

June 14, 1966

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3,255,879

CONTAINERS FOR ELECTRIC LIGHT BULBS

Filed Jan. 10, 1964

2 Sheets-Sheet 1

FIG. 1

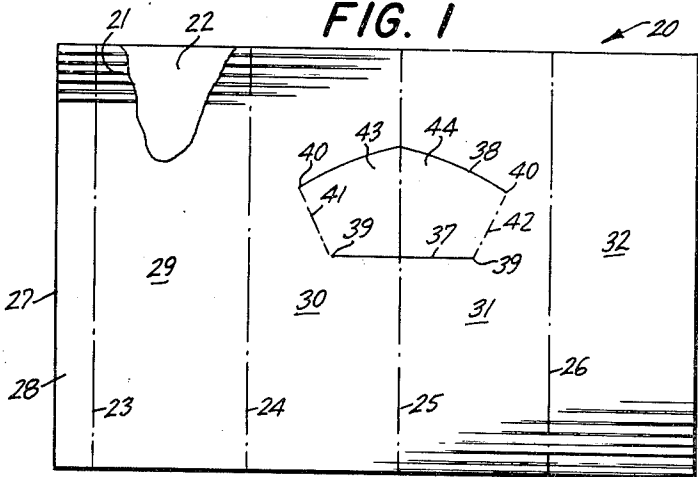


FIG. 2

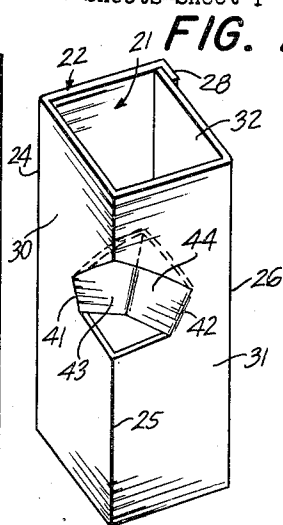


FIG. 3

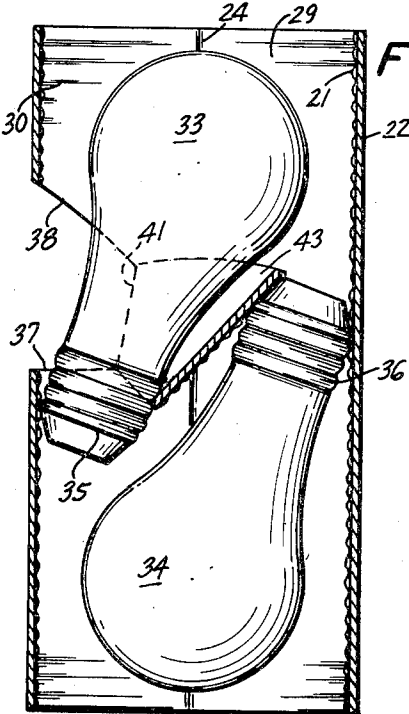


FIG. 5

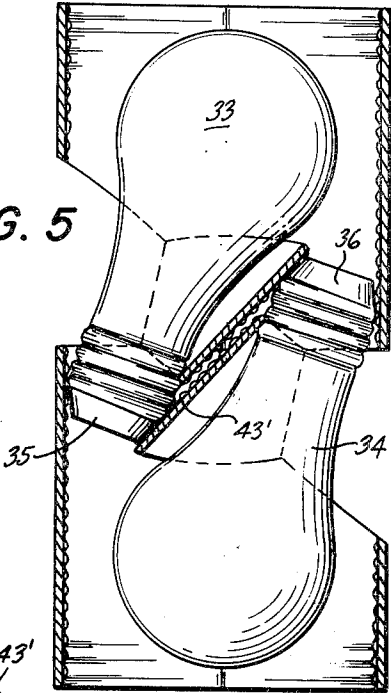


FIG. 4

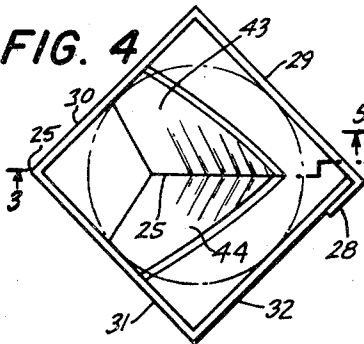
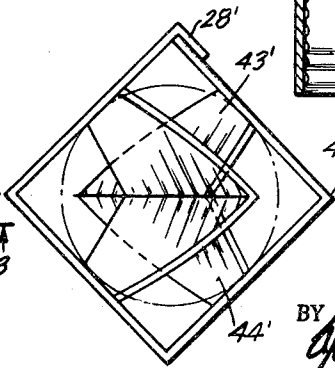


FIG. 6



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FIG. 7

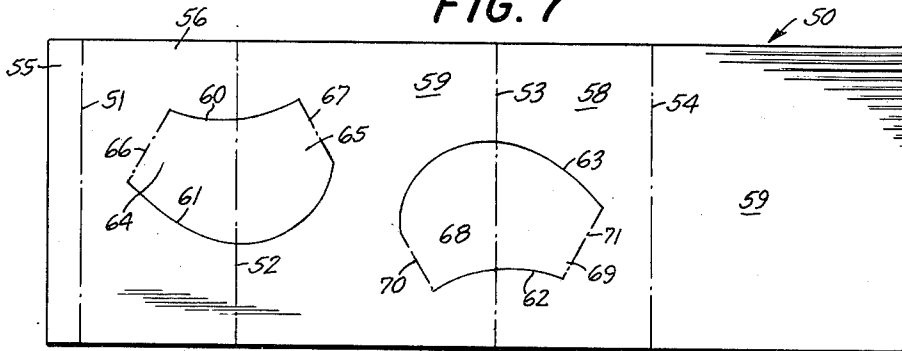


FIG. 8

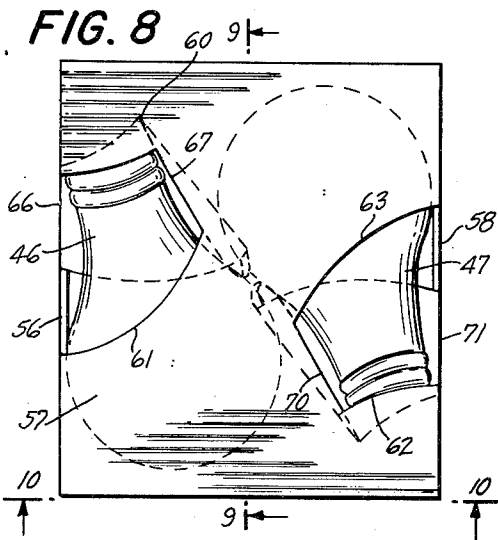
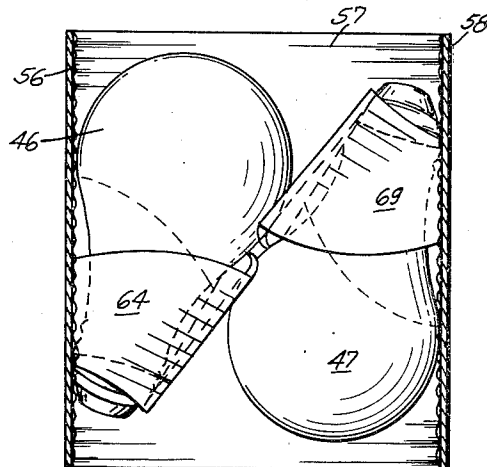


FIG. 11

FIG. 10

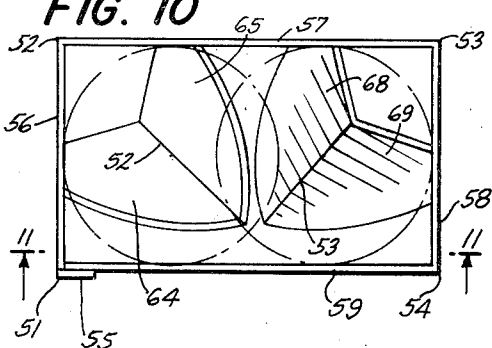
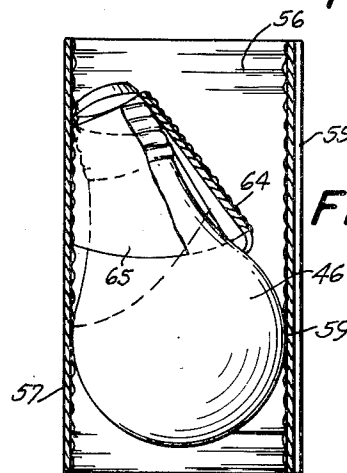


FIG. 9

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CONTAINERS FOR ELECTRIC LIGHT BULBS

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Filed Jan. 10, 1964, Ser. No. 336,950

8 Claims. (Cl. 206-65)

This invention relates generally to containers for electric light bulbs, and has particular reference to the inexpensive throw-away type of protective container which consists essentially of a simple cardboard sleeve or tube within which one or more of the bulbs may be accommodated.

The invention is primarily directed to improved sleeve-type containers intended for the accommodation of two bulbs, but some phases of the invention make it applicable to containers intended for single bulbs or for more than two.

It is a general object of the invention to provide a cardboard bulb container having improved structural features which make it less costly to manufacture than conventional containers of comparable kind, more efficient and reliable in enclosing the bulb or bulbs in adequately protected fashion, and more appealing and effective from a merchandising standpoint.

The improved construction has planar walls connected along corners, and is characterized by the provision of an integral formation which defines a quadrilateral receptacle on the interior of the sleeve for accommodating the base of a bulb to be housed in the container. The receptacle is created by the provision of a pair of spaced slits intersecting one of the corners of the tube or sleeve, defining a section between them consisting of a pair of panels hingedly joined along the corner across which the slits extend. Fold lines joining adjacent slit ends make it possible to buckle the section into the sleeve to bring its two panels into a reentrant disposition. Together with the walls to which they are hingedly connected by the fold lines these panels define the base-holding receptacle. The slits are of such lengths that the bulb base can be insertedly bodily into the receptacle through one end and caused to project partially from the opposite end, the base being frictionally gripped by the receptacle.

A special feature of the invention resides in the dimensioning of the slits in such a way that the reentrant panels referred to lie in planes that impart a pyramidal contour to the receptacle.

Another feature of the improved construction lies in proportioning the parts in such a way that the reentrant section serves as a protective shield between the bulb base accommodated within the receptacle and another bulb or bulb base that may lie directly adjacent.

In one embodiment of the invention the space between the reentrant portion of the sleeve and the walls opposite those to which it is appended is adapted frictionally to engage the base of a second bulb accommodated within the sleeve in an orientation opposite to that of the first; and the reentrant part is so designed that it imparts a pyramidal or tapered configuration not only to the space on one side of it but also to the space on the other side.

Another feature of the invention is to form the sleeve of a material which provides corrugations on the inner surfaces of the sleeve at least in and adjacent to the region of the interior receptacle referred to, the corrugations extending crosswise and contributing to the frictional engagement of the bulb base. Preferably the entire sleeve is composed of cardboard stock presenting interior corrugations crosswise to the longitudinal sleeve axis.

One of the more particular objectives of the invention is to provide a corrugated cardboard sleeve of the type mentioned, having improved means for more firmly and more reliably gripping the bulb or bulbs for which it is intended. Losses due to inadvertent breakage are thus materially reduced.

Another of the more specific objects of the invention is to provide a lamp package which more effectively and more reliably displays the presence and nature of the enclosed bulb, without requiring that the package be specially scrutinized to ascertain whether the bulb or bulbs it is supposed to contain are actually there, and without necessitating a removal of the bulb to determine its color or nature.

By means of these expedients and other novel structural features, it is another general objective of the invention to obviate numerous disadvantages and shortcomings of sleeve-type bulb holders currently in general use, and to achieve economies and commercially valuable benefits not heretofore afforded.

Several embodiments of the invention, in each of which the basic features of novelty and their resultant advantages are attained, are illustrated in the accompanying drawings, in which:

FIG. 1 is a face view of a blank from which a container or sleeve of the present type can be made;

FIG. 2 is a perspective view of a sleeve formed of the blank of FIG. 1;

FIG. 3 is an enlarged cross-sectional view, along line 3-3 of FIG. 4, showing how a pair of bulbs can be accommodated in the sleeve of FIG. 2;

FIG. 4 is an end view of the container of FIG. 2, with the bulbs omitted but with the enlarged globular part of one of them shown in dot-dash lines;

FIG. 5 is a view similar to FIG. 3, showing a modification, this section being taken along the line 5-5 of FIG. 6;

FIG. 6 is a view similar to FIG. 4, of the modified sleeve, with the bulbs omitted;

FIG. 7 is a face view of another blank from which a further modified sleeve can be formed;

FIG. 8 is a front view of a sleeve formed of the blank of FIG. 7, showing a pair of bulbs held therein;

FIG. 9 is a cross-sectional view along the line 9-9 of FIG. 8;

FIG. 10 is an end view of the container of FIG. 8, as seen from the direction 10-10 and with the bulbs omitted; and

FIG. 11 is a cross-sectional view along the line 11-11 of FIG. 10 with the bulbs in place.

The bulbs chosen for illustration herein are of the relatively conventional style in which an enlarged generally globular part has a narrower part secured to a metallic base of cylindrical contour; and since the invention is particularly useful in the enclosure of a pair of equal-size oppositely oriented bulbs of this type, the embodiments depicted in the drawings are of the two-bulb type. Also, since most electric light bulbs of this kind have external screw threads on their bases, and since the improved wrapper is unusually effective in gripping and protectively enclosing bulbs having bases of this kind, the bulbs illustrated in the drawings are provided with threaded cylindrical base portions. It is to be understood, however, that the invention is not necessarily restricted, in its usefulness and applicability, to bulbs of this particular nature.

Referring first to FIG. 1, the blank 20 is substantially rectangular and is composed of relatively thin inexpensive cardboard, preferably of the known two-ply kind in which an inner corrugated layer 21 is adhesively united to an outer uncorrugated layer 22. In the embodiment illustrated in FIG. 1 the corrugations extend in a horizontal direction, i.e., crosswise to the parallel fold or score lines indicated at 23, 24, 25 and 26.

The part of the blank located between score line 23 and the end 27 of the blank constitutes a relatively narrow attachment flap 28. When the blank is folded on the score lines, it can be formed into a tube or sleeve having four sides, with the flap 28 overlapping the opposite end

of the blank and adhesively secured thereto as shown in FIGS. 2 and 4. The sleeve's four walls are designated 29, 30, 31 and 32, and they are connected along corners defined by the fold lines 23, 24, 25, 26. The sleeve is open at its opposite ends. Its length is such that a pair of bulbs 33 and 34 (FIG. 3) can be accommodated in it with their globular ends outward and the threaded bases 35 and 36 arranged in overlapping adjacency in the medial region of the sleeve. To achieve this disposition the oppositely oriented bulbs are inclined to the sleeve axis.

In the medial part of the sleeve, a pair of spaced slits 37 and 38 extend transversely across the corner fold 25. In the construction illustrated, the slit 37 is shorter and substantially straight, while the slit 38 is longer and somewhat arched or arcuate, curving away from the slit 37. Extending between the ends 39 of slit 37 and the corresponding ends 40 of the slit 38 are fold lines 41 and 42.

The slits 37, 38 define between them a section consisting of a pair of panels 43, 44 hingedly joined along the fold line 25. After the sleeve has been formed (FIG. 2) the section between the slits is buckled or folded inward so as to bring the panels 43 and 44 into a reentrant disposition. A quadrilateral receptacle on the interior of the sleeve is thus formed, defined by the panels 43 and 44 and the adjacent parts of the walls 30 and 31 to which they are connected.

The slits 37 and 38 are made of such lengths that when bulb 33 is inserted into the sleeve from the upper end (as the sleeve is depicted in FIGS. 2 and 3) the bulb base 35 can be inserted completely into the receptacle referred to. More particularly, the base 35 enters the receptacle through its upper end and projects partially from the lower end as best indicated in FIG. 3. The latter end (whose size is determined mainly by the length of the slit 37) is so dimensioned that the bulb base 35 will come into frictionally gripped relation thereto when fully inserted as shown. The threaded exterior surface of the lamp base plays a part in establishing the desired grip. It "clicks" into a releasably held disposition with respect to the yieldable but inherently resilient lower edge of the receptacle from which it partially projects.

To enhance this effect, the corrugations on the interior surfaces of the sleeve are also helpful. The bulb base encounters these corrugations as shown at the left in FIG. 3, and readily "clicks" into a resilient releasable engagement with at least one of them.

Preferably, the sleeve is designed so that the base-accommodating quadrilateral receptacle on the interior of the sleeve is tapered or pyramidal in configuration. Where the score lines 23-26 of the blank 20 are parallel, as shown in the drawings, this result is achievable by making the slit 38 longer than the slit 37. Should it be desirable to do so, the score lines on the blank might be inclined to define sleeve walls of trapezoidal shape, and in such a case, slits of equal lengths could serve to impart the pyramidal shape to the interior receptacle for the base of the bulb.

The pyramidal contour referred to is helpful in introducing the bulb into the sleeve during the original packaging operation because it facilitates the insertion of the bulb base into the gripped position shown in FIG. 3. The bulb is grasped at its globular end and the base is directed into the interior receptacle through its larger end the dimensions of which are determined partly by the length of the slit 38 and partly by its configuration.

The firm and fully safeguarded engagement of the bulb within the wrapper or sleeve is further enhanced by the dimensioning of the sleeve in such a way that the enlarged globular end of the bulb fits snugly within the confines of the sleeve when it is fully inserted. This is indicated by the dot-dash lines in FIG. 4, from which it will be noted that the embodiment illustrated in FIGS. 1-4 consists of a tube or sleeve of substantially square cross-section, and that the bulb bears, frictionally against, and fits snugly within the confines of, all four walls of the sleeve. The

crosswise corrugations on the interior contribute to the firm frictional engagement of the bulb.

While the invention is obviously useful for the accommodation of only a single bulb (e.g., the bulb 33 thus far described) it lends itself admirably to the enclosure of a pair of bulbs of equal size arranged in opposite orientations. Thus, the slits 37, 38 of FIG. 1 are of such chosen lengths with respect to the spacing between the score lines 23-26 that when the panels 43 and 44 are in the reentrant or infolded disposition shown in FIGS. 2-4, the space between them and the walls 29 and 32 (i.e., the walls opposite those to which the panels are appended) is also of wedge-shaped nature and is adapted snugly and frictionally to engage the base 36 of the second bulb 34. This is indicated in FIG. 3. The crosswise corrugations with which the base 36 comes in contact, both on the walls 29, 32 and on the panels 43, 44, contribute to the firmness with which the base is held.

It should be observed that the bulb 33 is so engaged, by virtue of the accommodation of its base 35 as shown in FIG. 3, that its longitudinal axis lies along an oblique line extending between opposite corners of the sleeve. The base 35 is angled into the corner 25 and the bulb axis is directed toward the opposite corner 23. This disposition of the bulb allows the bulb to be held within a minimum length along the axis of the sleeve itself. As a result the sleeve can be shorter in length than would otherwise be possible. Moreover, the bulb base is firmly held against undesirable accidental protrusion through the sleeve opening created by the inward buckling of the panels 43, 44.

In the case of a sleeve having trapezoidal walls, so that the sleeve is itself tapered or frustro-pyramidal in nature, the bulbs to be accommodated need not necessarily be equal in size; and this is of course true even in connection with the truly prismatic type of sleeve illustrated.

The modification illustrated in FIGS. 5 and 6 involves the provision of a second pair of reentrant panels 43' and 44' for accommodating the base 36 of the second bulb 34. The panels are formed as hereinbefore described, by creation of spaced slits extending crosswise (in this case) with respect to the corner 45 (see FIG. 6), and by buckling or infolding the section between them into the interior of the sleeve. In this case, i.e., where there are two opposed quadrilateral receptacles on the sleeve interior, the connection flap 28' is caused to function along one of the unslitted corner folds, as indicated in FIG. 6.

The dispositions of the bulbs 33, 34 in the sleeve container of FIGS. 5 and 6 is similar to that of FIG. 3, except that each bulb base is accommodated within its own interior quadrilateral receptacle.

Some bulb manufacturers prefer to arrange a pair of equal-size bulbs in more of a side-by-side relationship. In such a case the invention can be embodied to advantage in a sleeve having a shorter length but oblong in cross-section. A blank for making such a container is depicted in FIG. 7, and the accommodation of bulbs 46, 47 therein is shown in FIGS. 8-11.

The blank 50, composed of the kind of corrugated stock hereinbefore described, has parallel fold or score lines 51, 52, 53, 54 defining an attachment flap 55, and the four walls 56, 57, 58, 59 of a sleeve of oblong cross-sectional contour. The axial length of the sleeve is in this case no greater than, and in fact somewhat smaller than, the length of the bulbs to be accommodated.

A pair of inwardly buckled sections are provided in the embodiment chosen for illustration in FIG. 7, by forming a part of slits 60, 61 in crosswise intersection relation to the fold line 52, and a similar but oppositely oriented pair of slits 62, 63 intersecting the fold line 53. This creates a pair of inwardly buckled panels 64, 65 hingedly connected along the corner fold 52 and appended to sleeve walls 56, 57 respectively along fold lines 66, 67; and another similar panel pair 68, 69 mutually con-

nected along corner 53 and secured to sleeve walls 57, 58 by fold lines 70, 71.

In FIG. 7 both slits of each pair are curved, and the curvature of each of the longer slits 61 and 63 is sharper in the wall area 57 than in the adjacent walls 56 and 58, respectively. This is not essential, but is of advantage in leaving a maximum amount of the cardboard area of wall 57 intact, i.e., the distance between slits 61 and 63 is as large as possible.

The slit pairs could if desired be placed at diagonally opposite corners of the sleeve, as in FIGS. 5 and 6, but an advantage is achieved by placing them at the adjacent corners at opposite ends of one of the longer walls, as shown. This arrangement leaves the opposite long wall 59 of the sleeve intact for advertising or other surface embellishment, and it provides a pair of sleeve openings through which both bulbs 46 and 47 are exposed along one side of the package, whereby the color or nature—or the presence or absence—of the bulbs in the package can be more quickly determined.

The inwardly buckled panels of FIGS. 7-11 function in the same way as those previously described. Each pair of slits is so disposed and of such lengths that a quadrilateral receptacle, preferably of pyramidal configuration, is formed on the interior of the sleeve. Each receptacle is of a size to receive a bulb base through one end, i.e., the larger end if it is of pyramidal shape, and to allow the bulb base thereupon to project partially from the opposite end. As the bulb base is inserted into and completely through its receptacle it "clicks" into resiliently held disposition. The frictional engagement is enhanced, as hereinbefore described, by the encounter of external threads on the bulb base with the edges of the infolded panels at the receptacle and from which the base protrudes, and by engagement between the bulb base threads and the crosswise corrugations on the interior surfaces of the adjacent sleeve walls.

Preferably the reentrant parts of the sleeve are so oriented, and of such dimensions, that a maximum amount of cardboard shielding is provided between the glass sections of the bulbs themselves when they are arranged in side-by-side relationship as shown in the drawings. When so arranged, in the opposite orientation depicted, each bulb base is cradled within one of the corners of the sleeve, and the bulb axis extends obliquely with respect to the sleeve axis. The bulbous part is frictionally and snugly held between the opposed longer walls of the sleeve, and the corrugations on the other reentrant panels help to support the bulb and retain it in frictional engagement.

The bulbs are thus reliably held in a protective enclosure, they are shielded from each other, and their base ends are held against accidental protrusion through the openings in the sleeve.

Coupled with the advantages referred to in connection with each of the various embodiments of the invention described and illustrated is the circumstance that the sleeve is in each case of extreme simplicity from a structural standpoint, unusually economical because of the minimal amount of cardboard stock required, low in manufacturing cost, readily susceptible to mass production with reliable uniformity of end product, and effective and attractive from a merchandising point of view.

Whereas for the sake of simplicity the term "cardboard" has been used herein and in the claims, it is not intended to be interpreted in its narrow sense. The stock to which reference is intended by this term is composed of layers of paper, at least one of which is planar and at least one of which is corrugated.

It will be understood that some of the details herein described and shown may be modified in numerous respects without necessarily departing from the spirit and scope of the invention as expressed in the appended claims.

What is claimed is:

1. A lamp pack comprising a single-face corrugated cardboard sleeve formed of planar walls connected along four corners, the inner surfaces of said walls being corrugated in a direction perpendicular to said corners, at least one corner being intersected by a pair of spaced slits defining between them a pair of panels hingedly joined along said corner, fold lines extending between corresponding ends of said slits, one of said slits being appreciably longer than the other so that when said panels are turned into reentrant disposition within the sleeve they define two adjacent sides of a quadrilateral pyramidal receptacle, and an electric light bulb having a globular part and an exteriorly threaded relatively narrow base, said bulb being snugly accommodated within said sleeve with its base extending through said receptacle and partially projecting from its narrower end, said threads being in interlocked relation to the panel edges at said narrower end and to the corrugations on the adjacent wall surfaces.

2. A lamp pack as defined in claim 1, in which there is a second bulb of similar nature and equal size snugly accommodated within said sleeve in opposite orientation to the first-named bulb, the cross-sectional dimensions of the sleeve being such that the base of the second bulb is wedged within the space between said reentrant panels and the opposite corner of the sleeve, with its threads in interlocked relation to the corrugations surrounding said space.

3. A lamp pack as defined in claim 1, in which there is a second bulb of similar nature and equal size snugly accommodated within said sleeve in opposite orientation to the first-named bulb, and in which a second corner of the sleeve is intersected by a pair of spaced slits defining between them a pair of hingedly joined turned-in panels defining a second quadrilateral pyramidal receptacle in which the base of the second bulb is interlocked in the same way as the first-named bulb.

4. A lamp pack comprising a single-face corrugated cardboard sleeve formed of planar walls connected along four corners, the inner surfaces of said walls being corrugated in a direction perpendicular to said corners, and a pair of oppositely oriented electric light-bulbs of equal size each of which has a globular part and an exteriorly threaded relatively narrow base, said sleeve having an oblong cross-section and the bulbs being snugly accommodated between the longer sides in an oblique side-by-side relationship with each bulb base within the angle of a corner, each of said last mentioned corners being intersected by a pair of spaced slits defining between them a pair of panels hingedly joined along said corner, fold lines extending between corresponding ends of said slits, one of said slits being appreciably longer than the other so that when said panels are turned into reentrant disposition within the sleeve they define two adjacent sides of a quadrilateral pyramidal receptacle, each of said bulb bases extending through one of said receptacles and partially projecting from its narrower end, its threads being in interlocked relation to the panel edges at said narrower end and to the corrugations on the adjacent wall surfaces.

5. A lamp pack as defined in claim 4, in which said base-accommodating corners are at opposite ends of the same long wall of the sleeve so that both bulbs are partially exposed along said wall while the opposite long wall of the sleeve remains intact.

6. A blank of single-face corrugated cardboard adapted to be formed into an interiorly corrugated sleeve for a lamp pack of the character described, comprising a substantially rectangular element provided with parallel score lines spaced to defined four sleeve-wall sections and a relatively narrow attachment flap at one end, the score lines extending in a direction at right angles to the corrugations, at least one of the score lines between a pair of said sections being intersected by a pair of spaced slits one of which is appreciably longer than the other,

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said blank being also provided with fold lines extending between corresponding ends of said slits, said fold lines converging toward the shorter slit, said fold lines and the intersected score line being the only creases between said slits.

7. A blank as defined in claim 6, in which another of the score lines between a pair of said sections is intersected by a pair of slits as described, the relationship to each other of the slits of one pair being opposite to the relationship to each other of the slits of the other pair.

8. A blank as defined in claim 7, in which said score lines are spaced to define hingedly connected sections that are alternately wide and narrow, and in which the intersected score lines are those separating one of the wider sections from the narrower sections on each side of it.

8

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