



US 20050072704A1

(19) **United States**

(12) **Patent Application Publication**
Patz et al.

(10) **Pub. No.: US 2005/0072704 A1**

(43) **Pub. Date: Apr. 7, 2005**

(54) **PACKAGED BULBOUS LIGHT DIFFUSER**

(22) Filed: **Oct. 2, 2003**

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Publication Classification

(51) **Int. Cl.⁷ B65D 85/42**

(52) **U.S. Cl. 206/418; 206/454; 206/503**

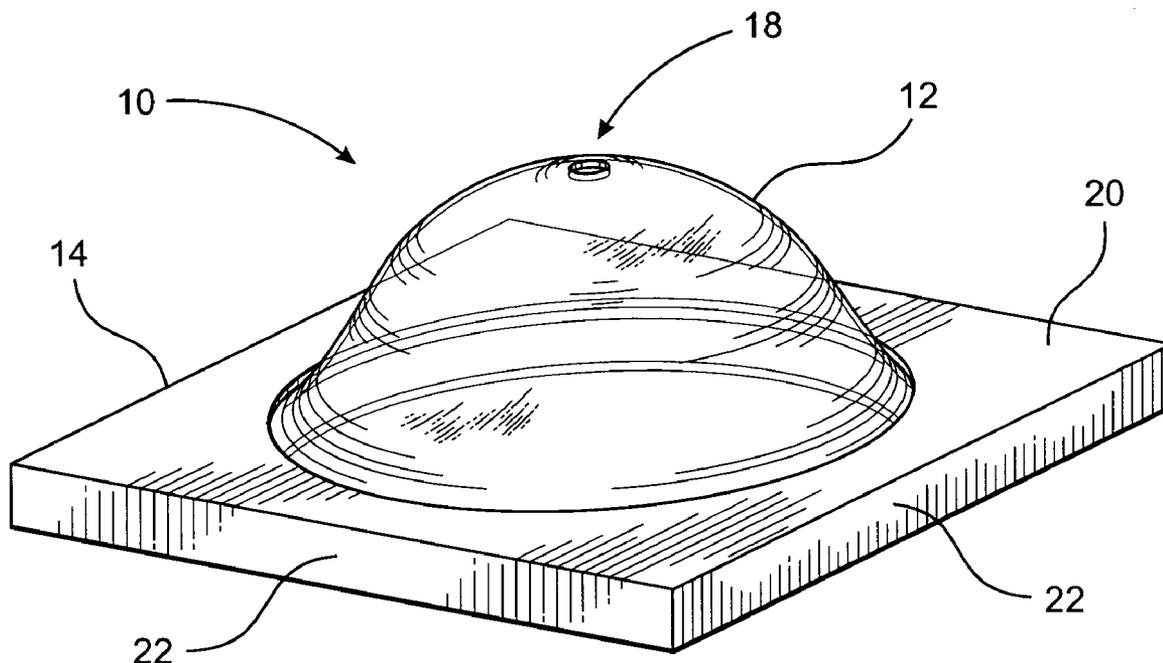
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(57) **ABSTRACT**

A light diffuser pack (10) has a bulbous light diffuser (12) mounted in a frame (14) with the diffuser protruding out of an opening in one face side of the frame. The interior of the diffuser is accessible through an opening in an opposed face side of the frame to receive and house the diffuser of another framed light diffuser of the same construction.

(21) Appl. No.: **10/677,177**



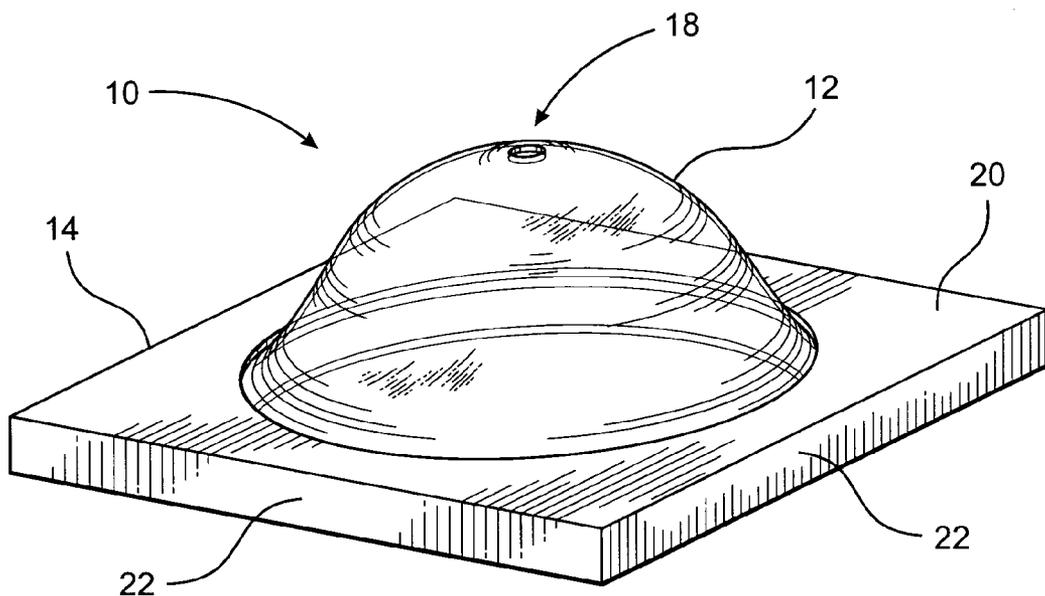


FIG. 1

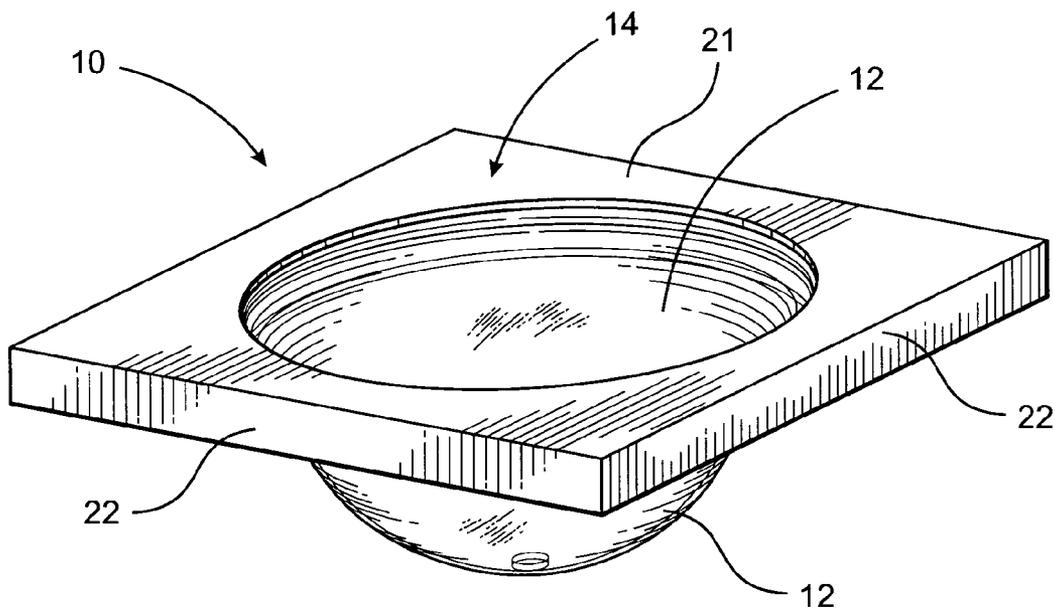


FIG. 2

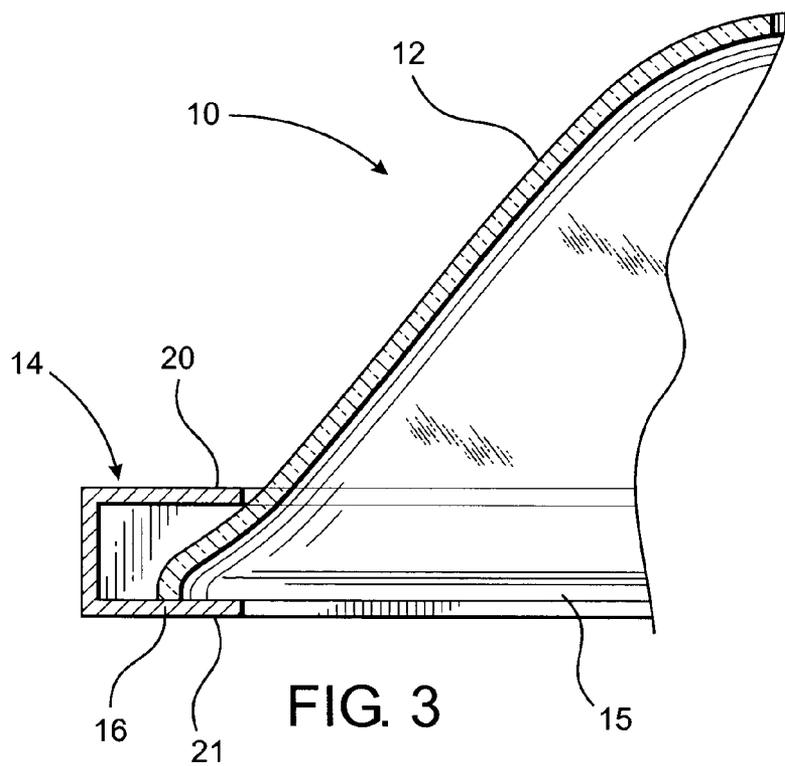


FIG. 3

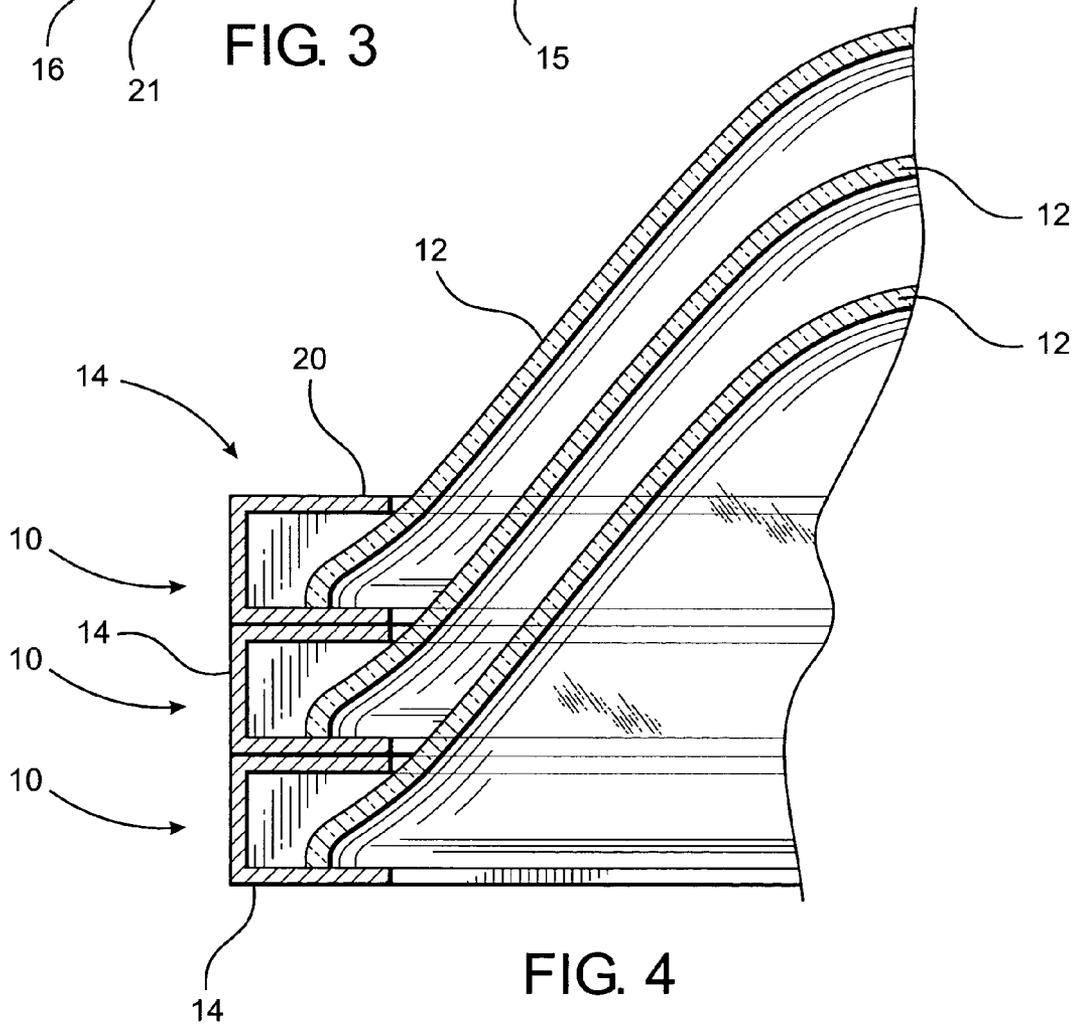


FIG. 4

PACKAGED BULBOUS LIGHT DIFFUSER

TECHNICAL FIELD

[0001] This invention relates generally to manufactured product packaging, and particularly to the packaging of bulbous or bowl-shaped products such as curved light diffusers.

BACKGROUND OF THE INVENTION

[0002] Manufactured products of curved shapes present special challenges for packaging designers. This is particularly true for curved products that are decorative, fragile and subject to marring. They can, of course, simply be packed in containers such as cardboard boxes. Such boxes do protect the product and provide space for products promotion and identification printed matters as well as for the attachment of theft prevention devices. The product however is of course hidden from view unless the box is transparent or has one or more windows. As the minimum box dimensions must be at least as large as the maximum product dimension, such packaging is not spacially conservative.

[0003] For example, electrically powered ceiling fans often come with light kits. These kits are almost always packaged and sold separately from the fans. The lights usually need a glass light diffuser to cover the light kit electric light bulb or bulbs. As the light bulb is not recessed, as in a ceiling, the diffuser is usually bulbous or bowl-shaped. The diffusers are usually packaged and sold separately to provide an aesthetic choice for installation in various environments. This rounded shape also enhances the diffuser effectiveness and aesthetics. Similarly, ceiling lights often have a bowl-shaped diffuser that is coupled to a mounting plate mounted flush with the ceiling.

[0004] Such diffusers can be packaged in cardboard boxes, and even those with windows. Such a box does provide a good degree of protection and ample space for printed materials. Furthermore, rectangular boxes can also be stacked. However, such packaging severely restricts the view of the overall shape of the diffuser, its degree of light transparency and its tint. If stacked, stack integrity is limited, particularly if the boxes are glossy, smooth and slippery. Also, only a very small portion of the box interior space is actually occupied by the diffuser, the majority of the space being either empty or filled with packing material which increases the costs of the packaging.

[0005] It thus is seen that a need remains for a light diffuser that is packaged in a manner that renders most of it visible while yet being stackable with stability. Accordingly, it is to the provision of such that the present invention is primarily directed.

SUMMARY OF THE INVENTION

[0006] In a preferred form of the invention, a bulbous light diffuser is mounted in a frame with the diffuser protruding out of an opening in one face side of the frame and with the interior of the diffuser being accessible through an opening in an opposed face side of the frame to receive and house the diffuser of another framed light diffuser of the same construction.

[0007] In another preferred form of the invention a light diffuser pack is provided for compact storage and sale in stacks. The pack comprises a bulbous light diffuser having a body with a convex outer surface and a concave inner surface and an annular rim. The pack further comprises a

frame having substantially parallel opposing faces each formed with a generally circular central opening of a diameter less than the diameter of the diffuser rim. The diffuser is mounted to said frame with its rim captured between the frame faces and with its body protruding out of one of the frame face openings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a perspective view of the top of a light diffuser pack in its preferred form.

[0009] FIG. 2 is a periphery view of the bottom of the pack shown in FIG. 1.

[0010] FIG. 3 is a cross sectional view of a portion of the pack shown in FIG. 1.

[0011] FIG. 4 is a cross sectional view of portions of three of the packs shown in FIG. 1 stacked into a stack.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] Referring now in more detail to the drawing there is shown a light diffuser pack 10 having a bulbous light diffuser 12 securely packaged in a cardboard frame 14. The diffuser here is translucent and made of frosted glass. It is generally of the shape of a dome bowl or bell with an annular rim 15 with a planar rim edge 16. Thus the exterior of the diffuser is convex and its interior concave. The apex of the dome shaped, bulbous diffuser has a hole 18 through which a mounting member extends.

[0013] The cardboard frame 14 here has a square top 20 and a square bottom 21 joined at their peripheries by four rectangular sides 22. The frame top and bottom both frame a large circular opening of a diameter a little less than the outside diameter of the diffuser rim 15. As best shown in FIG. 3, the diffuser is packaged in the frame with the planar edge of its rim placed flushly upon the interior side of the frame bottom 21. It is also seen here that the relative dimensions of the diffuser adjacent its rim and of the frame openings are such as to restrain the diffuser from moving in any direction with respect to the frame.

[0014] In this manner the diffuser is securely framed into a pack with most of the diffuser positioned outside of the frame so that it is clearly visible. The hole 18 in the diffuser dome provides a finger grip so that the pack can be lifted and carried by holding either the dome or the frame. Assembly is easily done by merely folding and gluing the frame top 20 over a diffuser after its rim has been seated in place on the inside of the frame bottom. Though the frame does provide less protection for the diffuser than a fully encasing box, the rim, which is most susceptible to breakage, is fully shielded by the frame.

[0015] As shown in FIG. 4, by having both the top and bottom of the frame formed with aligned openings of the same dimension, multiple packs may be readily stacked one atop another with multiple diffusers partially located therein. This provides compactness of storage with its space saving advantage. Note also that one pack cannot slide laterally off another. To remove one pack its diffuser may either be easily lifted off the top of the stack by inserting a finger in its dome hole. Alternatively, it may be lifted with two hands holding opposite sides of its frame.

[0016] It thus is seen that a light diffuser pack of economical construction is now provided that is easy to handle and stack with most of the diffuser visible and with space provided for printed materials. Although the preferred embodiment of the framed product here is that of a light diffuser for a ceiling fan light kit, principles of the invention may obviously be applied to other bulbous products of a cup or bowl shape such as bowls, pots, reflectors, radiowave antennas and the like. The diffuser itself may of course be transparent rather than clear and be made of plastic instead of glass. The frame may also be made of materials other than cardboard such as sheet plastic. Many other modifications may of course also be made without departure from the spirit and scope of the invention as set forth in the following claims.

1. A light diffuser pack for compact storage and sale in stacks with others of the same construction and which comprises a bulbous diffuser having a body with a convex outer surface and a concave inner surface and an annular rim, and a frame having substantially parallel opposing faces each formed with a generally circular central opening of a diameter less than the diameter of said diffuser, and wherein said diffuser is mounted to said frame with its rim captured between said frame faces and with its body protruding out of one of said frame faces openings.

2. The light diffuser pack of claim 1 wherein said frame is rectangular and has four sides that extend between said two faces.

3. The light diffuser pack of claim 2 wherein said frame is made of cardboard and said diffuser is made of glass.

4. The light diffuser pack of claim 1 wherein said diffuser body has an opening that provides a hand grip for the pack and a receptacle for an ornament once the diffuser is unpacked from the frame.

5. Two of the light diffuser packs of claim 1 mounted in a stack with the frame of one pack supported upon the frame of the other pack and with the diffuser body of the other pack nested within and spaced from the diffuser body of the one pack.

6. A bulbous light diffuser mounted in a frame with the diffuser protruding out of an opening in one face side of the frame and with the interior of the diffuser being accessible through an opening in an opposed face side of the frame to receive and house the diffuser of another framed light diffuser of the same construction.

7. The framed light diffuser of claim 6 wherein said frame face sides are substantially parallel and joined together at their peripheries by side walls.

8. The framed light diffuser of claim 6 wherein said bulbous diffuser has an annular rim of a size greater than the size of said frame face sides openings.

9. The framed light diffuser of claim 6 wherein said diffuser is made of glass.

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