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London WC2B 6UZ(GB)(54) **Display carton.**

(57) A display carton having a window 11 formed of transparent plastics sheet material extending around a corner of the carton defined by two adjoining walls thereof, the carton body being apertured 8 to define the boundary of the window, the said sheet material being of a relatively stiff and self-supporting nature, and the sheet material not being secured to the carton body but being located in its desired position inside the carton body solely by engaging within the same.

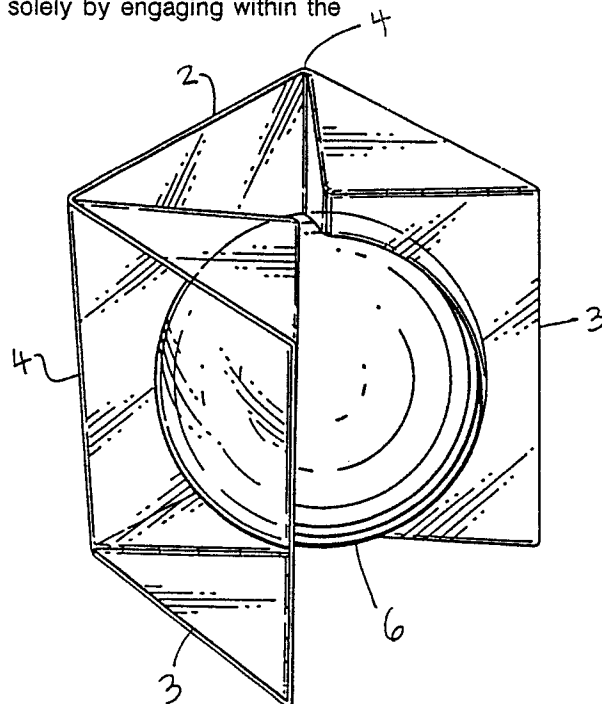


FIG. 2

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"Display carton"

This invention relates to cartons and is particularly directed to the provision of an improved carton having a transparent window for displaying its contents at a point of sale.

In such a carton it is desirable that the transparent window should extend around at least one corner defined by adjoining side walls of the carton, so as to increase the visibility of the contents. This makes it desirable to use a relatively stiff and self-supporting transparent sheet material to form the window, such as polyvinyl acetate sheet, in order to maintain the strength of the carton. However, the use of such a material raises a problem in that when a suitably scored and foldable transparent sheet is secured, e.g. glued, to the inside surface of a cardboard or paperboard blank around a window opening therein, and the combination thus formed is erected to form the carton, the stiffness of the sheet material, and the sharpness of the fold therein, tends to cause it to burst through the material of the blank at locations where a fold in the transparent sheet overlaps the inside of a corresponding fold in the cardboard, at the extremities of the corner defined in the transparent window. Various attempts have been made to avoid this problem, such as by forming notches in the transparent sheet where it overlaps the fold lines in the blank as in UK-B-2090230, but these proposals have up to now been rather expensive and/or complicated to put into practice.

Viewed from one aspect the present invention provides a display carton having a window formed of transparent plastics sheet material extending around a corner of the carton defined by two adjoining walls thereof, the carton body being apertured to define the boundary of the window, the said sheet material being of a relatively stiff and self-supporting nature, and the sheet material not being secured to the carton body but being located in its desired position inside the carton body solely by engaging within the same.

With such an arrangement the aforementioned problems which stem from securing the transparent sheet to the carton body are avoided.

Conceivably the said transparent sheet material could be pre-formed to have a natural configuration which fits directly within the carton body. In a preferred form of the invention, however, the transparent sheet material comprises a pre-formed unit whose natural configuration is larger than the internal dimensions of the carton body but which is resiliently compressed about at least one fold line in the sheet material unit for insertion in the carton body. With such an arrangement the sheet material unit, having been resiliently compressed for inser-

tion into the carton body, then springs out into engagement with the interior of the carton body so as to be located in its desired position therein by frictional engagement with the inside walls.

Preferably the said fold line in the sheet material unit defines at least part of the said corner of the carton.

Preferably the said window extends around two adjacent corners of the carton, there being two of said fold lines in the sheet material unit defining at least part of one each of said corners. The said sheet material unit may then comprise a central panel and two opposite wing portions hingedly connected to the said central panel by way of said two fold lines.

Preferably the said sheet material unit is preformed with at least one portion arranged to locate an article to be housed in the carton. In one embodiment both of the aforementioned wing portions of the sheet material unit are so preformed to locate a substantially spherical article between themselves.

It is a different object of the invention to provide a windowed carton for housing and displaying to best advantage a substantially spherical or oval article, whilst economising on the amount of transparent sheet material used to form an inner, article supporting, unit thereof.

Thus viewed from another aspect the invention provides a carton for housing and displaying a substantially spherical or oval article, comprising an outer carton body formed with a window opening and an inner unit formed of relatively stiff transparent sheet material for supporting a said article, said inner unit comprising a central panel and two wing portions connected to said central panel in a substantially U-shaped configuration, said wing portions being formed respectively with inwardly facing, substantially part-spherical recesses arranged to receive and support a said article by engagement with opposite sides thereof, the said recesses being sufficiently spherically extensive to embrace and substantially encompass a said article whereby, in use, a said article is supported within the carton only by the said inner unit.

By means of this arrangement the article may be supported by an inner unit having only three portions, i.e. a central panel and two wing portions.

The scope of the invention also extends to the provision of such an inner unit above, for use in a carton as just set forth, and thus viewed from a further aspect the invention provides an inner unit for supporting a substantially spherical or oval article within an outer carton formed with a window opening, said inner unit being formed of relatively stiff

transparent sheet material and comprising a central panel and two wing portions connected to said central panel in a substantially U-shaped configuration, said wing portions being formed respectively with inwardly facing, substantially part-spherical recesses arranged to receive and support a said article by engagement with opposite sides thereof, the said recesses being sufficiently spherically extensive to embrace and substantially encompass a said article.

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of a transparent sheet material unit for use in a carton according to the invention;

Figure 2 shows the said unit resiliently compressed about an article to be housed in the carton, prior to insertion in the carton body;

Figure 3 is a perspective view showing the said unit and article inserted in the carton body, with the carton not yet closed; and

Figure 4 is a perspective view of the finished carton.

Referring to the drawings, the transparent sheet material unit 1 shown in Figure 1 is formed of polyvinyl acetate in a form which is sufficiently stiff and self-supporting to substitute for a major part of a wall of a cardboard carton without substantially detracting from the strength of the carton. The unit is pre-formed to a natural configuration as shown in Figure 1, with a somewhat inwardly bowed central panel 2 and two wing portions 3 hingedly connected to the panel 2 by way of vertical fold lines 4. Each of the wing portions is pre-formed as shown to define an inwardly concave part-spherical recess 5.

In use, the unit 1 is compressed by urging the wing portions 3 towards each other about the fold lines 4, which has the effect of flattening the previously bowed central panel 2, to bring the unit into a substantially cuboid configuration as shown in Figure 2. At the same time a spherical article 6 which is to be housed in the carton for display and sale is inserted between the wing portions 3 so as to be supported and located in the recesses 5. The assembly thus formed is then inserted in a cardboard carton body 7 as shown in Figures 3 and 4, which body is formed with a window aperture 8 extending around three of its side walls, which side walls define corners 9 and 10 between them. Once inserted and released, the transparent sheet material unit 1 once again opens slightly about the fold lines 4 so as to come into frictional engagement with the inside wall surfaces of the carton body and thus to be supported and located therein as shown in Figures 3 and 4, with the exposed portions of transparent sheet material forming a

window 11 and the corners of the window being formed by the fold lines 4. The carton may now be closed, with the article 6 located and displayed therein as shown.

It is to be clearly understood that there are no particular features of the foregoing specification, or of any claims appended hereto, which are at present regarded as being essential to the performance of the present invention, and that any one or more of such features or combinations thereof may therefore be included in, added to, omitted from or deleted from any of such claims if and when amended during the prosecution of this application or in the filing or prosecution of any divisional application based thereon. Furthermore the manner which any of such features of the specification or claims are described or defined may be amended, broadened or otherwise modified in any manner which falls within the knowledge of a person skilled in the relevant art, for example so as to encompass, either implicitly or explicitly, equivalents or generalisations thereof.

Claims

1. A display carton having a window formed of transparent plastics sheet material extending around a corner of the carton defined by two adjoining walls thereof, the carton body being apertured to define the boundary of the window, the said sheet material being of a relatively stiff and self-supporting nature, and the sheet material not being secured to the carton body but being located in its desired position inside the carton body solely by engaging within the same.

2. A carton as claimed in claim 1, wherein the transparent sheet material comprises a pre-formed unit whose natural configuration is larger than the internal dimensions of the carton body but which is resiliently compressed about at least one fold line in the sheet material unit for insertion in the carton body.

3. A carton as claimed in claim 2, wherein the said fold line in the sheet material unit defines at least part of the said corner of the carton.

4. A carton as claimed in claim 3, wherein the said window extends around two adjacent corners of the carton, there being two of said fold lines in the sheet material unit defining at least part of one each of said corners.

5. A carton as claimed in claim 4, wherein the said sheet material unit comprises a central panel and two opposite wing portions hingedly connected to the said central panel by way of said two fold lines.

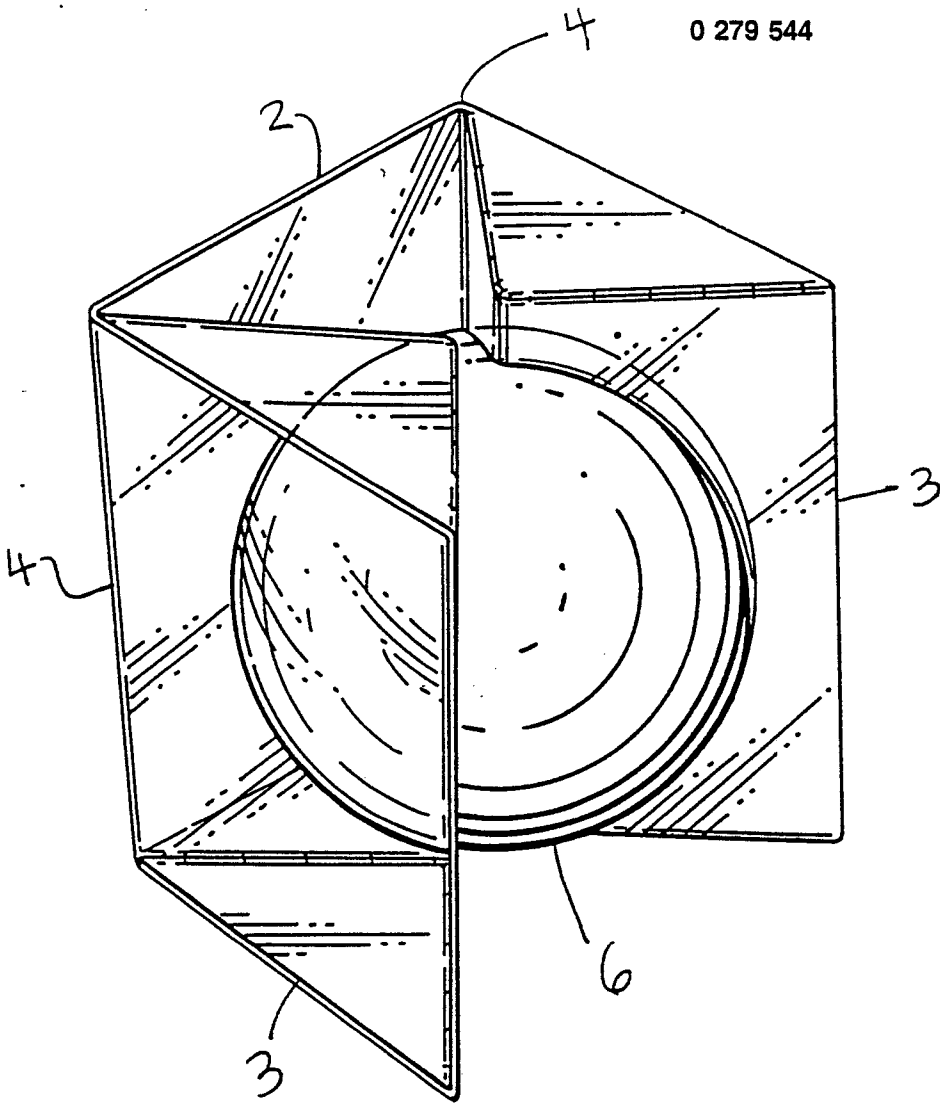


FIG. 2

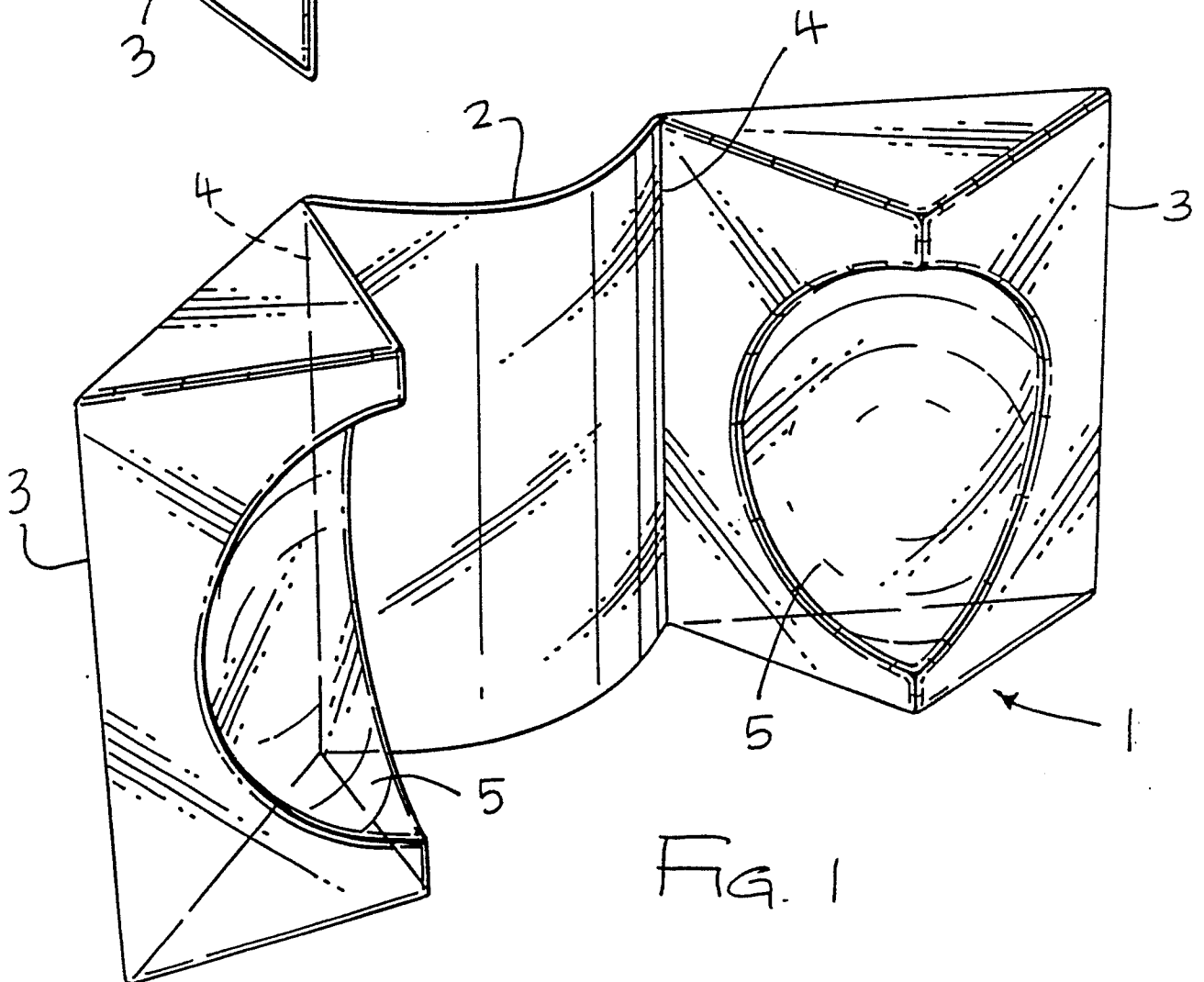


FIG. 1

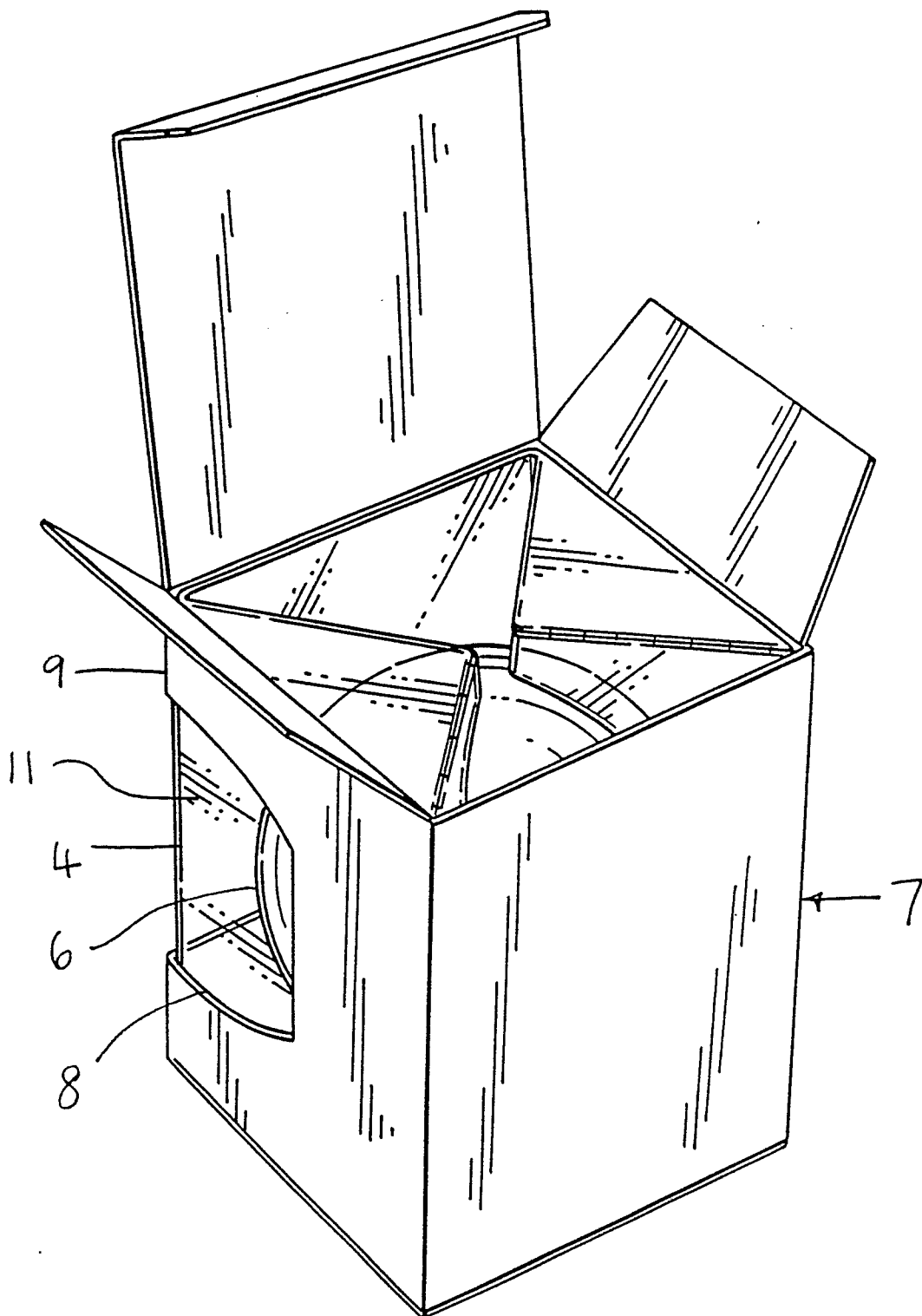


FIG. 3

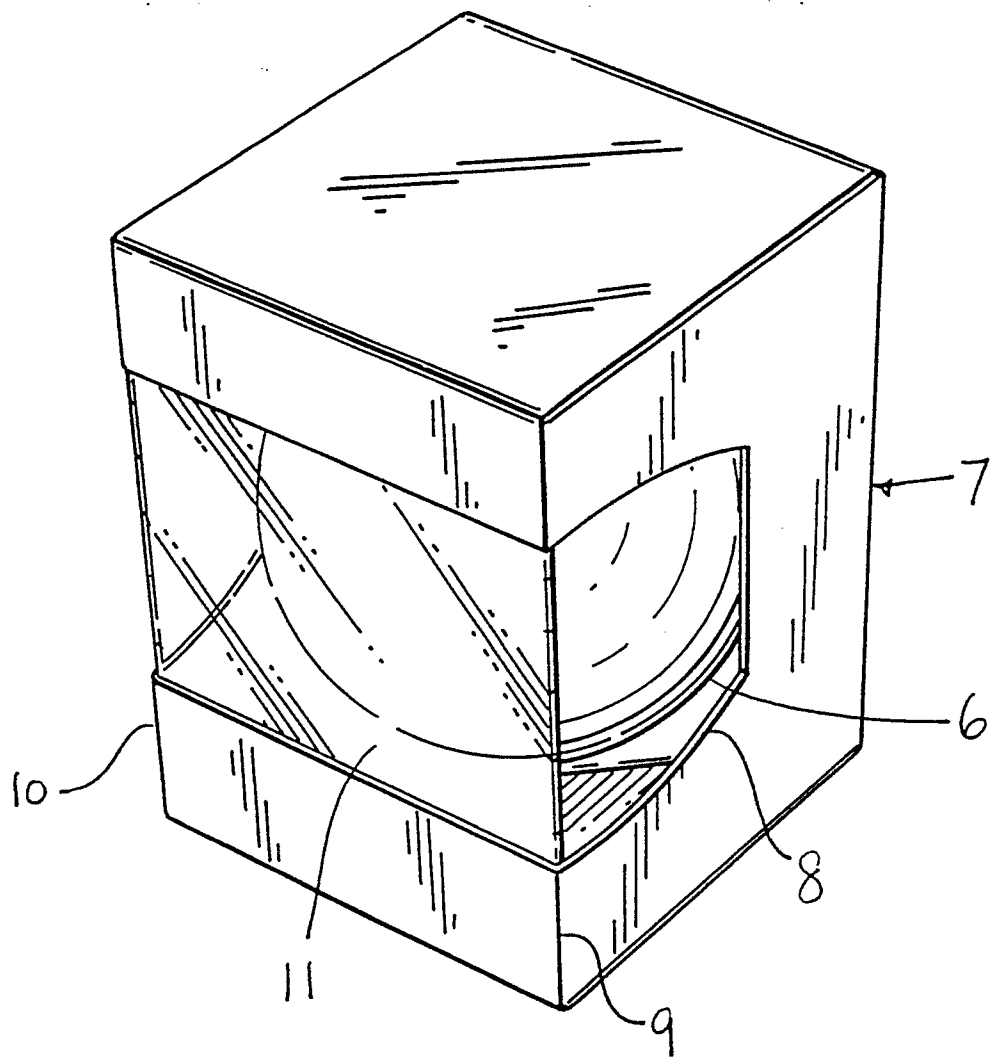


FIG. 4.



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	DE-U-8 530 488 (STABERNACK) * Claim 1; page 4, line 10 - page 5, line 11; figures *	1-5	B 65 D 5/50 B 65 D 5/42
Y	---	6-11	
Y	FR-A-1 225 812 (SOC. CIVILE D'ETUDE ET DE RECHERCHE DE PRODUITS DE MARQUE) * Page 1, right-hand column, line 27 - page 2, left-hand column, line 32; figures *	6-11	
X	---	1-3	
X	DE-A-2 534 389 (MUHLE) * Page 4, lines 9-16; page 5, lines 16-35; figures 1,3 *		
A	---		
A	DE-A-2 348 869 (STABERNACK)		
A	---		
A	US-A-4 146 128 (HOGG)		
A	---		
A	GB-A-2 168 036 (EICKHOFF)		
D,A	---		
D,A	GB-A-2 090 230 (DUPUY)		

The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 09-05-1988	Examiner MARTENS L.G.R.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	