the invention is to provide light shield flaps as noted above which are relatively inexpensive and which can be fabricated by high-speed mass production techniques.

A further object of the invention is to provide light shield flaps as noted above in which each flap is attached to the inner side of an end wall panel a substantial distance above the handhole and is deflectable inwardly along a line opposite the upper margin of the handhole to permit the entry of fingers around the upper margin of the handhole and between the inner surface of the end wall panel and the adjacent surface of the light shield.

SUMMARY OF THE INVENTION

In accordance with this invention, the above-noted objects are achieved by providing light shield flaps each of which is hingedly attached to the inner surface of an end wall panel above the upper margin of the handhole therein. Each flap is preferably wider than the handhole, extends downwardly below the lower margin of the handhole, and has a free lower edge. The flaps are preferably deflectable inwardly along a fold line opposite the upper margin of the handholes to permit the entry of fingers around the upper margin of the handhole and between the panel and the adjacent surface of the flap.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a Bliss-type beer carton utilizing one illustrative embodiment of the invention and showing an end wall light shield in an inwardly-deflected condition;

FIG. 2 is an enlarged, cross-sectional view taken along the line 2—2 of FIG. 1;

FIG. 3 is an end view looking at the inside of an improved end wall panel before assembly and carrying a light-shielding flap of this invention; and

FIG. 4 is an edge view of the panel of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 shows a Bliss-type beer carton having a bottom panel **10**, two opposed side panels **12** and **14** which are foldably attached to the bottom panel **10**, cover members **16** and **18** which are foldable toward one another from the upper edges of the side panels **12** and **14**, and like end panels **22** which are secured by metal staples **24** to stitching flaps **26** which are foldably connected to the bottom panel **10** and the side panels **12** and **14**. The bottom panel, side panels, end panels, and cover panels are preferably formed of solid fiberboard. They may, however, be formed of corrugated board or other suitable material of a like nature. Although the disclosed carton is a beer carton, it will be obvious that the invention is also applicable to bleach cartons, photographic chemical cartons, food cartons, and other cartons for light-sensitive materials, or for items where it is important to exclude foreign matter or objects.

The end wall panels **22** are both fitted with handholes and light-shielding flaps mounted over the handholes, but since the two panels **22** are identical in structure, only the one panel will be described in detail herein.

Each end panel **22** is preferably made of a material having a double thickness which is folded over at the top edge along a fold line **28** (see FIG. 2) so as to form an outer panel portion **30** and an inner panel portion **32**. A reinforcing panel **34** may, if desired, be employed. Where used it may be integral with the lower edge of the inner portion **32** to be folded up, as shown in FIG. **4**, between the outer panel portion **30** and the inner panel portion **32**. A handhole **36** is formed in the outer panel portion **30** and in the reinforcing panel **34** where the latter is used, and a light-shielding flap **38** is cut out of the inner panel portion **32**. A notch **40** for accommodating the cover flanges may be cut through the three layers.

The light-shielding flap **38** is free at its lower edge and is preferably integral with the inside panel portion **32** along a fold line **42** which allows the top of the flap to swing inwardly on the hinge **42** as indicated in FIG. **2**. Another fold line or line of scoring **44** runs parallel to the fold line **42** and is positioned approximately opposite the upper margin of the handhole **36** at approximately the same level when the panel is deflected inwardly as in FIG. **2**. As indicated in FIG. **2**, it is an important feature of this invention that the flap **38** is deflectable inwardly to a position which is permitted because of the narrowness of the necks of the adjacent bottles B within the carton, to provide clearance for the fingers around the upper margin of a handhole and between the upper inner surface of an end wall panel **22** and the adjacent surface of the flap **38**. This deflection is preferably made easier by use of a score line **44** but it could be done by using lighter weight material. After repeated use the flap **38** may take a set in the position shown in FIG. **2** whereby the fingers can be readily inserted in the space provided without opposition. When the cartons are new the shield will be straight and against the end wall panel; however, the fingers, when they enter the handhole **36**, will automatically deflect the flap **38** to the position shown in FIG. **2** without any special effort being made.

Referring to FIG. **3**, the lateral margins **46** and **48** of the flap **38** are preferably well beyond the lateral margins of the handhole **36** so that light cannot enter

through the sides of the flap at an oblique angle. Also, the lower margin **50** of the flap **38** preferably extends substantially below the lower margin of the handhole **36** for the same reason. Slots **52** and **54** are preferably provided between the lateral margins **46** and **48** and the adjacent edges **56** and **58** of the inner panel **32** to prevent binding of the flaps against the lateral margins **56** and **58.**

It will be clear to those skilled in the art that the various cut lines and score lines can all be formed in the same die cutting operation before the outer panel **30** and inner panel **32** are folded along the fold line **28.** It will be equally clear that the folding of the panel along the fold line **28** can be done by automatic machinery after the die cutting operation takes place and, accordingly, it will be clear that the light-shielding flap of this invention is compatible with high-speed mass production techniques, whereby the inclusion of the light-shielding flaps does not appreciably increase the cost of the carton.

The reinforcing panel **34** may not be necessary in all embodiments of the invention, but in those embodiments where it is used it may be formed as shown in FIG. **4,** or it may be die cut separately from the end wall panels and inserted between the panel portions **30** and **32** at a suitable stage of assembly. The reinforcing panel **34** will preferably be of the same width as the end wall panel and will have its lower edge terminate at the lower edge of the panel portion **32.** The reinforcing panel reinforces the upper end of the end wall, as shown in FIGS. **2** and **4,** and reinforces the handholes.

From the foregoing description it will be apparent that this invention provides a beer carton in which the hand-holes are covered by novel light shield flaps which effectively prevent the entry of light into the carton through the hand-holes under all conditions. The shield **44,** being an integral part of the carton, prevents its loss and effectively prevents intentional removal. This feature is significant because in a carton which is normally reused several times it is very desirable that the shields remain intact. In addition, the shields will normally tend to straighten out to the position shown in FIG. **3** when the carton is not being lifted, to prevent the entry of foreign, contaminating matter such as dirt, dust, or rodents, or other objects or materials from inadvertently being introduced into the carton.

Although this invention has been illustrated with reference to one specific embodiment thereof, it should be understood that the invention is by no means limited to the disclosed embodiment since modifications can be made in the disclosed structure without altering its basic principles. Such modifications will be apparent to those skilled in the art, and this invention includes all such modifications as may fall within the scope of the following claims.

What I claim is:

1. In a carton for carrying bottles or like articles and having at least one end panel with a handhole therein, a light shield for blocking the entry of light into the interior of said carton through said handhole, said light shield comprising a flap hingedly attached on an upper hinge line to the inner surface of said end panel a distance above the upper margin of said handhole, said flap having a lower free edge projecting downwardly below the lower margin of said handhole a distance sufficient to permit said free edge to be restrained against said inner surface by said articles, and said flap being deflectable inwardly opposite the upper margin of the handhole, and said upper hinge line being located a sufficient distance above the upper margin of the handhole to permit the entry of fingers around the upper margin of the handhole with the bent ends of the fingers projecting above said upper margin of the handhole and accommodated between the inner surface of the end panel and the adjacent surface of said flap, the free lower edge of said flap being vertically shiftable during deflection.

2. A carton construction as defined in claim **1** wherein the deflectable flap has a horizontal fold line positioned to facilitate deflection and shiftable during deflection from a position just below the upper margin of the handhole to a slightly elevated position approximately opposite said upper margin.

3. A carton construction as defined in claim **1** wherein said end panel is made of doubled-over material to provide inner and outer portions, said flap being cut out of the inner portion of said doubled-over material and said handhole being cut out of the outer portion, the upper margin of said flap being integral with the inner portion of said end panel and including a score line along the juncture between said upper margin of the flap and said inner panel portion.

4. A carton construction as defined in claim **1** wherein said end panel is made of doubled-over material to provide inner and outer portions, said flap being cut out of the inner portion of said doubled-over material leaving a surrounding relatively narrow marginal frame, and said handhole being cut out of the outer portion of said doubled-over material, the carton being a "Bliss"-type carton having stitching flaps projecting from the end edges of the side and bottom walls, and said frame portion of the inner portion of the end panel being stitched to said stitching flaps at each end of the carton to provide an extra thickness, and said cut-out flap having its lower edge slideable within said marginal frame during deflection and substantially filling said marginal frame when undeflected.

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