

[54] **SUPPORT AND DISPLAY CARTON FOR PARABOLIC LAMP**

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[51] Int. Cl. **B65d 5/10**

[58] Field of Search **229/39 B; 206/45.14**

[56] **References Cited**

UNITED STATES PATENTS

3,337,033	8/1967	Cote.....	229/39 B X
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FOREIGN PATENTS OR APPLICATIONS

706,470	3/1941	Great Britain	229/39 B
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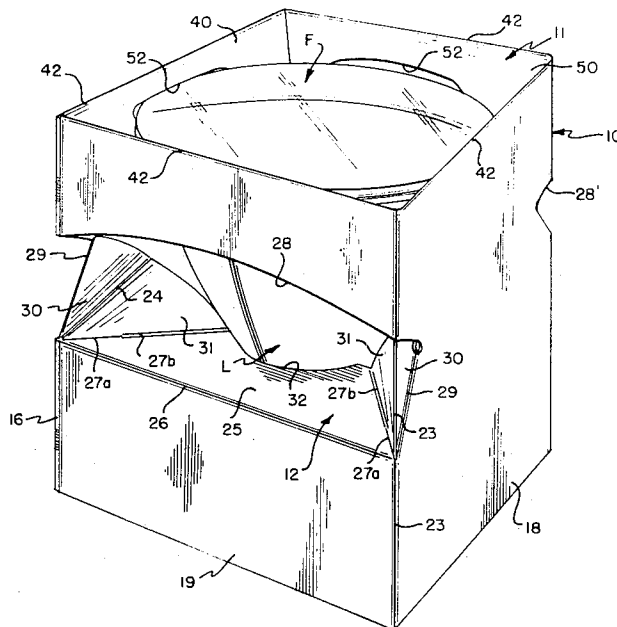
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[57] **ABSTRACT**

An open-ended carton sleeve for packaging a parabolic lamp bulb is disclosed herein. The sleeve includes a pair of yoke-like platforms suspended centrally therein from hinged gusset flaps extending inwardly from opposite side walls and a mitered frame-like structure of folded shadow panels at the upper edges of the sleeve. The bulb is supported, cushioned, and displayed in the sleeve by the frame and the platform structures.

4 Claims, 5 Drawing Figures



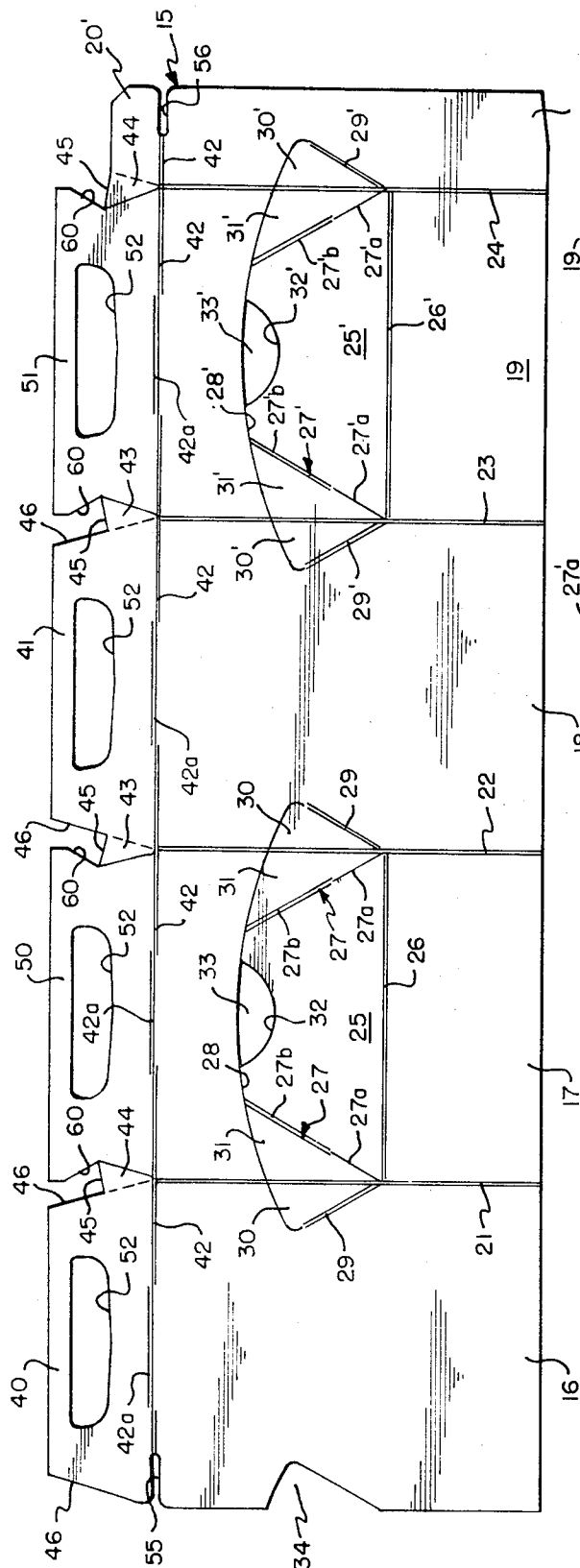


FIG. 1

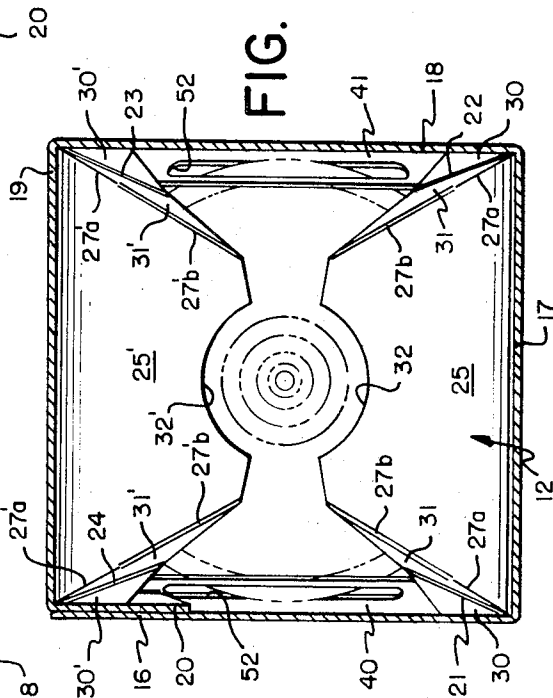
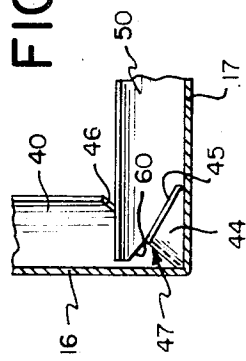


FIG. 4

FIG. 5



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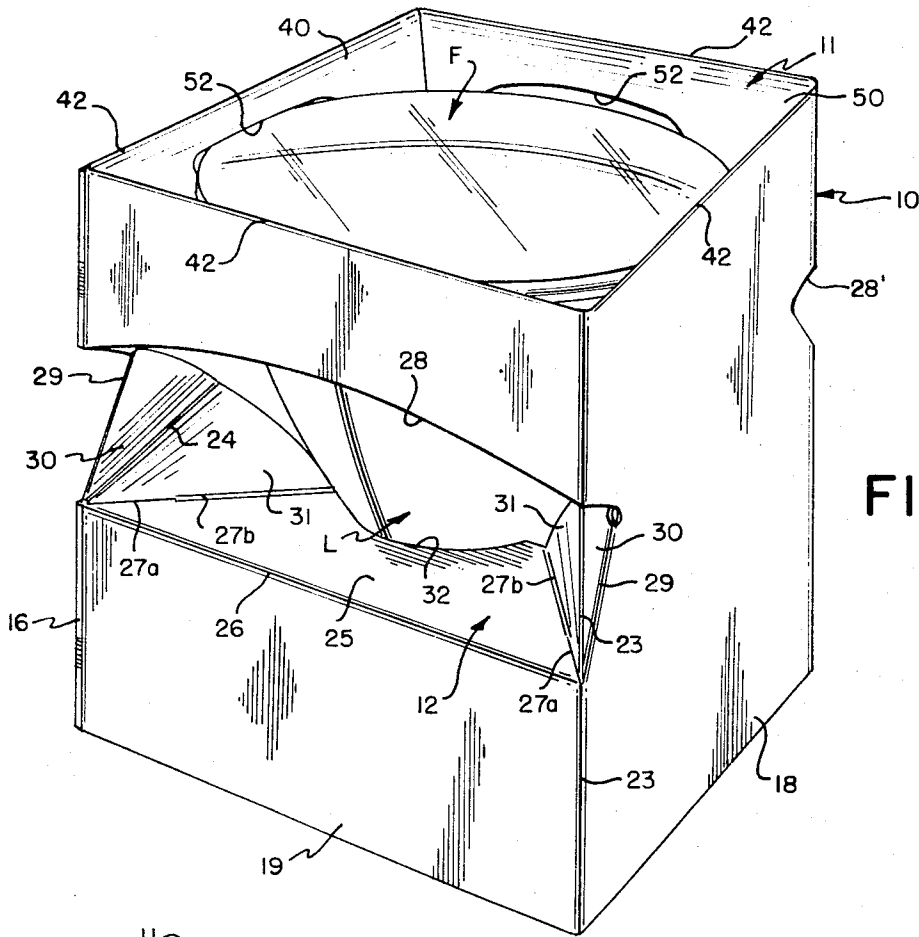


FIG. 2

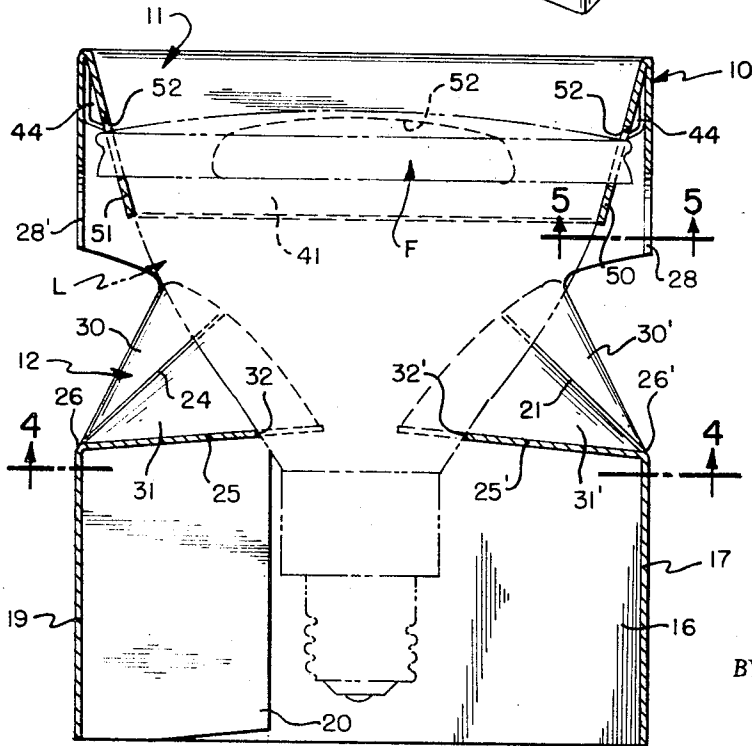


FIG. 3

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SUPPORT AND DISPLAY CARTON FOR PARABOLIC LAMP

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to the packaging of lamp bulbs and more specifically, provides a paperboard carton sleeve having unique folded structures for supporting a so-called "parabolic" or "par" type bulb in a safely cushioned and attractively displayed manner.

Specifically, the carton of the invention securely retains and cushions a parabolic bulb in an open-ended tubular sleeve of square cross-section. The bulb is supported between longitudinally spaced structures which tend to clamp resiliently therebetween the neck and flange portions of the lamp bulb. In the new carton, a yoke structure, comprising a pair of lightly, upwardly biased platforms, supportingly engages the neck of the light bulb and tends to urge it upwardly within the carton while a rigid, "mitered" frame structure comprised of four interlocked shadow panels supportingly engages the enlarged flange of the light bulb and locks the same in recessed relation to the upper edges of the carton sleeve. In accordance with the invention, the desired supporting and cushioning effects of the bulb-engaging structures are derived from their specific folded configurations which utilize the natural resilience of the paperboard. Moreover, when erected, the bulb engaging structures, themselves, act to rigidify the overall carton structure and to enhance its resistance to crushing.

As a further important aspect of the invention, the flange supporting structure is specifically designed to engage, retain and display the face of the bulb at the upper end of the carton. The biasing or yoke structure for engaging the neck of the bulb advantageously may be similar to that disclosed in Cote U.S. Pat. No. 3,337,033, issued Aug. 22, 1967.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention, and better appreciation of its attendant advantages, reference should be made to the following detailed description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a plan view of a blank from which a carton embodying the principles of the present invention may be erected;

FIG. 2 is a perspective view of the new carton formed from the blank of FIG. 1 with a parabolic light bulb packaged therein;

FIG. 3 is a vertical cross-sectional view of the new carton;

FIG. 4 is a cross-sectional view of the carton taken along line 4—4 of FIG. 3; and

FIG. 5 is a fragmentary cross-sectional view of interlocked shadow panels taken along line 5—5 of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

Referring initially to FIG. 2, the new carton of the invention is shown in a perspective view with a parabolic reflector lamp L supported therein for display. As shown, the new carton 10 comprises a four walled sleeve of square cross-section, which supports the large diameter face F of the bulb in recessed fashion at the upper end of the carton in a "mitered", frame structure 11. The lower portions of the neck of the lamp are sup-

ported and cushioned by a yoke structure 12 derived from intermediate portions of a pair of opposite walls of the sleeve 10.

More specifically, and with reference now to FIG. 1, the new carton sleeve 10 of the invention is derived from a blank 15, which comprises a first side wall panel 16, a front wall panel 17, a second side wall panel 18, a rear wall panel 19, and a glue flap panel 20 consecutively articulated along vertical score lines 21—24. A yoke platform panel 25 is formed in the front wall panel 17 by a horizontal score line 26 extending between adjacent consecutive vertical score lines 21, 22, a pair of converging weakened lines 27, (including cuts 27a and scores 27b) and a cut 28. The lines 27 extend from the intersections of the score line 26 with the vertical score lines 21, 22 to the arcuate cut 28 which extends completely across the front wall panel 17 and into the adjacent side wall panels 16 and 18, as shown. Two divergent score lines 29 extend from the intersections of the score line 26 with the score lines 21, 22 upwardly to the ends of the arcuate cut 28. The aforementioned cut 28 and the score lines 21, 22, 27 and 29 form two pairs of hinged gusset panels 30, 31, which, as will be described hereinafter, are adapted to suspend the platform 25 inwardly of the erected carton sleeve. A second or twin yoke panel 25' identical in all respects to the first described yoke panel 25 is formed in the rear wall panel 19 by elements corresponding to those described in detail hereinabove and identified by similar but primed reference numerals. Advantageously, the platform panels 25, 25' are provided with yoke-like, bulb-engaging contours 32, 32' by the removal therefrom of a semi-circular portion 33, as shown in FIG. 1.

The first side wall panel 16 has a portion 34 removed from its free edge, as shown, to accommodate the free folding of the gusset flap 30' formed in the glue flap panel 20 when it is subsequently adhered to the panel 16 in carton tube formation.

Articulated to the first and second side wall panels 16, 18, respectively, are generally trapezoidal shadow panels 40, 41, respectively. The shadow panels are articulated along a generally horizontal score line 42 which is definitive of the upper edge of the carton sleeve in its erected configuration. At the central portions of each panel 16—19, the score line 42 includes a slightly offset line portion 42a which will enhance arching of the shadow panels in carton formation, as will be understood. Articulated to the lower side edges of the shadow panel 41 are a pair of locking ears 43. A similarly shaped locking ear 44 is hinged to a lower corner edge of the trapezoidal shadow panel 40, while a twin locking ear 44 is hinged to a glue flap extension 20' articulated to the upper edge of the glue flap 20 along the score line 42, as shown in FIG. 1. As will be appreciated, when the glue flap 20 and its extension 20' are adhered to the first side panel 16 and the trapezoidal shadow panel 40, the first side panel 16 and its associated panel 40 will effectively have the same configuration and structure as the second side wall panel 18 and its associated trapezoidal shadow panel 41.

Each of the locking ears 43, 44 has a free upper edge 45 which is disposed at an angle to the side edges 46 of the trapezoidal panels 40, 41. The edges 45, 46 form a locking notch 47, as will be understood. More specifically, the upper edges 45 of the locking ears 43, 44 terminate within the general outline of the shadow panels 50, 51, which are articulated to the front and rear wall

panels 17, 19 respectively. The remaining free edges of the ears 43, 44 extend obliquely from the corners of the upper edges 45 downwardly to each of the upper four corners of the sleeve. The sleeve upper corners are, of course, defined by the intersections of the vertical score lines 21-24 with the horizontal score line 42.

In accordance with the principles of the invention, each of the upper shadow panels 40, 41, 50, 51, has an identical article engaging opening (in the case of a parabolic lamp, a flange engaging opening), 52 formed therein. The contour and shape of the opening 52 will, of course, be dictated by the specific shape of the article to be supported, engaged, and cushioned in the mitered shadow box structure 11 of the invention. Thus, while the openings 52 are shown in the form of cut-outs in FIG. 1, it will be appreciated that in certain circumstances it may not be necessary or desirable to remove completely, the board from the blank to define the openings 52. Instead, it may be desirable or necessary to have simple cuts or pairs of cuts through which an article may project.

The new carton sleeve 10 of the invention is formed as follows: The main panels 19, 20 and their associated shadow panels are folded over the main panels 18, 17 by folding the right hand end of the blank (as viewed in FIG. 1), about the vertical score line 23. Thereafter, the panels 16 and 40 are folded about the vertical score line 21 into superimposition with the underlying glue flap 20 and glue flap extension 20'. The superimposed portions are conventionally adhesively secured to one another. Advantageously, and as shown in FIG. 1, horizontal notches 55, 56 are formed at the free edges of the panels 20 and 16, colinear with the horizontal score line 42 in a manner such that the superimposed panels 16 and 20 have only a single thickness of board in the area of the horizontal crease line 42 to facilitate subsequent folding, as will be understood. The aforementioned folding and gluing operations complete the formation of a flattened carton tube, which thereafter may be simply erected by applying pressure to opposite vertical edges of the flattened tube to square the sleeve.

Once the tube is squared, the carton may thereafter be completed by first folding the yoke panels 25, 25' inwardly of the carton sleeve. The platforms 25 and 25' will be suspended from the opposite side walls 16 and 18 by the pairs of hinged gusset panels 30, 31 and 30', 31', as shown in FIGS. 2, 3 and 4. The top structure of the carton for engaging and supporting the flange F of a parabolic reflector lamp is then formed by infolding the trapezoidal shadow panels 40, 41, the effect of which is to fold the ears 43, 44 generally at right angles to the panels 40, 41. Thereafter, the shadow panels 50, 51 are depressed until the locking shoulders 60 (formed therein by the folding of the ears 43, 44), engage and lock with the locking notches 47, as shown best in FIG. 5. At this stage, the top structure will be completely interlocked and formed into a mitered frame display structure having four article engaging and supporting openings 52, as shown in FIGS. 2 and 3.

Advantageously, the sizes and geometry of each of the shadow panels 40, 41 and 50, 51, and the sizes and configuration of the locking ears 43, 44, locking notches 47 and locking shoulders 60, are such that each of the shadow panels are held in compression and arched or bowed by the adjacent neighboring panels.

The offset score line portions 42a contribute to the arching of the panels 40, 41 and 50, 51.

After the carton is completely erected in the manner described hereinabove, a parabolic lamp or other fragile article to be displayed in a safe and attractive, cushioned manner, is merely inserted through the top end until the lower portions of the lamp engage the supporting platforms 25, 25' and the flange F simultaneously is snapped into the openings 52, as shown in FIGS. 2 and 4. Most importantly, the flange of the bulb is supported and, in effect, suspended by the edges of the openings 52. Thus, the platform panels 25, 25' do not bear the full load of the weight of the bulb. It is particularly advantageous that the new carton may be completely squared and erected before the fragile article is inserted, assuring that the cushioning and supporting arrangement is fully and properly erected and set up prior to the insertion of the lamp therein. Heretofore, it has often been necessary to partially erect the carton, then to insert the lamp, and finally to complete the erection of the supporting structure after the article to be packaged has been inserted therein and unduly handled.

As will be appreciated, the new structure firmly cushions and supports a parabolic type of light bulb while attractively displaying the same. The bulb may be observed through two windows formed by the erection of the platforms 25; the bulb may be observed through the lower end of the open sleeve as shown in FIG. 4; and the upper face of the bulb may be observed as it is cushioned and attractively supported in a mitered frame-like shadow panel arrangement, as shown in FIG. 2.

It is to be understood that the specific embodiment herein described is intended to be representative only, as certain changes may be made therein without departing from the clear teachings of the disclosure. Accordingly, reference should be made to the following appended claims in determining the full scope of the invention.

I claim:

1. A display carton comprising
 - a. a rectangular sleeve having a first side, front, second side, and rear wall panels consecutively articulated along vertical score lines;
 - b. generally trapezoidal first foldable shadow panels hinged to the upper edges of said first and second side wall panels;
 - c. locking ears articulated to the lowermost side edges of said trapezoidal shadow panels;
 - d. the outermost edges of said trapezoidal panels being less than full wall panel width;
 - e. second foldable shadow panels hinged to the upper edges of said front and rear wall panels;
 - f. the outermost edges of said second foldable shadow panels being substantially rectangular in configuration and being of full wall panel width;
 - g. the side edges of said second foldable shadow panels defining locking notches adapted to receive said locking ears;
 - h. said first and second foldable shadow panels when infolded defining a mitered, frame-like, interlocked structure;
 - i. at least one pair of said foldable shadow panels including elongated apertures, the edge portions of which apertures are adapted to engage an article to be supported and displayed.
2. The carton of claim 1, in which

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- a. the outermost edges of all of said shadow panels are of predetermined length sufficient to maintain said shadow panels in side-to-side compression when infolded and interlocked.
- 3. The carton of claim 1, in which
 - a. said mitered, frame-like structure is adapted to engage and support the face portions of a parabolic lamp;
 - b. an integral, infolded yoke structure derived from

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- intermediate portions of said sleeve is provided for supporting lower portions of said lamp, and
- c. the infolding of said yoke structure forms a display window for said lamp.
- 4. The carton of claim 1, in which
 - a. said locking notches include surfaces having substantially identical slopes to those of the side edges of said trapezoidal shadow panels.

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