

June 9, 1964

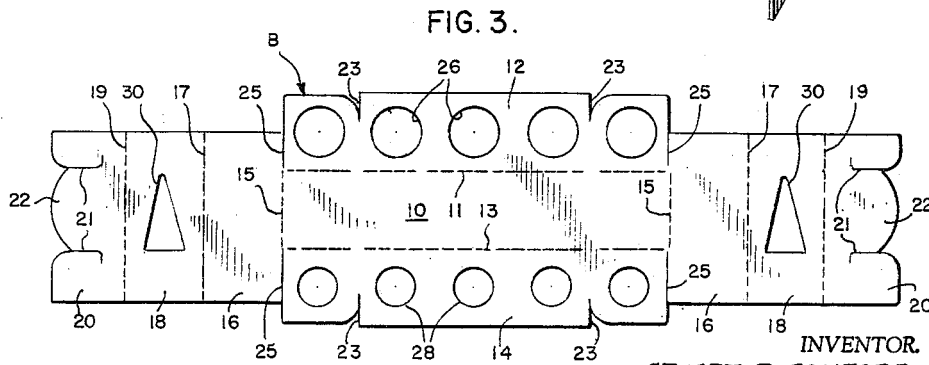
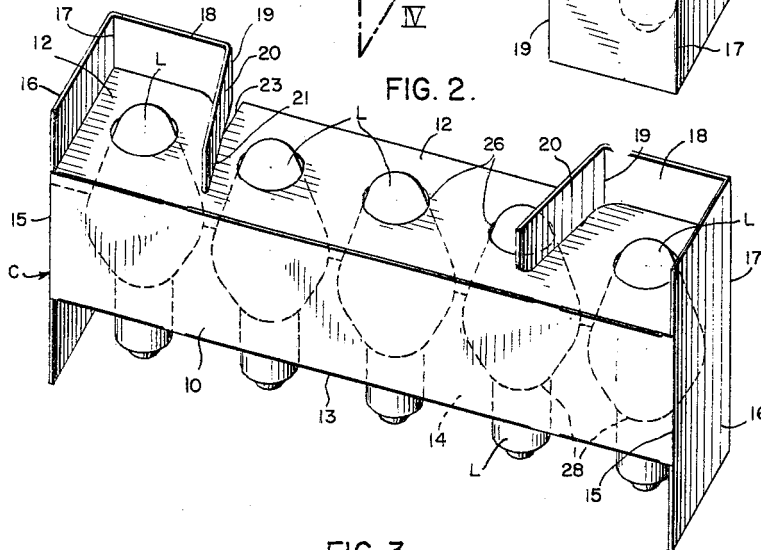
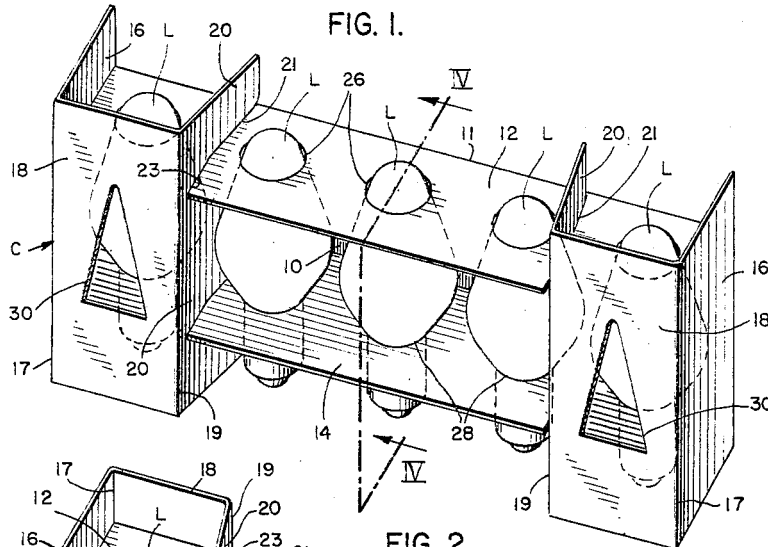
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3,136,410

PACKING AND DISPLAY CARTON

Filed Feb. 21, 1962

2 Sheets-Sheet 1



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FIG. 4.

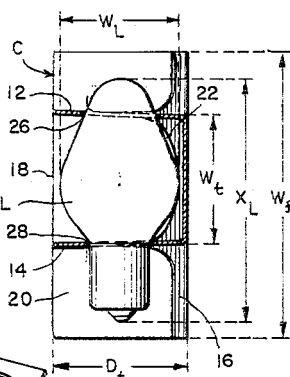


FIG. 5.

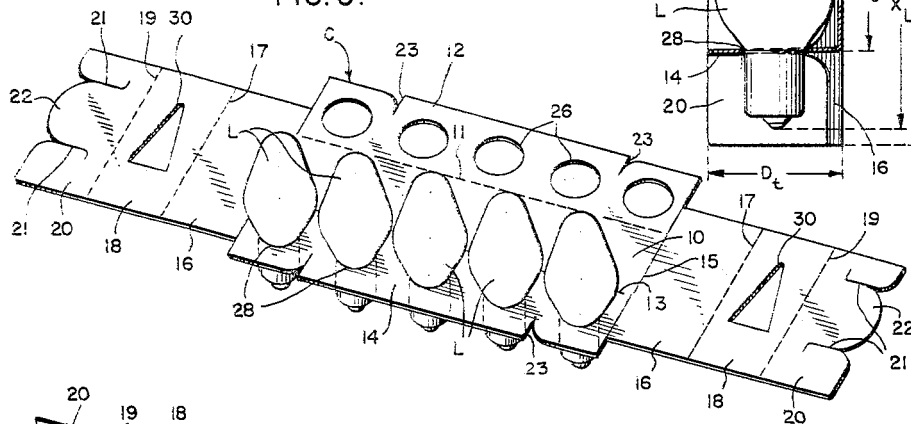


FIG. 6.

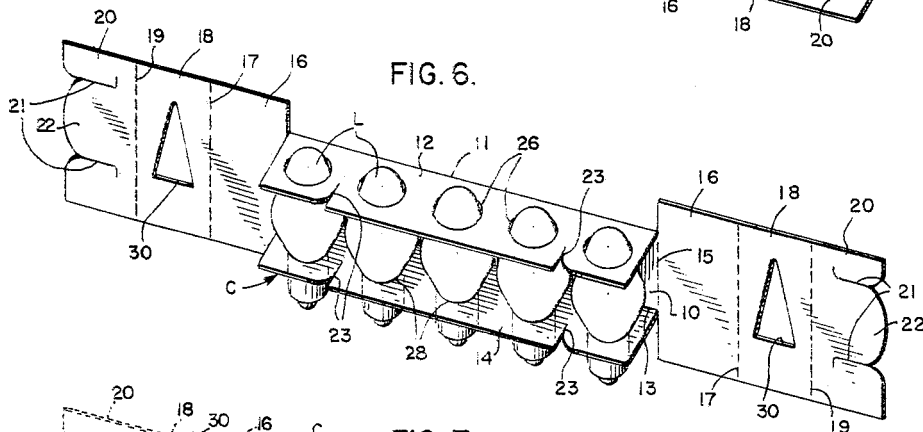
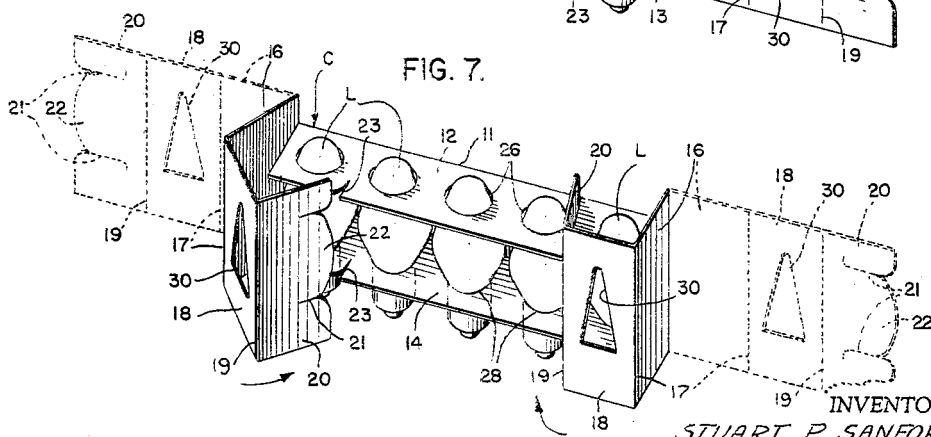


FIG. 7.



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PACKING AND DISPLAY CARTON

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This invention relates to packaging and, more specifically, to a carton and method for protectively packaging and displaying a plurality of articles such as miniature electric lamps or the like.

Due to rising material and labor costs and the trend toward more attractive packaging, the design of suitable cartons for fragile articles, such as miniature electric lamps and the like that are generally sold in groups rather than singly, has become more important and more difficult in recent years. In order to be practical economically the carton must provide the required degree of protection with a minimum of packaging material and be so designed that it can be quickly assembled and loaded. To be acceptable from a marketing standpoint, the carton must also be attractive and permit the potential purchaser to view and examine the packed articles without inviting their removal or pilfering.

While the prior art cartons of this type provide adequate protection and, in some cases, sufficient product visibility, they require relatively large amounts of packaging material and/or are complicated to make and assemble. In those cases where the packed articles are viewable, they can very easily be removed from the carton or are very easily displaced from their loaded positions. As a result, elaborate and expensive means were heretofore frequently employed to lock the articles within the carton thus rendering the loading operation a tedious and time-consuming one.

With the foregoing in mind, it is the general object of the present invention to provide an improved carton for packaging a plurality of fragile articles that avoids the foregoing deficiencies and disadvantages of the prior art.

Another object is the provision of a packing and display carton that can be economically fabricated and readily assembled and loaded.

A further object is the provision of a method of protectively packaging a plurality of fragile articles with a minimum amount of labor and material.

Still another object is the provision of a package containing a plurality of articles, such as miniature electric lamps, that is compact and has a pleasing appearance and wherein the articles are exposed to view, but adequately protected.

Briefly, the aforesaid objects, and others which will become apparent as the description proceeds, are achieved according to the invention by providing a carton having a tray-like body portion with flaps at each end that are returned and interlocked with the tray portion. The returned flaps hold the carton in assembled formation and form hollow columns at each end that provide a solid and stable base for the carton and protect the packed articles. The ends of the packed articles are inserted into apertures provided in the sides of the tray and are located so that the articles are suspended within the tray and recessed behind the support columns. The tray and flap portions cooperate in such a manner that the articles are loaded into the carton and the latter locked in assembled display formation therewith by means of a few simple steps.

A better understanding of the invention will be obtained from the accompanying drawings, wherein:

FIGURES 1 and 2 are front and rear perspective views, respectively, of a five-lamp package according to the invention;

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FIG. 3 is a plan view on a reduced scale of a blank from which the carton shown in FIGS. 1 and 2 is formed;

FIG. 4 is a cross-sectional view along the line IV—IV of FIG. 1, in the direction of the arrows; and,

5 FIGS. 5 to 7 are perspective views on a reduced scale illustrating the manner in which the carton is loaded, set up, and then locked in assembled display relation with the packed lamps.

10 While the invention may be advantageously used to package various kinds and sizes of articles which lend themselves to this type of pack-merchandising, it is especially adapted for use in conjunction with miniature incandescent lamps, such as Christmas tree lamps or the like, where an attractive point-of-purchase display package containing several lamps is desired and the invention has, accordingly, been so illustrated and will be so described.

THE INVENTION

20 With specific reference to the drawings, in FIGS. 1 and 2 there is shown a five-lamp package according to the present invention wherein five Christmas tree lamps L are held in spaced upstanding single-row formation by means of a carton C having a body portion that comprises an elongated tray. This tray extends transversely of the row of lamps and consists of a central panel 10 and a pair of hinged side panels 12 and 14 that are coextensive with and disposed at approximately right angles to the central panel so as to form the sides of the tray. A series of spaced lamp-retaining apertures 26 are provided in the side panel 12 and a corresponding number of apertures 28 are provided in the other side panel 14. The base ends of the lamps L are seated in and extend through the apertures 28 and the tips of the lamps extend through the apertures 26. The apertures are aligned with one another and are so spaced that the lamps are mechanically locked within the tray and separated from one another.

30 As shown more particularly in FIG. 4, the tray is of channel-like configuration, that is, of U-shaped cross-section, and contains the intermediate bulbous portions of the lamps L.

The aforesaid central and side panels are locked in tray formation around the single row of lamps L solely by means of hinged tabs 16, 18 and 20 at each end of the carton, which tabs form a longitudinally depending end flap that is hinged to the end of the central panel 10. The end flaps are bent around the respective ends of the tray and are provided with a pair of slits 21 at their free ends which are interlocked with peripheral slits 23 in the side panels 12 and 14.

45 As illustrated in FIG. 3, the carton C is preferably and conveniently fabricated from a single piece of relatively stiff sheet material, such as paperboard or the like, that is cut to form a blank B having, in general, a rectangular medial portion and the aforementioned longitudinally depending end flaps. The medial portion is divided by longitudinal score lines 11 and 13 into the aforesaid central panel 10 and side panels 12 and 14. Each of the end flaps are, in turn, divided by transverse score lines 17 and 19 into the tabs 16, 18 and 20 previously referred to. The flaps are hingedly connected to the central panel 10 by means of another transverse score line 15. The flaps are also considerably wider than the central panel 10 and are separated from the adjacent parts of the side panels by means of cut lines 25. The centrally located tabs 18 are preferably provided with openings such as triangular-shaped apertures 30 that serve as windows through which the end lamps in the assembled and loaded carton can be viewed.

60 The outermost tabs 20 are provided with a pair of parallel slits 21 that extend inwardly toward the central panel 10 and define an arcuate tongue 22 of substantially the same width as the central panel. Each of the side

panels 12 and 14 are also provided with a pair of slits 23 located proximate to but inwardly from the ends of the panels. These slits extend from the side edges of the respective side panels toward the central panel 10 approximately midway between the outermost pairs of lamp-retaining apertures in the respective side panels.

It should be noted that the outer portions of the side panels 12 and 14 adjacent the locking slits 23 are rounded off to form an arcuate edge or lip. This configuration causes the outermost tab 20 to be canted at a slight angle toward the center of the carton C when the end flaps are insertably locked with the side panels (see FIGS. 1 and 2).

As is illustrated in FIG. 4, the width W_f of the end flaps is considerably greater than the overall length X_L of the lamps L. In contrast, the width W_t of the tray (that is, the width of the central panel 10) is considerably less than the overall length X_L of the lamps. The depth D_f of the tray (that is, the width of the side panels) is considerably greater than the maximum diameter or width dimension W_L of the lamps.

By virtue of their much larger dimensions, the end flaps, when folded around the ends of the tray and interlocked with the side panels, form hollow pier-like support columns at each end of the carton that protrude beyond the ends of the lamps L, as shown most particularly in FIGS. 1 and 2. The columns have a span such that they not only rigidify the ends and tray portion of the carton, but provide a very stable and solid base that enables the carton to stand upright. This construction reinforces the carton and, since the lamps are suspended therein and completely recessed within its confines, protects the lamps from damage should the loaded carton be dropped on a flat surface.

SPECIFIC EXAMPLE

As a guide for those wishing to practice the invention, the critical dimensions of a carton designed to hold five miniature Christmas tree lamps of the type here illustrated are given below in Table 1. It is to be understood that these dimensions are given merely by way of example and not by way of limitation.

Table 1

Component:	Dimension (inches)
Lamp—maximum diameter (W_L)	$\frac{15}{16}$
Lamp—overall length	2
Carton—overall length	5
Width of tray (W_t)	1
Depth of tray (D_t)	1
Width of locking flaps (W_f)	$\frac{23}{16}$
Overall length of locking flaps	$2\frac{31}{32}$
Distance between center lines of adjacent apertures	1

LOADING AND ASSEMBLY

The manner in which the carton is loaded and assembled is shown in FIGS. 5 through 7. The first step involves inserting the base ends of the lamps L into the apertures 28 in the side panel 14 of the carton C while the latter is in blank or collapsed form. These apertures are so dimensioned that they are slightly larger than the base ends so that the lamps can be easily inserted and yet are held in upstanding parallel relation, as shown in FIG. 5.

The central panel 10 is then folded along the longitudinal score line 13 and swung into upstanding position, whereupon the other side panel 12 is bent along the other longitudinal score line 11 into generally parallel relation with the other side panel and the tips of the lamps L are concurrently guided through the apertures 26. These apertures are considerably larger than the tips of the lamps L so that the latter slip into the apertures even though the lamps may not be exactly parallel to each other initially. The interaction between the tapered ends of the lamps and the respective apertures is such that the lamps are automatically positioned in parallel upstanding

position as the side panel 12 is swung downwardly. The tray is thus folded around and anchors both ends of the lamps, as shown in FIG. 6.

The final step in the assembly and loading operation is illustrated in FIG. 7 and, as there shown, involves bending first one and then the other of the end flaps along the transverse score lines 15, 17 and 19, in that order, and forcibly inserting the slits 21 in the end tabs 20 into the peripheral slits 23 in the side panels. The end flaps are accordingly, folded in a direction opposite to that in which the side panels move when erected. This forces the tongue 22 into the tray between the outermost pairs of lamps and completes the loading and assembly operation.

Since the lamps are temporarily supported in upstanding position by the side panel 14 during the initial stage of assembly and are subsequently oriented and locked when the second side panel 12 is swung into position over the opposite ends of the lamps, it will be apparent that the loading and assembly operation is a very simple one that can be readily performed on a mass-production basis either manually or by an automatic packaging machine. The fact that the base ends of the packed lamps are exposed affords an additional advantage in that the lamps may be tested, if desired, without removing them from the carton.

It will be appreciated from the foregoing that the objects of the invention have been achieved by providing a carton that can be very conveniently and economically fabricated and which forms an attractive "point-of-purchase" display unit that protects the packed articles without exposing them to the danger of pilfering. A method for quickly and neatly packaging a plurality of fragile articles such as miniature electric lamps or the like is also provided.

While a preferred form of the invention has been illustrated and described in detail, it will be appreciated that various structural and procedural modifications can be made without departing from the spirit and scope of the invention.

I claim as my invention:

1. A package comprising a carton and a plurality of articles packed therein; said articles having bulbous intermediate portions and being arranged in side-by-side upstanding formation; said carton comprising a central panel and two hinged side panels arranged to form a tray of U-shaped cross section that extends transversely of said packed articles and contains the bulbous intermediate portions thereof, the width of said tray being less than the length of said packed articles and the constricted ends of the latter being seated in and extending through spaced apertures in the sides of the tray formed by said side panels whereby said articles are held in spaced apart relationship by said tray, flaps hinged to the end of said central panel and extending around the ends of said tray, the ends of said flaps having slits therein that are interlocked with slits in the side edges of side panels, the width of said flaps being greater than the width of said tray and greater than the length of said packed articles whereby said flaps, in addition to locking the central and side panels in tray formation around said packed articles, provide hollow pier-like support columns at each end of the carton that extend beyond both ends of the packed articles and thus protectively recess said articles behind the outer edges of said support columns.

2. A package comprising a carton and a single row of electric lamps packed therein; said lamps having a constricted base portion at one end and a constricted bulb tip at the other end and being disposed in spaced side-by-side relationship; said carton comprising a central panel, a pair of side panels hinged to said central panel and disposed at approximately right angles thereto so as to provide a tray of U-shaped cross-section that is longer than said row of lamps and contains the bulbous intermediate portions thereof, the width of said tray being less than the length of the packed lamps and the con-

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stricted ends of the latter being seated in and extending through spaced apertures in the sides of said tray whereby said lamps are mechanically locked in loaded position within said carton, a flap hinged to each end of said central panel, each of said flaps being wider than said tray and comprising three generally rectangular tabs that are hingedly connected together and folded around the respective ends of said tray, the outermost ones of said tabs having a pair of slits therein that engage and are frictionally interlocked with peripheral slits in the sides of said tray, said carton being locked in assembled upstanding formation solely by means of said inturned flaps and the latter, by virtue of their greater width dimension, providing hollow pier-like supports at each end of the carton that extend beyond both sides of the tray and both ends of the packed lamps and thus protect said lamps without enclosing the base portions thereof.

3. The method of packaging a plurality of miniature electric lamps having bulbous intermediate portions and a base at one end, which method comprises, providing an elongated tray having a central panel and two apertured side panels that are collapsible along longitudinal score lines into a common plane with said central panel and erectable from such position to form the sides of said tray, said central panel having a flap hinged to each of its ends that is foldable along transverse score lines and has slits in its free end adapted to interlockingly engage peripheral slits located proximate the respective ends of each of said side panels, inserting the base ends of said lamps into and through the apertures in one of said side panels so that the lamps are supported in upstanding position thereby, erecting said side panels along said longitudinal score lines and concurrently guiding the opposite ends of said lamps into and through the apertures in the other of said side panels so as to anchor said lamps at both ends and lock them within the tray thus formed, and then folding first one and then the other of said flaps upon said transverse score lines around the respective ends of the loaded tray and forcibly inserting the slit ends of said flaps into the peripheral slits in said side panels thereby locking said carton in assembled upstanding position and said lamps in spaced-apart display formation therein.

4. A packing and display carton comprising: a central panel; a pair of side panels hinged to said central panel and

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movable from coplanar to upstanding position to form with said central panel a tray of generally U-shaped cross-section; each of said side panels having a plurality of apertures therein adapted to receive the opposite ends of a row of bulbous articles when the side panels are erected and thus lock the articles in spaced apart relation within the formed tray; said apertures being spaced inwardly from each of the edges of the respective side panels so that the contained articles will be spaced from the sides and ends of the tray; an end flap hinged to and extending longitudinally from each of the ends of said central panel; each of said end flaps being wider than and extending beyond both sides of said central panel; a pair of slits in each of the free ends of said end flaps that extend toward the central panel and define a tongue of substantially the same width as the central panel; and a slit located at but inward from each end of said side panels that extends toward the central panel and is adapted to interlock with one of the slits in the end flap attached to that end of the carton; said end flaps being foldable along transverse score lines over the respective ends of the tray formed by the central and erected side panels; the dimensions of said end flaps relative to said tray being such that the slit ends of said end flaps are insertable into interlocking relationship with the slit portions of said tray and said end flaps, when thus inturned, define rigid upstanding hollow supports at each end of the tray which, in addition to locking the carton in erect position, protrude beyond both sides of the tray and provide a pair of stable and protective pier-like base members for the carton.

5. A packing and display carton as set forth in claim 4 wherein; each of said end flaps comprise three hinged tabular sections, and the centrally located tabular sections are provided with a window opening.

6. A packing and display carton as set forth in claim 4 fabricated from a single piece of relatively stiff packaging material.

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