

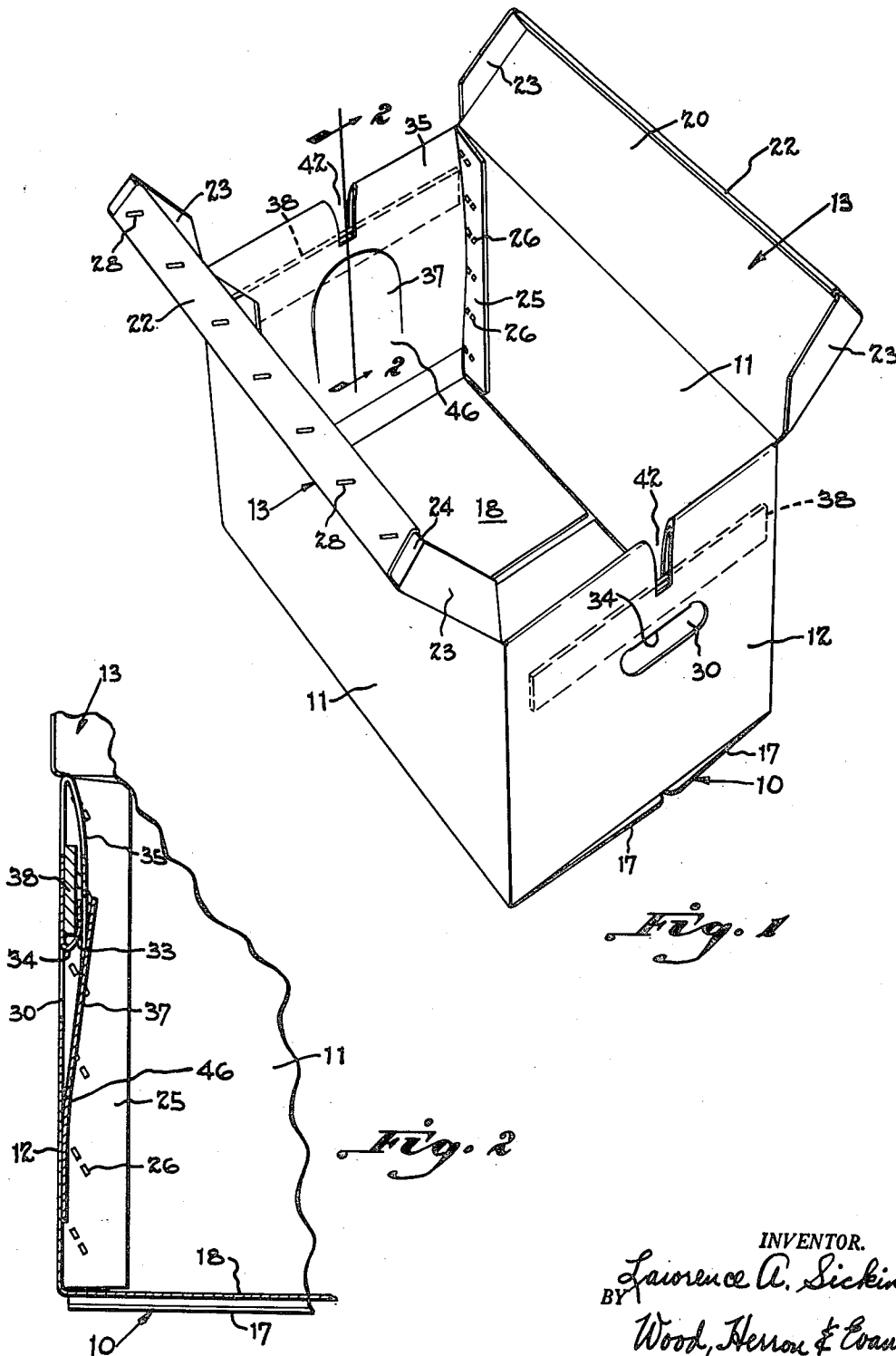
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L. A. SICKING
LIGHT SHIELD AND REINFORCEMENT
STRUCTURE FOR BEVERAGE CASES

2,760,715

3 Sheets-Sheet 1



INVENTOR.
Lawrence A. Sicking.
BY Wood, Heron & Evans.
ATTORNEYS.

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3 Sheets-Sheet 2

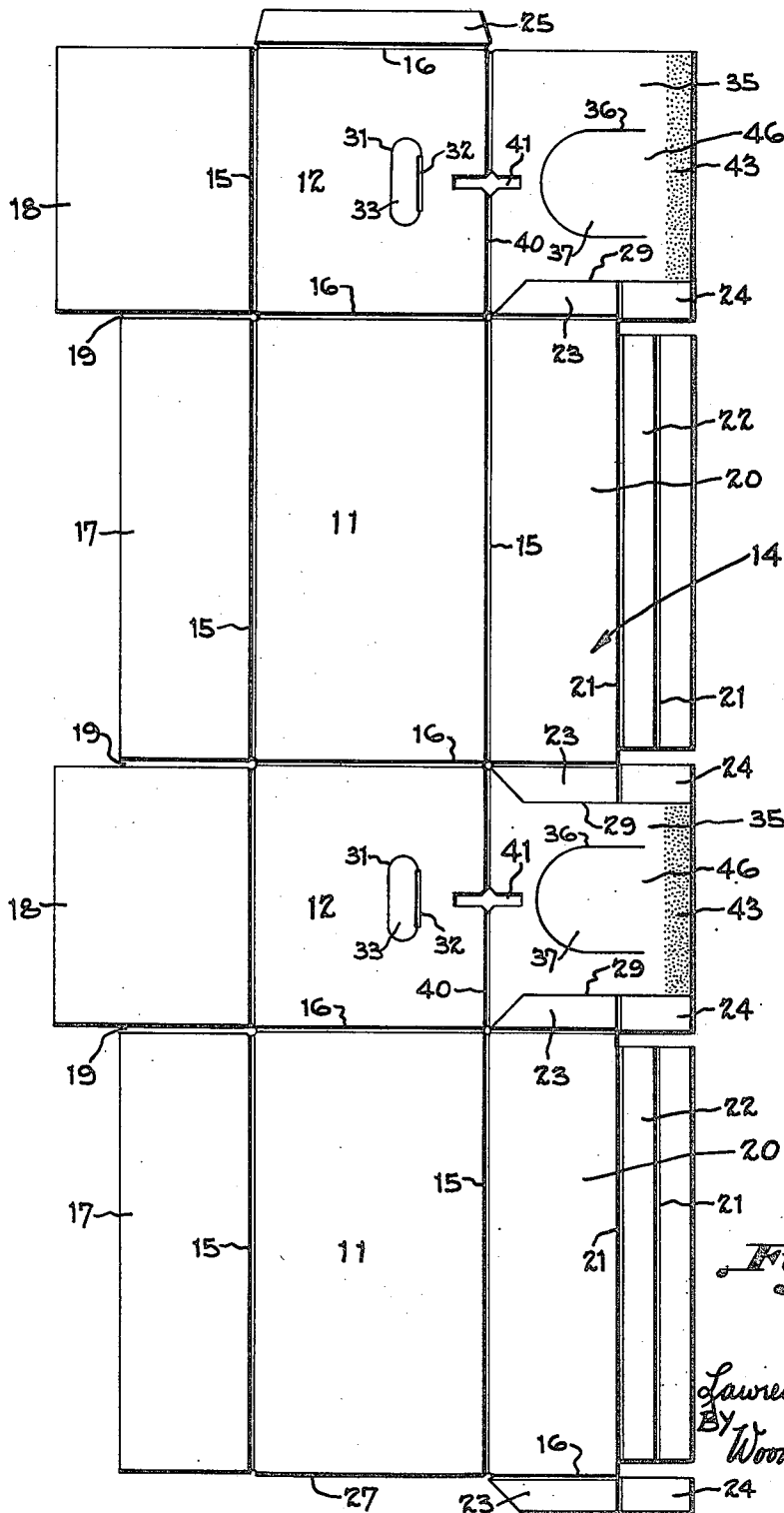


Fig. 3

INVENTOR.
Lawrence A. Sicking
By Wood, Heron & Evans.
ATTORNEYS.

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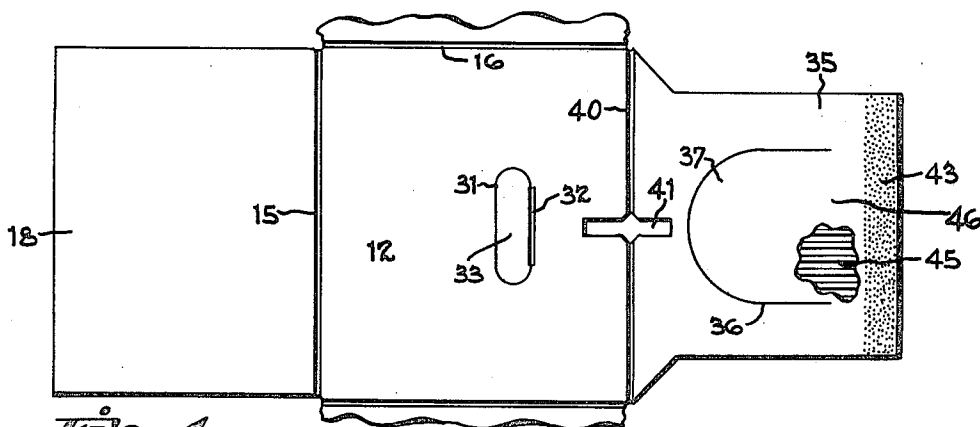


Fig. 4

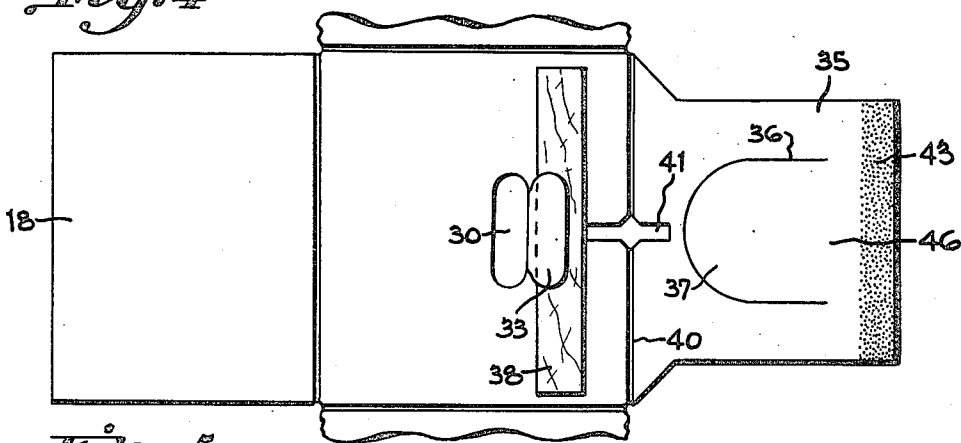


Fig. 5

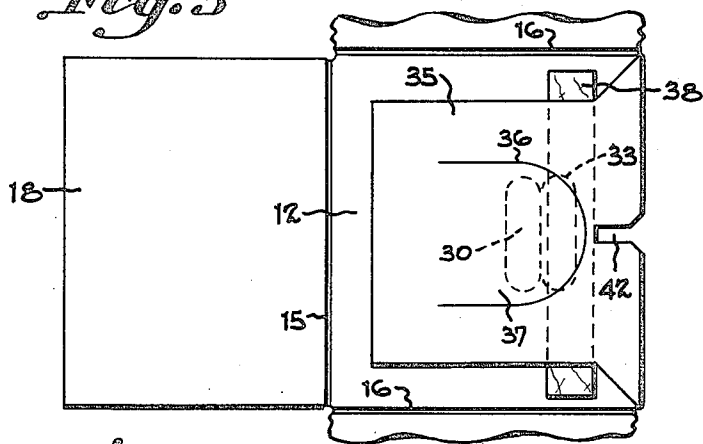


Fig. 6

INVENTOR.
Lawrence A. Sicking.
BY Wood, Henson & Evans.
ATTORNEYS.

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LIGHT SHIELD AND REINFORCEMENT STRUCTURE FOR BEVERAGE CASES

Lawrence A. Sicking, Indian Hill, Ohio, assignor to The Jackson Box Company, Cincinnati, Ohio, a corporation of Ohio

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3 Claims. (Cl. 229—52)

This invention is directed to cases or cartons for bottled beer and resides particularly in an improved construction which strengthens the hand grip holes of the case and prevents light from entering the holes, which normally causes deterioration of the beer packed therein.

The present structure is intended to be incorporated in the conventional returnable case which contains 24 bottles of 12 ounce size and is disclosed in relation to this particular size; however, the improvement is also intended to be incorporated in cases which hold 12 quart size bottles. The returnable case is ruggedly constructed of heavy paperboard material in order to withstand the rough usage to which it is subjected. For carrying purposes, the case is provided with two hand grip holes which are located in the end walls near the upper edges of the walls. In the conventional case, these holes are constantly open and allow light to strike the bottles within the case, which are in the proximity of the openings, even though the hinged lids at the top are closed. It is well known that light rays penetrating the walls of the bottle, detract from the flavor and quality of beer contained in it; for this reason, most beer bottles are amber tinted to control the passage of light rays. However, upon exposure to direct sunlight, sufficient light rays penetrate the bottle to have a damaging effect, even though the bottle is tinted.

The principal object of the invention has been to provide a simple light shield structure at the interior of the case which covers the hand grip holes, which yields readily when the hands are inserted in the holes and which springs back to closed position when the hands are withdrawn from the hand grip holes. A further object has been to take advantage of the shield structure to reinforce the upper edge portion of the end wall above the hand holes so as to prolong the useful life of the case.

Briefly, the shield or blind structure consists of a shield panel formed of paperboard material folded inwardly upon each end wall of the case, the panel having its central area partially severed to delineate a light shield located behind the hand hole and arranged to be sprung inwardly by the fingers when the hand is inserted in the hole to carry the case. In order to reinforce the upper edge portion of the end wall above the hand hole, a beam-like slat extends across the end wall above the hand hole and is held in position by the frictional engagement of the shield panel which is folded down over upon the slat and upon the end wall to which it is secured. The slat resides at the load bearing upper edge portion of the hand hole and the hand hole is delineated by a partially severed hand hole flap which is folded upwardly around the slat to provide a rounded hand grip edge extending across the hand hole. The flap is held in engagement against the slat by the shield panel and thus provides a positive retainer for the slat as well as a gripping edge; this structure is duplicated at opposite ends of the case.

The top closure of the case is constituted by two lids which are hinged along the side walls of the case and which are provided with marginal flanges which meet at

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the center of the case. To accommodate the flanges, the upper edge of each end wall is slotted to a depth corresponding to the width of the flanges, such that the flanges at the swinging ends of the lids fit down into the slots when in closed position. In this position the end flanges of the lid nest over upon the upper edge portions of the end walls.

By reason of the slots, the upper portion of the end wall section above each hand hole is considerably reduced and forms the weakest part of the case. The cases are often carried in a level position with both hands in the hand holes; consequently, the weight load of the case imposes forces which act upwardly in the plane of the end walls above the hand holes, tending to tear or disrupt that portion which is weakened by the slots. However, the slats above the hand holes act as beams to distribute the forces laterally and prevent undue strain; therefore, the slat and component reinforcing structure prolongs the useful life of the case. If the case is carried by one hand in a suspended position, then the forces act at an angle to the plane of the end wall and are partially resisted by the slat and partially resisted by the flanges of the lid sections which overlie the end wall. In either mode of carrying, the hinged lids offer no interference with the normal grasping of the case by the hand holes and spring automatically to closed position when the hand is withdrawn; thus protecting the bottles from exposure to light rays at all times.

The various structural features of the invention are disclosed in detail in the following description taken in conjunction with the drawings.

In the drawings:

Figure 1 is a perspective view of an erected beer case embodying the present light shield and reinforcement structure.

Figure 2 is an enlarged sectional view taken on line 2—2 of Figure 1, detailing the internal construction of the improved structure.

Figure 3 is a plan view of the one-piece blank of corrugated paperboard from which the case, light shield and reinforcing structure is erected.

Figure 4 is an enlarged plan view taken from Figure 3, further illustrating the improved end wall structure before erection.

Figure 5 is a view similar to Figure 4, showing the reinforcing slat in position with the retaining flap of the hand hole folded over upon the slat in retaining position.

Figure 6 is a view showing the light shield flap folded down upon the slat and upon its retaining flap and attached to the end wall.

Described with reference to Figure 1, the beer case proper is generally conventional, consisting of a bottom 10, side walls 11, end walls 12 and a pair of hinged lid sections 13. The case is erected from a one-piece blank 14 (Figure 3) which is cut from corrugated fiber board and suitably scored longitudinally as at 15 and transversely as at 16, to delineate the components of the case.

The bottom 10 of the case is formed from the two side flaps 17 and end flaps 18 joined to the blank along the first longitudinal score line 15 and separated from one another by the slits indicated at 19. The top closure lids 13 are formed from the two side flaps 20 which are delineated by the second longitudinal score line 15. The flaps 20 for the lids each include a pair of score lines 21 located near the outer edge of each lid flap, these score lines delineating the marginal flange 22 of each hinged lid as shown in Figure 1. The end flange 23 of each hinged lid is delineated by the respective transverse score lines 16, each flange being integral with the side edges of the lid 13 as shown in Figure 3, and each having a tucking flap 24 which resides between the two flaps of flange 22 when they are folded one upon the other in erected posi-

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tion. The end flanges which reside adjacent the shield panels 35, later described, are severed from the marginal portions of the shield panels along the lines of severance indicated at 29.

Upon erection of the case, the blank is folded along the transverse score lines 16 to its rectangular shape, then the end flap 25 of the blank is stapled as at 26 to the side wall at the opposite end 27 of the blank. Thereafter, the end flaps 18 are folded inwardly at the bottom and the side wall flaps 17 are folded over upon them. The bottom flaps are then permanently attached together by stapling or the like to form the bottom 10. The lid flanges are formed by folding the two flange flaps over, one upon the other, with the tucking flap 24 inserted between them. The flanges are then secured to permanently erected position by applying staples 28 as shown in Figure 1.

As shown in Figures 1 and 2, the end walls 12 are provided with hand grip holes 30 which are located near the upper edge of the walls and centered upon the longitudinal axis of the case. The hand holes are formed by partially severing the end walls as indicated at 31, (Figure 3) to provide an oblong opening, the interrupted portion of the severed line being scored as at 32. This provides a slat retaining flap 33, which as shown in Figure 2 is folded inwardly along the score line to provide a rounded load bearing edge 34 along the upper edge portion of each hand hole.

Preferably before erection of the case proper, the light shield structure is erected upon the end walls 12 of the case as indicated in Figures 4, 5 and 6. This structure consists of the shield panel 35 for each end wall, each panel being partially severed centrally as at 36 to delineate a blind or light shield indicated at 37 in Figure 2, which overlies the hand hole 30 to prevent passage of light rays into the case. In order to reinforce the portion of the end wall above the hand hole, a slat 38, preferably of wood, is placed above the hand hole 30, with the slat retaining flap 33 of the hand hole folded inwardly and over upon the slat.

It will be noted that each shield panel 35 is delineated by a portion of the longitudinal score line 15, as indicated at 40, and that there is provided an opening 41 of narrow rectangular shape extending transversely across the score line and residing partially within the end wall and partially within the shield panel. The opening is located midway between the side edges of the end walls, such that upon erection of the case, an open slot 42, which resides above the hand hole, is formed in the upper edge of the end wall in position to receive the flange 22 of the lid sections when they are closed over upon the top of the case. It will be understood that the slot weakens the end wall above the hand hole but that it is a necessary expedient which is of conventional construction.

It is the primary purpose of the slat 38 to reinforce the end wall portion above the hand hole against forces acting upwardly parallel to the plane of the end wall as the case is carried in level position with both hands inserted in the hand grip holes. Referring again to Figures 4, 5 and 6, it will be noted that each shield panel 35 is provided with a strip of adhesive material along its free edge as indicated at 43. Upon application of the adhesive, the panel is folded along score line 40 downwardly over upon slat 38 and upon the slat retaining flap 33 of the hand hole. This brings the glue strip 43 into contact with the interior surface of the end wall, permanently attaching the panel to the end wall with the panel overlying the slat and exerting clamping pressure upon the retaining flap and slat. It will be noted in Figure 6, that the partially severed light shield 37 is now in a position overlying the hand hole, with the end portions of the retainer flap, indicated at 44, extending beyond the confines of the shield and engaged by the panel proper. The shield panel thus provides the two functions of clamping the slat in position and of maintaining the

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light shade in erect position behind the hand holes. Since the light shade is only partially severed along the line 36, it resides firmly in position behind the hand hole but is free to be sprung inwardly to allow the hands to be inserted in the holes for carrying the case.

As shown in Figure 4, the blank is cut with the corrugations 45 extending longitudinally of the light shield panel, such that the corrugations extend across the intact portion of the shield 46 which joins the shield to the panel. This portion of the shield, which upon erection (Figure 1) resides at the lower edge of the shield constitutes a spring section which maintains the shield normally in closed position. Upon insertion of the hand in the hand grip hole, the flap springs readily to its open position, bending slightly along its intact lower portion, but insufficiently to cause permanent disruption of the fibers in the bending area. Accordingly, the shield, by operation of the corrugations, retains its springiness during the life of the case and remains in closed position at all times. It will be evident that the bending resistance of the shield is not excessive and that the presence of the shield does not interfere with the normal handling of the case either with one hand or with both hands.

It will be observed that the slat 38 provides a beam effect by virtue of its width, serving to distribute the forces acting against the upper portion of the hand hole. Although the slat is loosely maintained in position by frictional engagement, the gripping force applied against the slat retaining flap 33 of the hand hole clamps the slat under with sufficient firmness against the end wall to distribute the forces laterally and away from the slotted upper portion of the end wall when the case is carried. It will be understood that when the case is carried by one hand in a suspended position, then the forces act generally at right angles to the plane of the end wall and slat. However, in this case, the sectional lids are closed and their end flanges 23, which overlie the upper edge of the end wall, are effective to reinforce the upper wall portion against the forces acting to disrupt or tear the wall.

It will be noted that the light shield structure adds very little to the cost of the carton since it is cut as an integral part of the blank and is erected in a simple manner. Moreover, it provides the reinforcing effect as an incident to its erection simply by the insertion of the wood slat.

Having described my invention I claim:

1. A light shield structure for a beverage bottle case formed of paperboard material, the case having a bottom, side walls, end walls, and a pair of lid sections hinged to the upper edges of the side walls, said light shield structure comprising, an elongated slat retaining flap on each end wall, said flap being delineated by a line of severance and including curved opposite ends, the said line of severance delineating a hand hole, the slat retaining flap being intact along the upper edge of the hand hole, a light shield panel joined to the upper edge of each end wall, the panel folded inwardly and residing against the internal surface of the end wall and having its lower portion attached thereto, a light shield formed in each of said panels, said light shield delineated by a line of severance in the form of an arch having a curved upper portion, the lower portion of the light shield being intact with the said panel, said shield springing inwardly to accommodate the hand upon insertion thereof into the hand holes, a reinforcing slat extending across the end wall above the hand hole and reinforcing the same, the said slat retaining flap being folded inwardly and upwardly about the lower portion of said slat providing a lower portion loosely supporting the slat, said shield panel overlying the retaining flap, the curved portion of the line of severance of the shield passing upwardly about the slat retaining flap and intersecting the curved opposite ends thereof, the light shield panel engaging the opposite ends of the slat retaining flap and locking the same in retaining position relative to the slat, the curved upper portion of the light shield projecting upwardly a substantial distance

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above the upper edge of the hand hole, thereby to facilitate insertion and withdrawal of the hand through the hand hole.

2. A light shield structure for a beverage bottle case formed of paperboard material, the case having a bottom, side walls, end walls, and a pair of lid sections hinged to the upper edges of the side walls, said lid sections meeting at the center of the case, and having lid flanges overlying the upper edges of said walls when in closed position, each of said end walls having a hand hole formed therein, said light shield structure comprising a light shield panel joined to the upper edge of the end wall, the panel folded inwardly and residing against the internal surface of the end wall and having its lower portion attached thereto, a light shield formed in said panel and overlying the hand hole, said light shield delineated by a line of severance in the said panel, said line of severance being in the form of an arch, the lower portion of the light shield being intact with the said panel, said shield springing inwardly to accommodate the hands of the user, upon insertion thereof into the hand hole, a reinforcing slat extending across the end wall above the hand hole and reinforcing the same, an elongated slat retaining flap joined to the upper edge of the said hand hole, the flap having a curved lower portion passing under the slat and having a vertical portion engaging the side of the slat and loosely supporting the same, the said shield panel overlying the retainer flap and confining the same in said position, the curved lower portion of the retainer flap residing below the upper edge of the end wall a distance substantially equal to the combined widths of said slat and the said lid flange, the upper edge of the end wall along the center of the case including an open slot extending downwardly to the upper edge of said slat, the lid flanges of the meeting lid sections projecting into said slot and engaging and confining the said slat in the slat retaining flap in the closed position of the lid sections, whereby said lid flange overlies the upper edge of the end wall and coacts with the slat to reinforce the end wall.

3. A light shield structure for a bottle case formed of

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paperboard material, the case having a bottom, side walls, end walls, and a pair of lid sections hinged to the upper edges of the side walls, said lid sections meeting at the center of the case and having lid flanges overlying the upper edges of the end walls when in closed position, said light shield structure comprising a light shield panel joined to the upper edge of the end wall, the panel folded inwardly and residing against the internal surface of the end wall and attached thereto, a light shield formed in said panel and delineated by a line of severance in the form of an arch having a curved upper portion, the lower portion of the light shield being intact with the said panel, an elongated hand hole in the end wall residing within the confines of the light shield, said shield springing inwardly to accommodate the hand of the user, a reinforcing slat extending across each end wall above the hand hole, a slat retaining flap joined to the upper edge of the hand hole, the flap folded inwardly and upwardly about the lower portion of said slat and loosely supporting the same, said shield panel overlying the retaining flap, and locking the same in said position, the upper curved portion of the line of severance of the shield passing upwardly about the retaining flap and intersecting the opposite ends thereof, the curved upper portion of the shield projecting upwardly a substantial distance above the upper edge of the hand hole, the upper edge of the reinforcing slat residing below the upper edge of the end wall, the upper edge of the end wall including an open slot extending downwardly to the upper edge of said slat, the lid flanges projecting into said slot and confining the slat in the said retaining flap when the lid sections are in closed position.

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