April 2, 1968 R. J. LIGON 3,375,921

ARTICLE DISPLAY PACKAGE AND METHOD AND BLANKS FOR MAKING SAME

Filed Jan. 31, 1967 3 Sheets-Sheet 1

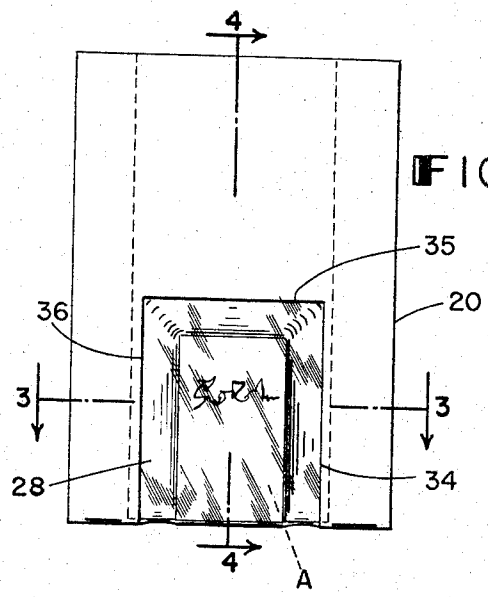


FIG. 1

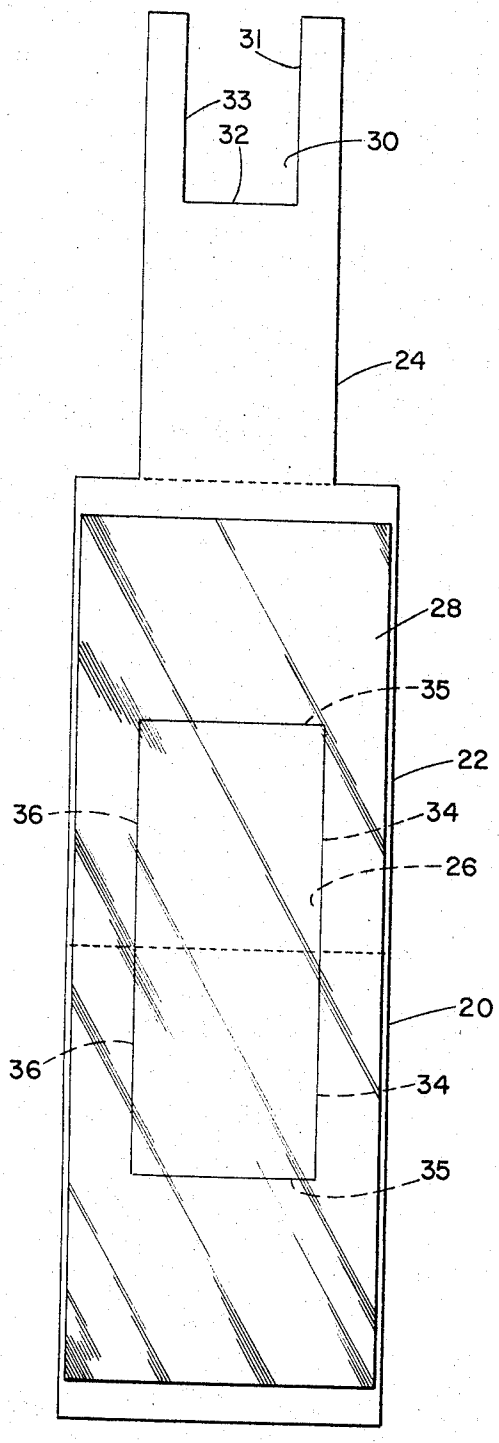


FIG. 2

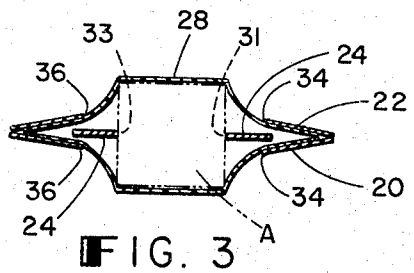


FIG. 3

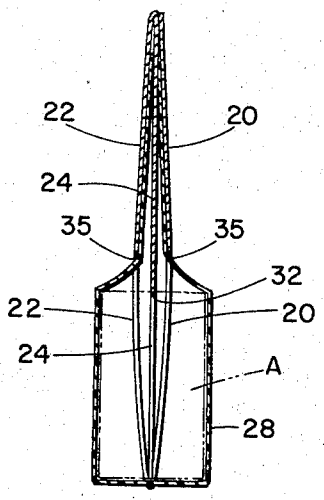


FIG. 4

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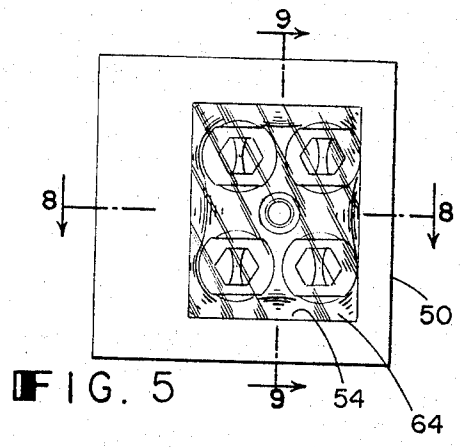


FIG. 5

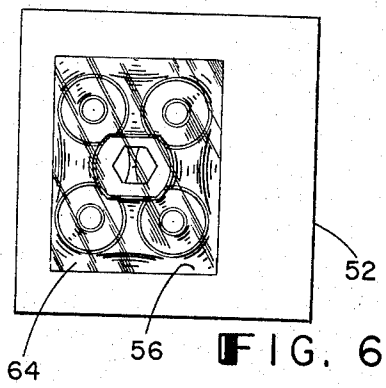


FIG. 6

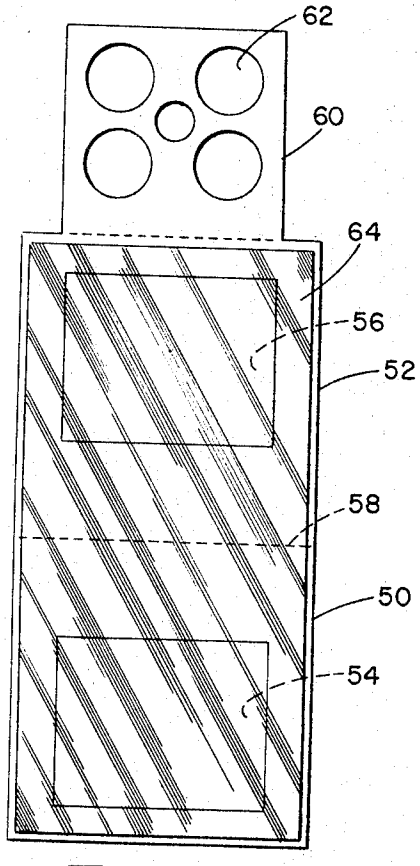


FIG. 7

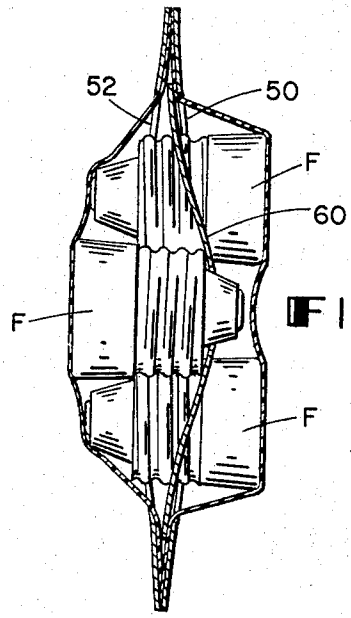


FIG. 9

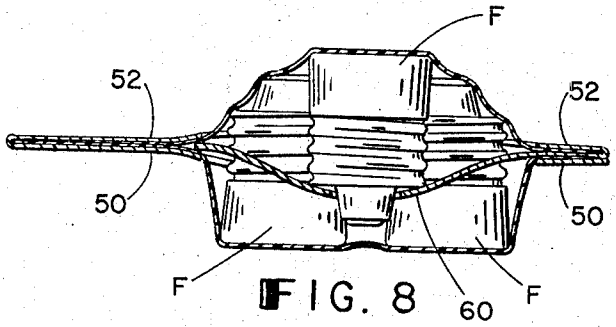


FIG. 8

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ARTICLE DISPLAY PACKAGE AND METHOD AND BLANKS FOR MAKING SAME

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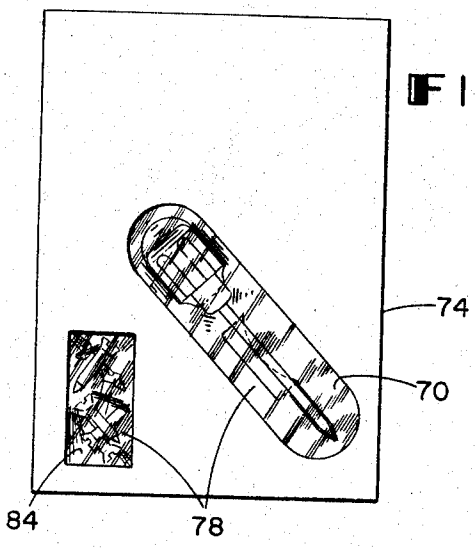


FIG. 10

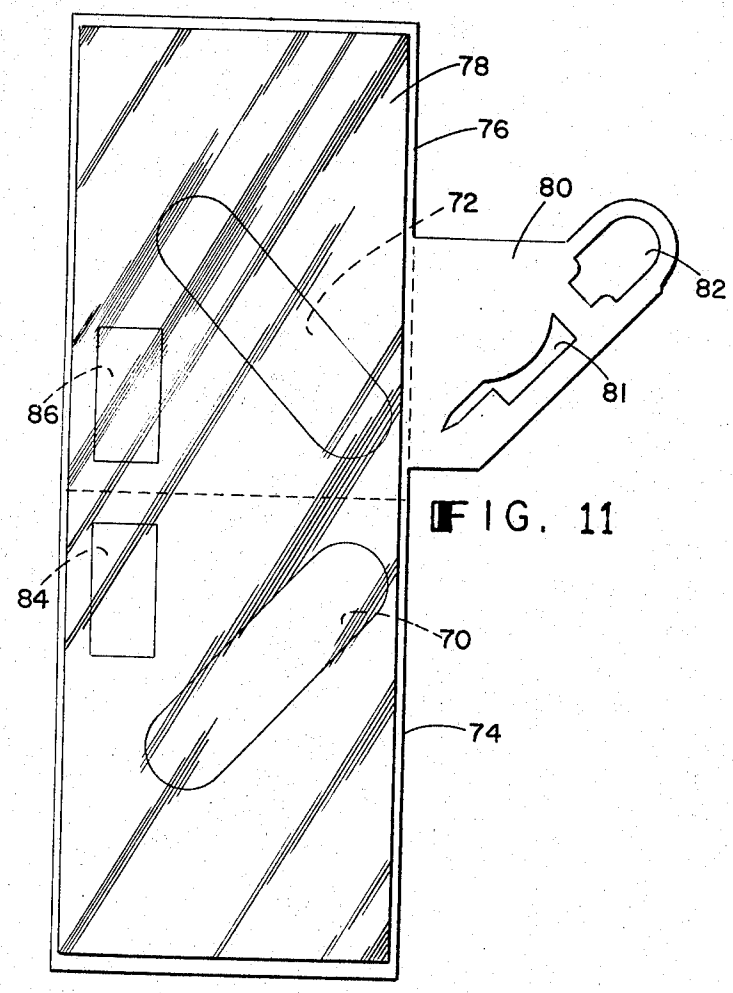


FIG. 11

United States Patent Office

3,375,921

Patented Apr. 2, 1968

3,375,921

ARTICLE DISPLAY PACKAGE AND METHOD AND BLANKS FOR MAKING SAME

Robert Joseph Ligon, Beechwood Circle, Boxford, Mass. 01921

Filed Jan. 31, 1967, Ser. No. 612,958

12 Claims. (Cl. 206—80)

ABSTRACT OF THE DISCLOSURE

Article display mounts bearing articles inserted through an opening in the mount and enclosed in heat shrunk film, including those of the stand-up type, provide greater areas of film for stretching during the packaging process and impose less stress on the heat shrunk film, particularly where the articles possess sharp corners or other protrusions, by utilizing an article positioning means to center or otherwise locate the enclosed article or articles with respect to the opening borders which hence can be spaced well away from the article thereby enlarging the film area without leaving the article free to move around in the enclosure. Various blank forms include a foldable flap which when folded over the opening acts as the article locator and permits a novel method of packaging utilizing the locator flap as the article positioning means during the packaging operation.

This invention relates to display packages of the shrunk-plastic window type, wherein an article extends through an opening in a cardboard mount and is enclosed within transparent, heat-shrunk film material which stretches over the article and is anchored to the mount. The invention further relates to the method of making such packages from novel blanks.

Some such packages are of the stand-up type as disclosed in United States Patents Nos. 3,064,402 and 3,185,295, where one end of the article is substantially flush with the folded end of a mount consisting of two folded layers. Others have the articles spaced from all the outer edges of the mount, which is either two-ply or folded layers of a single ply.

While packages of both types have enjoyed considerable use, the stresses exerted on the heat-shrunk film during and after the heat-shrinking operation cause more inadvertent film failures by rupture than one likes to encounter, causing rejects in the packaging operation or disintegration of the package during storage, involving losses in time and effort. The problem becomes most acute when rectilinear or other sharp corners or protrusions are present over which the film is snugly stretched at substantially right angles as is necessary to keep the article from moving about in too big an enclosure, spoiling its neat appearance, uniform with its sister articles.

Packages of the present invention greatly alleviate the rupture problem without sacrifice in uniform, neat and secure article placement by substantially reducing the included angles in the folds of the shrunk film. This is done by deliberately making the opening in the mount substantially oversize to increase the areas of the opening-covering portions of the film and increasing the internal volume of the enclosure to an extent that the article would be capable of moving around in the enclosure, but for the inclusion of an article positioning panel or mat

which retains the article or articles in a securely fixed position within the inside volume of the enclosure.

The result is that the package is embraced on all or some of its sides by a stiff mat-like member and the film material is stretched over the article to enclose it, with the stretched film material being anchored to the mount along lines spaced outwardly from the article-embracing edges of the mat so that portions of the film stretching angularly away from the member from said anchoring lines overlie in spaced relation portions of the mat adjacent the article-embracing edges.

This enlarges the area of the material which is subject to the stretching and subsequent heat shrinking so as to distribute the stresses over a wider area of the film. Nevertheless, the article is positioned in the center of, or in any other fixed position within the enclosure, and will not rattle around or become displaced inadvertently from its such fixed position.

The article-positioning mat can be adhesively sandwiched between two layers of the mount but preferably is integral with the mount as a folded-in flap attached to either an end or a side of the mount. The flap is formed with internal article-embracing edges either as a recess extending in from a free edge thereof or as an internal aperture or apertures or both.

Because of the existence of the article-embracing mat edges, one of the side edges of the package may remain unsealed for more ready access to the articles held within the enclosure.

The above and other features of the invention may be more readily understood when taken in connection with the following description of typical embodiments of the invention as illustrated in the drawings wherein:

FIG. 1 is an elevational view of the stand-up package in accordance with this invention;

FIG. 2 is a plan view of a blank used in forming the package of FIG. 1;

FIG. 3 is a cross-sectional view taken along the line 3—3 of FIG. 1;

FIG. 4 is a cross-sectional view taken along the line 4—4 of FIG. 1;

FIG. 5 is a front face view of a modified form of package;

FIG. 6 is a rear view of the package shown in FIG. 5;

FIG. 7 is a plan view of a blank used in forming the package of FIGS. 5 and 6;

FIG. 8 is a cross-sectional view taken along the line 8—8 of FIG. 5;

FIG. 9 is a cross-sectional view taken along the line 9—9 of FIG. 5;

FIG. 10 is a front face view of a further modified form of package; and

FIG. 11 is a plan view of a blank used in forming the package of FIG. 10.

The package of FIG. 1 may best be understood by referring initially to the blank of FIG. 2 which shows a sheet of normal stiff cardboard of the type used in forming display package mounts and being indicated in the drawing as divided into three panels **20**, **22** and **24**.

Panels **20** and **22** have a symmetrically laid out internal central cut-out **26** over which is heat-sealed or otherwise adhesively laminated a sheet of transparent stretchable and heat-shrinkable film **28** of a type normally used in the manufacture of such packages.

As described in U.S. Patent No. 3,185,295, pockets may

be formed in the portion of the film material **28** which spans the cut-out **26** so that an article may be deposited in one of said pockets and then the panel **20** may be folded over the panel **22** and adhered thereto around the marginal portions thereof. Normally the package has a cross-sectional area just sufficient to be embraced by the edges and the registering openings **26** after the panels have been folded into face-to-face relation.

The blank of FIG. 2, however, includes the additional flap **24** which has a recess **30**. In accordance with this invention, the recess **30** is the recess which has the cross-sectional dimension fitting the article, whereas the opening formed by the folded-over cut-out **26** is materially larger both in width and height than the width and height of the article to be packaged and hence also larger than the corresponding dimensions of recess **30**. Thus, the flap **24** is folded downwardly so that it is sandwiched, when the panels **20** and **22** are folded into overlying relation, between those panels and has edges **31**, **32** and **33** extending mat-like into three sides of the registering openings **26** of the two other panels. Flap **24** is of a height to just reach the fold line between panels **20** and **22**. The folded-over registering edges **34**, **35** and **36** of the registered openings of the two panels **20** and **22** formed by cut-out **26** are, on the contrary, all spaced from the edges of the package A as shown in FIGS. 3 and 4. Accordingly, the transparent film material **28** extends outwardly (FIG. 3) from the edges **34**, **34** and the edges **36**, **36** and (FIG. 4) from the edges **35**, **35** away from the article positioning mat **24** and in spaced overlying relation thereto with the result that the included angles formed in the folds of the transparent material are much larger than 90°, thus relieving some of the stress on the transparent film **28** and allowing a much greater safety margin in the packaging operation.

It will be understood that in the form of the package shown in FIGS. 1–4, the folded over sheets are held in folded over relation in any conventional manner such as by heat sealing the transparent film material together along the marginal edges of the panels **20** and **22** or by using a separate adhesive.

For clarity the two panels **20** and **22** in FIGS. 3 and 4 are shown slightly diverging but in practice may be sealed in more parallel relation.

In the form of device shown in FIGS. 5–8, the more common window form of package is shown which does not have the stand-up feature of the package shown in FIGS. 1–4.

Here each panel **50** and **52** has a separate aperture **54** and **56** respectively so placed on the panels that when they are folded about the fold line **58** they will be in register. Flap **60** instead of having a recess has a plurality of apertures **62** adapted to receive articles and the flap **60** is adapted to be folded and sandwiched between the other two panels in mat-forming relation with respect to the registering windows formed by the film **64** laminated to the panels **50** and **52**.

In the package shown, fuses F are adapted to be packaged with four of them facing one way through the four larger holes and a central one facing the other way through the smaller center hole. This results in some contortion of the panel **60** as shown in FIGS. 8 and 9 which is not harmful.

In FIGS. 10 and 11, the package again has registering apertures **70** and **72** in two panels **74** and **76** having a laminated overlying film **78**, but here the foldable flap **80** with its apertures **81** and **82** is attached to the side instead of the end of one of the other panels, but has a configuration again whereby it may be folded into mat-like relation with the aperture **72** and sandwiched between the other two panels when they are folded into face-to-face relation so as to center or otherwise position an article, such as the screw driver shown, within the area of the registering openings. The flap fold line is thus at a right angle to the panel fold line. The other film-covered apertures **84** and **86** are conventional as for enclosing screws.

In all forms of the invention except that of FIGS. 1–4, the package may be assembled from three adhesively attached but separate, instead of integral panels, and in the FIGS. 1–4 form the mat **24** may be adhered as a separate sheet to either or both of the integral panels **20** and **22**.

In the multiple article package of FIG. 5, the folded panels **50** and **52**, while sealed along their side marginal positions need not be sealed together across the flap **60**. This leaves a pocket opening on the inside of the flap fold giving access to the fuses without destroying the package.

What is claimed is:

1. A multi-layer display package comprising a stiff intermediate member defining an opening, the edges of which opening are adapted to at least partially embrace an article to be displayed,

an article positioned in said opening and at least partially embraced by said member,

film material stretched over and wholly enclosing said article, and

two outer layers of stiff sheet material adhered together in face-to-face relationship, each of said outer layers defining an opening whose edges are spaced outwardly from the edges of said intermediate layer opening and anchoring said stretched film material along lines spaced outwardly from edges of said intermediate layer opening, portions of said film stretching angularly from said anchoring lines to said article in overlying spaced relation to underlying inner marginal portions of said intermediate member adjacent said article-embracing edges.

2. A package as claimed in claim **1**, wherein between said two outer layers of stiff sheet material are sandwiched outer marginal portions of both said stiff intermediate member and said film material on the sides of said article embraced by said intermediate stiff member.

3. A package as claimed in claim **2**, wherein said stiff member is foldably attached to one of said outer layers along one edge thereof.

4. A package as claimed in claim **2**, wherein said outer layers and the stiff member sandwiched therebetween surround said article on all sides.

5. A package as claimed in claim **2**, wherein said outer layers comprise folded panels of a single sheet of cardboard.

6. A package as claimed in claim **2**, wherein said outer layers and said stiff member comprise folded panels of a single sheet of carboard.

7. A package as claimed in claim **2**, wherein said outer layers are unattached along one edge of said display package to give access for intentional removal of an article from said package.

8. A display package blank comprising a sheet of stiff material including two foldably connected panels,

said panels having openings adapted to register with each other when said panels are folded into face-to-face relation,

stretchable film material covering said openings and adhered to said panels,

a flap foldably connected to one of said panels and adapted to be foldably sandwiched between said film-covered openings when said panels are folded into face-to-face relation,

said flap having a cut-out of smaller area than each of said openings,

said cut-out being positioned on said flap to lie within said larger openings when said panels are folded in face-to-face relation with said flap sandwiched between said folded panels.

9. A display package blank as claimed in claim **8**, wherein said openings in said panels are of identical area.

10. A display package blank as claimed in claim **8**,

wherein the openings in said panels are connected and form a double size single opening.

11. A display package blank as claimed in claim **8**, wherein one of said panels is between said flap and the other panel.

12. A display package blank as claimed in claim **8**, wherein the foldable flap is connected to one side of one of said panels and is foldable along a fold line extending at a right angle to the fold line between said two panels.

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WILLIAM T. DIXSON, JR., *Primary Examiner.*