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*With international search report.*

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**Title:** LAMP PACKAGE WITH AN INTEGRAL STRUT

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**Abstract**

This invention relates to a package which is suitable for the packaging of fragile articles such as electric light bulbs. The package is especially adapted for high speed packaging in that the package may be collapsed to a flat blank for shipping but may be quickly opened in such a manner that each of the opposing sidewalls (11, 13) of the package has a projecting tab (29, 30) extending inwardly therefrom so that the two tabs (29, 30) are joined together to form an integral strut and thus stabilize the two opposing sidewalls (11, 13) of the package. Because of the symmetry of the devices being packaged the projecting tabs must be symmetrically located in a central area of the sidewalls. It will be found that this invention will be applicable to high speed packaging of fragile articles in chipboard cartons which are capable of receiving at least two similar articles such as lamp bulbs.
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+ It is not yet known for which States of the former Soviet Union any designation of the Soviet Union has effect.
LAMP PACKAGE WITH AN INTEGRAL STRUT

BACKGROUND OF THE INVENTION

Packaging for fragile articles such as electric light bulbs has taken a variety of forms and until recently most lamp packages have consisted of corrugated paperboard cartons in which two or more light bulbs were packaged in side by side opposing relationship in a sleeve which had open ends, and some energy absorbing medium between the adjacent bulbs.

There may be a central partition of the same corrugated paperboard which has cuts to provide movable tabs to allow compact packaging of the adjacent light bulbs.

In some designs the central partition has been eliminated and tabs have been made in the sidewalls of the paperboard sleeve which may be pushed inwardly to provide an energy absorbing surface between the two adjacent bulbs. A second sleeve of similar corrugated paperboard has been generally utilized to cover the open ends of the sleeve in which the bulbs are packaged. This not only ensures that the bulbs are captive in the inner sleeve but also provides an extra measure of shock absorption to the overall package. These packages have generally found utilization in packaging bulbs in multiples of two.

Some examples of patents which utilize the
corrugated paper construction are:
U.S. Patent 3,053,431 to Jacobs;
U.K. Patent 1,545,465 to Bowler et al;
U.K. Patent 2,035,960 to Watkins et al;
Canadian Patent 1,022,506 to Getz et al; and
Canadian Patent 1,128,904 to Beard.
The use of corrugated paper cartons has
proved satisfactory for most purposes for the past
fifty years. The corrugated paper gave an excellent
measure of shock absorption, but the lamp cartons
fabricated therefrom could be crushed rather easily in
certain situations leading to lamp breakage.
Lamp cartons fabricated from corrugated paper
also suffered from a narrow latitude in ability to
accept multiple colour printing on the surface thereof.
It has therefore been the trend to find some
other suitable container which would provide a suitable
surface for printing advertising messages thereon, and
yet provide a stiff structure which might be used on
the new higher speed packaging machines, without
imminent collapse due to the great accelerations
necessary to pack these lamps at high rates.
The material chosen for printing adaptability
and acceptable packaging characteristics is a single
ply chipboard material.

BRIEF DESCRIPTION OF THE INVENTION

This invention is related therefore to a lamp
package suitable for packaging lamps in multiples of
two wherein the two bulbs are separated by a unitary
tab which is composed of two opposing cooperating tabs
projecting from opposing sidewalls which are glued
together to form a unitary tab construction.
Lamps may be inserted into this package from
both ends simultaneously and the unitary tab member
provides the necessary shock absorbing device to
prevent breakage of the adjacent lamps.

The use of a single tab member which essentially ties the two sidewalls together makes for a lamp package with stabilized sidewalls and has great resilience to allow high speed packing techniques.

Because the composite tab consists of the two tabs projecting from both sidewalls of the lamp package, the package is symmetrical so that the lamp package contents may be viewed from either side.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a view of the blank which is subsequently folded to form a container for two lamps;

FIGURE 2 is a plan view of the carton of FIGURE 1 shown in the folded glued flattened condition;

FIGURE 3 shows a partial perspective of the package formed from the blank of FIGURE 1 in the opened condition with the end flaps open for the insertion of the lamps; and

FIGURE 4 is a side view of the carton,

and

FIGURES 5, 6, and 7 are end views of the blank carton showing the various stages of opening, and

FIGURE 8 is a side view of a three lamp carton.

DESCRIPTION OF PREFERRED EMBODIMENT

FIGURE 1 shows a blank 9 for a carton used for packing fragile articles such as lamps which is the subject of this invention. Basically the blank is formed of single ply chipboard (cardboard) having sidewalls 10, 11, 12, and 13 which are separated by folding lines 14, 15, 16, and 17. A pair of end flaps 18 and 19 are shown projecting from sidewall 10; flaps 20 and 21 from sidewall 11; flaps 22 and 23 from sidewall 12; flaps 24 and 25 from sidewall 13.

In instances where the carton is to be packed
with electric lamps the carton will be of such a size as to accommodate to electric bulbs in side by side relationship; thus the sidewalls have a greater width dimension than the end walls.

Blank 9 also has a pair of tabs 29 and 30 cut or pierced from sidewalls 11 and 13 which are shown to be (in this instance) somewhat circular in shape. The shape does not necessarily have to be exactly as shown but the configuration shown has demonstrated the ability to function well. The size and location of the tabs 29 and 30 is somewhat critical in that these tabs must overlap in the assembled package so that the overlapped portions of the opposing tabs 29 and 30 may be glued together.

Referring now to FIGURE 2, the blank 9 is shown in a folded flat position as would be acceptable for shipping carton blanks. In this instance flap 26 is made to be joined to endwall 10 by gluing or other suitable joining method and tabs 29 and 30 are also joined together at the point of overlap as illustrated at 31 in FIGURE 2.

It will be noted tabs 29 and 30 have their fold lines located in the centre of the sidewalls 11 and 13 respectively. By choosing this location the lamp carton blank may be stamped out, printed and shipped in folded flat configuration to the place where the lamp bulbs are to be packaged.

When the package is to be used as a packing carton, the flattened carton is loaded into a lamp packaging machine which subsequently opens the flattened package as shown progressively in FIGURES 5, 6, and 7 to produce the carton shown in FIGURE 3 and inserts two lamps, one from each end. The two tabs 29 and 30 have been previously glued together to form an integral strut which automatically stretches
across the middle of the two sidewalls when the flat package is opened. Note that the lamp packing machinery does not have to insert a finger or other similar device into the package to erect a projecting tab so as to ensure that a shock absorbing device is between the two lamp bulbs.

Because of this, this particular package has a design which is readily adaptable to high speed packaging techniques while simultaneously providing excellent shock absorbing characteristics because of the inherent resilience of the strut formed by tabs 29 and 30.

FIGURE 4 shows how the strut fits between the nested bulbs to cushion and provide a resiliency for the interface of the nested bulbs.

The end flaps will be closed and glued in a manner well known in the lamp packaging art with the end flaps 18, 22, 19, 23 folded inwardly first and subsequently flaps 20 and 24 are folded and glued in the closed position as are flaps 21 and 25. After initial opening of the carton, the purchaser may close the carton by inserting tongue 27 on flap 21 into slot 28 of flap 25.

The shape of the tabs 29 and 30 (each provided with a pair of slits for providing the desired resilience) have been chosen to be somewhat circular in shape but other shapes may provide the necessary resilient cushioning for successfully packaging the nested bulbs. This shape has provided the desired separation and cushioning while providing the purchaser with an aesthetically pleasing aperture on both sides of the carton which provides the purchaser with a good view of the contents. It is believed that other tab shapes will also function in a similar satisfactory manner.
It will be found that the advantages of this package resides in the fact that when the flat carton is unfolded from the flattened shipping condition to the boxlike configuration used in packing, that the strut appears automatically without any external assistance thus allowing a faster packaging speed. The strut by its shape and cuts has excellent natural resilience. The fact the strut extends across the center of the sidewalls only provides extra rigidity to an otherwise excellent packaging carton.

FIGURE 8 is a side view of a three lamp carton showing how the two lamp carton of this invention may be augmented by adding three more walls to provide complete confinement for the third bulb. A four lamp carton with two nested pairs of lamps such as shown in Figure 4 and having a common package wall separating the two pairs will be obvious to those skilled in the lamp packaging art.

Figure 9 is a partial view of a strut composed of a pair of tabs 129 and 130 which are joined by providing a slit extending approximately half way across each of the tabs. The two tabs may then be interlocked together by sliding the two tabs together so that the two mating slits intersect each other and lock the tabs together to form a unitary strut. It will be seen that the shape of the tabs 129 and 130 is slightly different than described previously, but this shape lends itself to this particular method of connecting the two tabs together.

While other configurations of tabs may be possible the applicants wish to limit the scope of their invention by the following claims.
The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A carton for receiving a plurality of articles of similar size and shape, wherein two of the articles are stacked together in a side by side nesting relationship; said two articles being at least partially restrained by a pair of opposing sidewalls which have an integral strut extending across and joining said opposing sidewalls, said strut also serving as a resilient separator for said two articles inserted into said carton in a nesting relationship.

2. The carton as claimed in claim 1 wherein the articles are electric light bulbs.

3. A carton as claimed in claim 2 wherein the integral strut is formed by stamping tab members from opposing sidewalls of the carton, and joining said tab members by some suitable method such as gluing.

4. A carton as claimed in claim 3 wherein said tab members are of similar shape and size and are hinged from the center of the sidewalls in such a manner that the carton may be folded into a flat shipping blank.

5. A carton as claimed in claim 4 wherein the tab members are somewhat circular in shape and are hinged along a fold line in the center of the sidewall which is parallel to the longitudinal axis of the carton, each tab having at least one slit therein.

6. The carton as claimed in claim 1, 2 or 3 wherein the carton is formed from single ply chipboard cardboard.

7. A carton for receiving a pair of articles of similar size and shape, wherein said articles are stacked in a side by side nesting relationship, said carton having a pair of opposing sidewalls, and an
integral strut extending across and joining the opposing sidewalls, said strut also serving as a resilient separator for articles inserted into the carton.

8. The carton as claimed in claim 7 wherein the articles are electric light bulbs.

9. A carton as claimed in claim 8 wherein the integral strut is formed by stamping tab members from opposing sidewalls of the carton, and joining said tab members by some suitable method such as gluing.

10. A carton as claimed in claim 9 wherein said tab members are of similar shape and size and are hinged from the center of the sidewalls in such a manner that the carton may be folded into a flat shipping blank.

11. A carton as claimed in claim 10 wherein the tab members are somewhat circular in shape and are hinged along a fold line in the center of the sidewall which is parallel to the longitudinal axis of the carton, each tab having at least one slit therein.

12. The carton as claimed in claim 7, 8 or 9 wherein the carton is formed from single ply chipboard cardboard.

13. A carton blank for assembly into a carton for receiving a pair of lamp bulbs in a nested relationship comprising:
   a pair of sidewalls;
   a pair of endwalls;
   suitable flaps at the remote ends of the sidewalls and endwalls;
   a pair of cooperating tabs which are formed in each of the sidewalls of said carton blank, such that the pair of opposing tabs are joined in a suitable manner near their ends to form an integral strut for forming a resilient cushion and lateral stabilizing
means for said sidewalls;
said carton blank being capable of folding
into a flattened assembly suitable for shipping;
said carton also being capable of being
opened from said flattened assembly into a carton
suitable for receiving two lamp bulbs of similar shape
and size, and having an integral strut formed therein;
said integral strut extending between
opposing sidewalls of said opened carton in such a
manner as to separate bulbs inserted into said carton
and prevent physical contact of said bulbs.

14. A carton blank as claimed in claim 13
wherein said opposing tabs are of somewhat circular
shape and are hinged from the centre of said sidewalls.

15. A carton blank as claimed in claim 13
or 14 in which the blank is formed from single ply
chipboard cardboard.

16. A carton as claimed in claim 14 wherein
the opposing tabs are joined in areas remote from their
hinge lines by gluing or other suitable means, and the
hinge lines are located in the centre of said sidewalls
and extend parallel to the longitudinal axis of said
carton.

17. A lamp bulb carton formed from single
ply cardboard suitable for receiving two lamps of
similar shape and size, said lamps being held in said
carton in the usual opposing nested relationship, and
being separated from each other by a narrow strut which
is formed from tabs stamped from the opposing sidewalls
of the carton, said strut being centrally located with
respect to said bulbs and having sufficient width to
prevent the nested bulbs from contacting each other,
said strut being the result of joining said tabs
together at points remote from the carton sidewalls to
form a unitary strut by gluing or other suitable means.
18. A carton as claimed in claim 17 wherein the hinges or fold lines for the tabs are centrally located in each sidewall and are parallel to the longitudinal axis of said carton.

19. A carton as claimed in claim 18 wherein the tabs project inwardly into the package a sufficient distance to overlap one another to permit joining by gluing or other suitable means.

20. The invention as defined in any of the preceding claims including any further features of novelty disclosed.
### I. CLASSIFICATION OF SUBJECT MATTER
According to International Patent Classification (IPC) or to both National Classification and IPC

| Int.Cl. 5 | B65D5/50 ; B65D85/42 |

### II. FIELDS SEARCHED

#### Classification System

| Int.Cl. 5 | B65D |

#### Classification Symbols

Documentation Search other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched

### III. DOCUMENTS CONSIDERED TO BE RELEVANT

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### IV. CERTIFICATION

Date of the Actual Completion of the International Search: 25 OCTOBER 1991

Date of Mailing of this International Search Report: 08, 11, 91

International Searching Authority: EUROPEAN PATENT OFFICE

Signature of Authorized Officer: VANTOMME M.A.
This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on.

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