United States Patent [19]

Selchow, Jr.

[11] **3,912,079**

[45] **Oct. 14, 1975**

[54] **THREE DIMENSIONAL SHRINK FILM DISPLAY PACKAGE**

[75] Inventor: **Donald H. Selchow, Jr.**, Monroe, N.Y.

[73] Assignee: **International Paper Company**, New York, N.Y.

[22] Filed: **Oct. 21, 1974**

[21] Appl. No.: **516,194**

[52] **U.S. Cl.** ..... **206/463;** 206/489; 206/497; 229/16 D

[51] **Int. Cl.**[2] **B65D 73/00**

[58] **Field of Search** ..... 206/45.14, 45.33–45.34, 206/461–463, 466, 479, 488–489, 497; 229/14 C, DIG. 12; 248/150, 152

[56] **References Cited**

UNITED STATES PATENTS

3,173,540	3/1965	Lapides	206/462 X
3,764,002	10/1973	Spiegel et al.	206/497 X
3,856,144	12/1974	Kelly	206/462

FOREIGN PATENTS OR APPLICATIONS

699,563	12/1964	Canada	206/463

Primary Examiner—William I. Price
Assistant Examiner—Steven E. Lipman
Attorney, Agent, or Firm—James D. Bock

[57] **ABSTRACT**

Container and blank therefor for forming a package in which an article is securely held while being displayed in a highly visible manner. The article cannot be removed from the container without damage or destruction of the latter thereby affording a substantial protection against pilferage of the displayed article. Package is designed to stand firmly, in effect, on three feet on counter or shelf and is substantially larger than enclosed article thus making theft of package more difficult. Blank for container is formed from a single sheet of board divided into six panels by five parallel score lines with article-surrounding openings centered on the first, third and fifth score lines. For securing the article each opening is provided with a window of shrinkable plastic sheet material or, in an alternate form with an article retaining band integral with the blank. Completed package presents unique eye-catching appearance due to fact that it comprises three radially extending wings centered on article with openings displaying at least about one-third of the side and top surfaces of the article almost irrespective of angle of view. For shipping purposes the three-winged packages may be readily and compactly fitted into shipping case.

17 Claims, 16 Drawing Figures

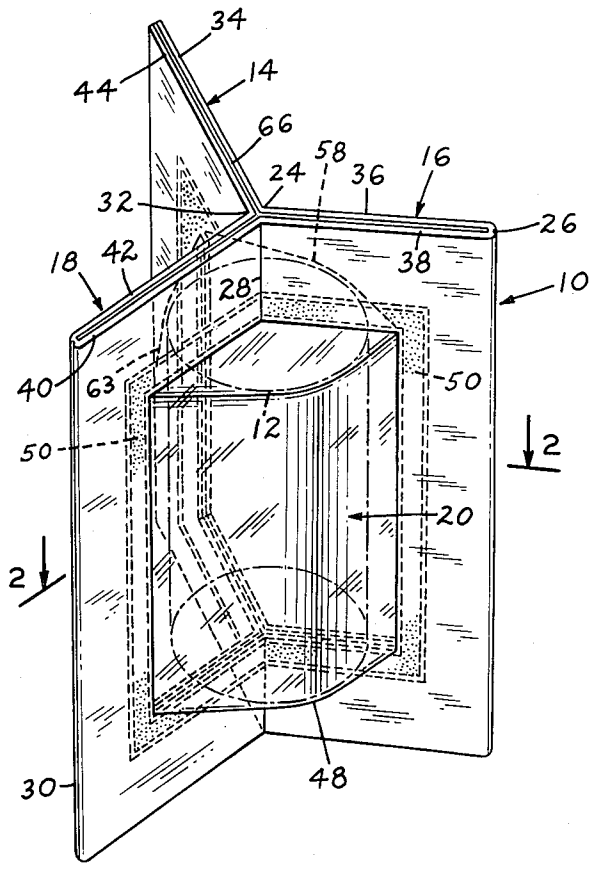


FIG.1.

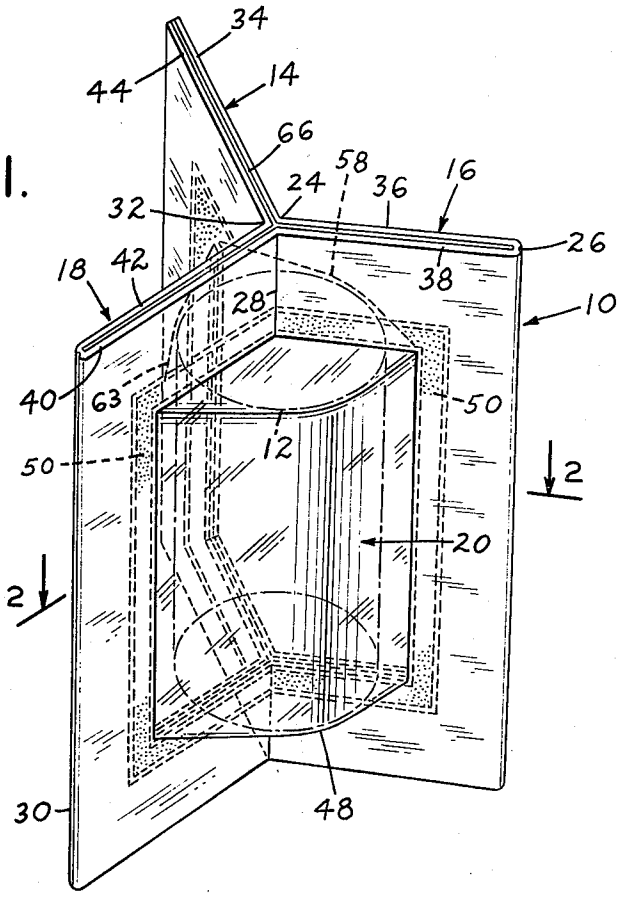
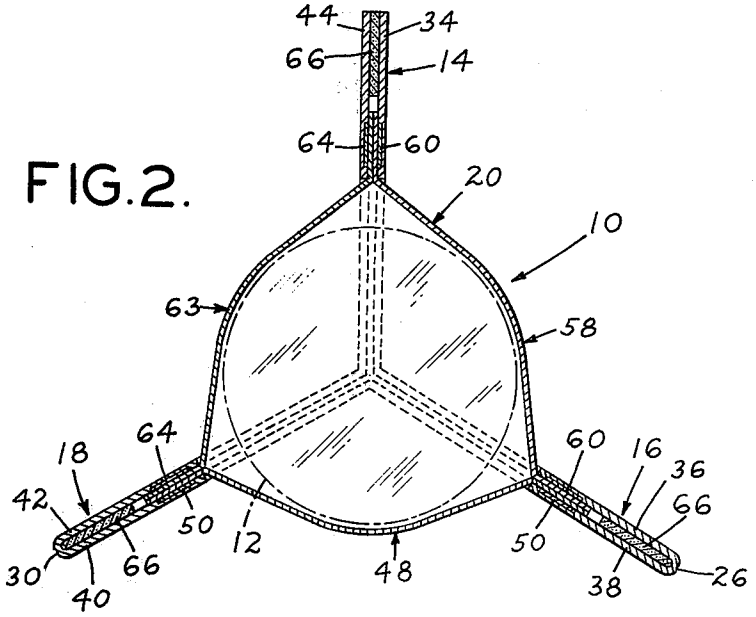

34
44
14
66
58
24
36
16
32
26
18
42
38
28
10
40
63
50
12
50
2
20
2
30
48

FIG.2.


44
34
66
14
64
60
20
10
63
58
18
64
60
16
36
42
66
50
12
50
30
66
48
38
26
40

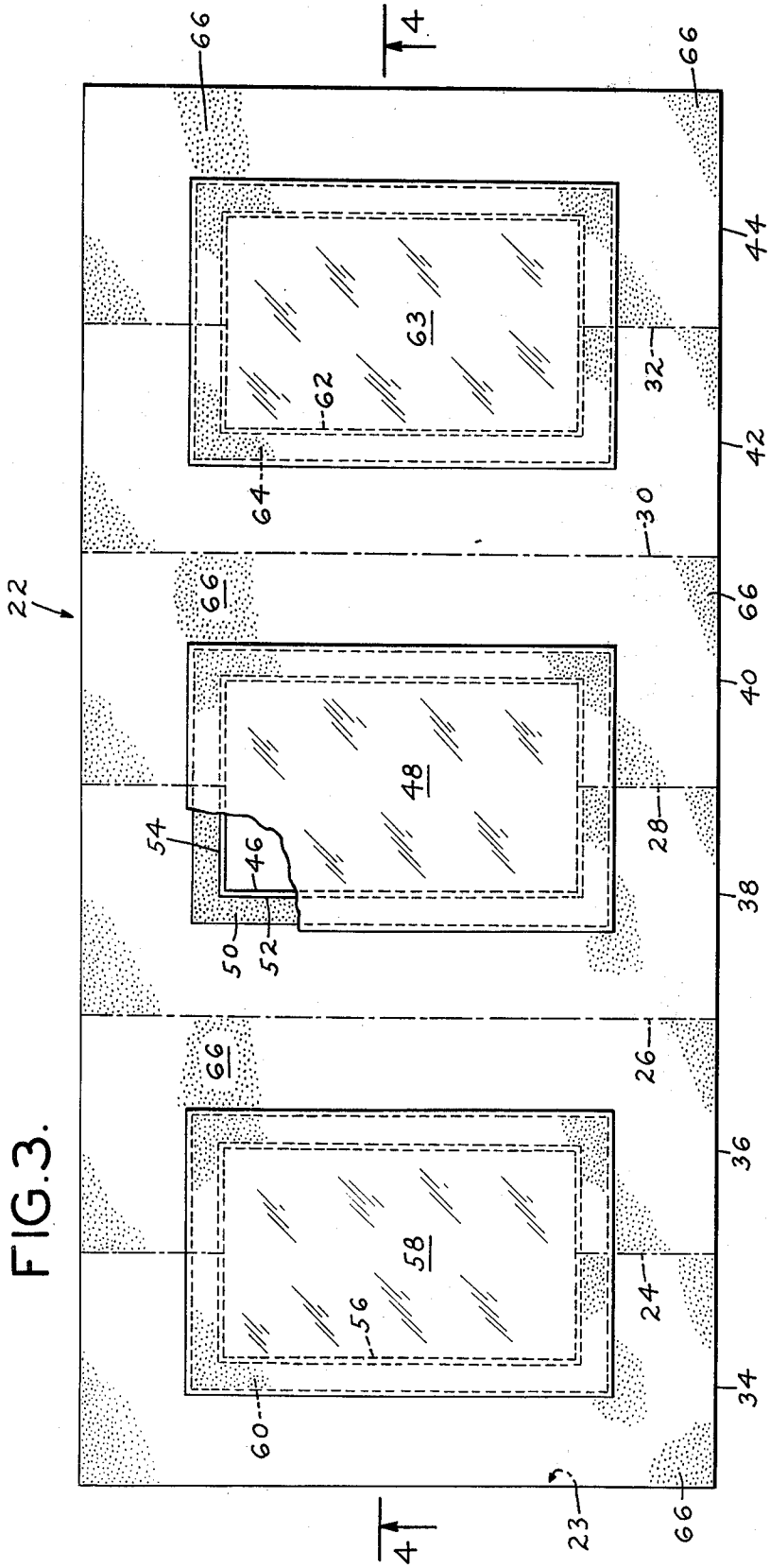


FIG.3.

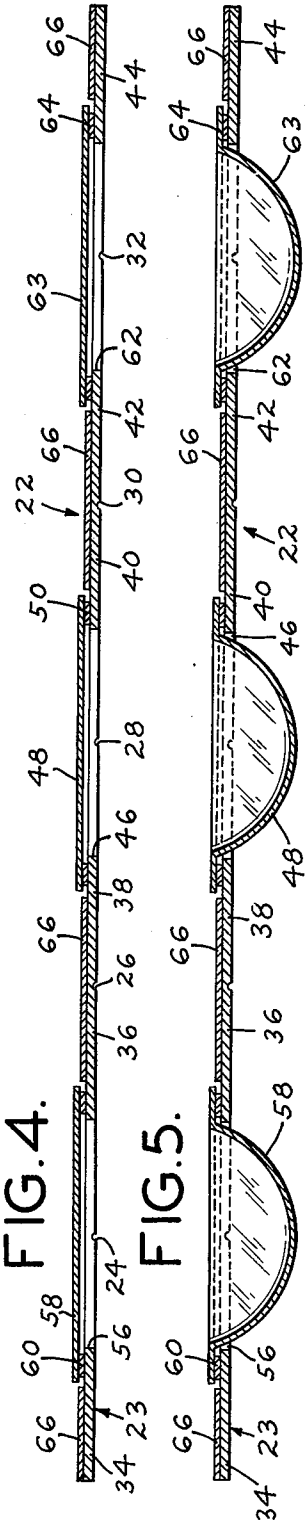


FIG.4.

FIG.5.

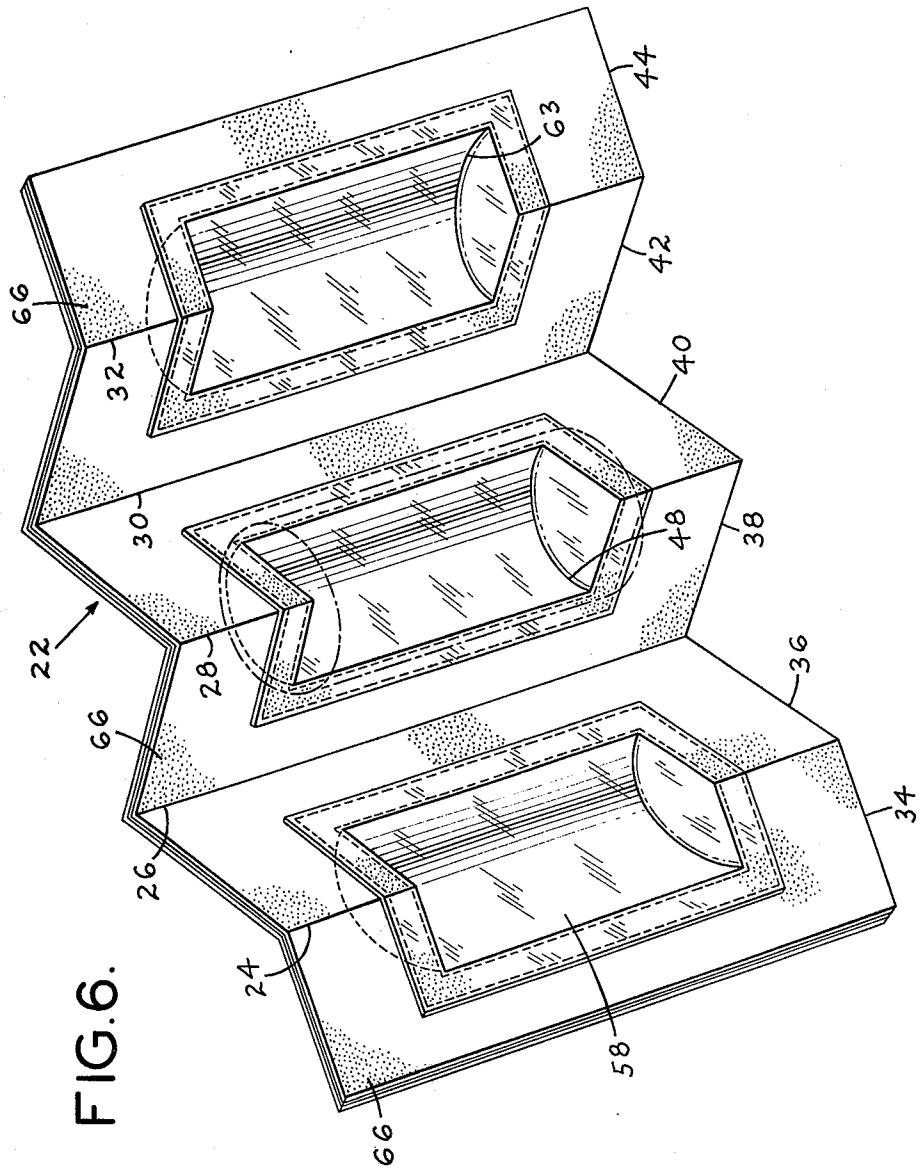


FIG.6.

FIG. 7.

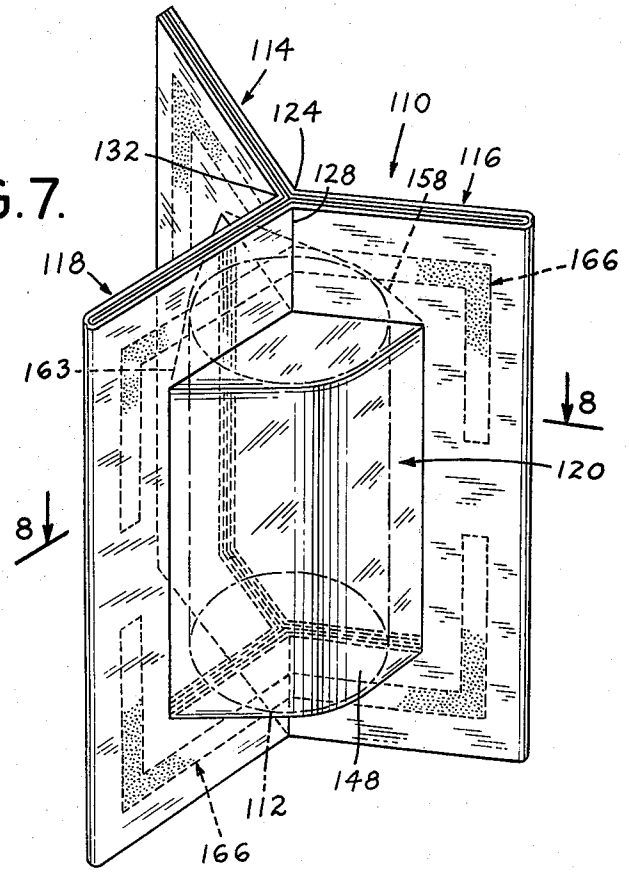
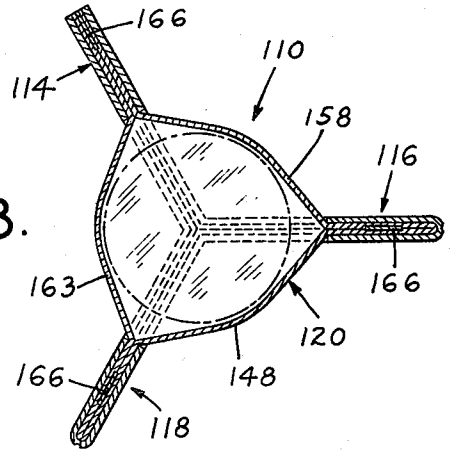

114
124
110
132
128
158
116
118
166
163
8
120
8
148
112
166

FIG. 8.


166
110
114
158
116
163
166
120
148
166
118

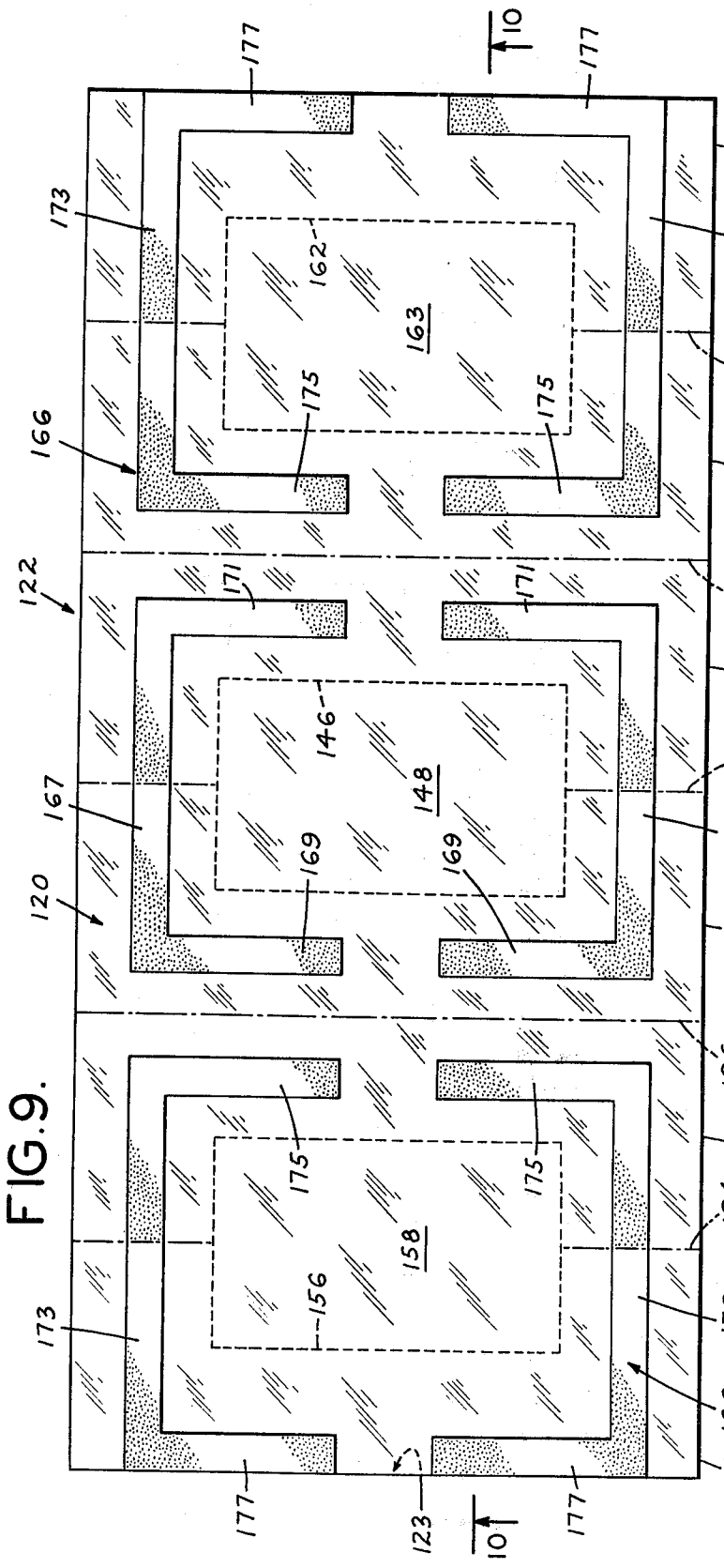


FIG. 9.

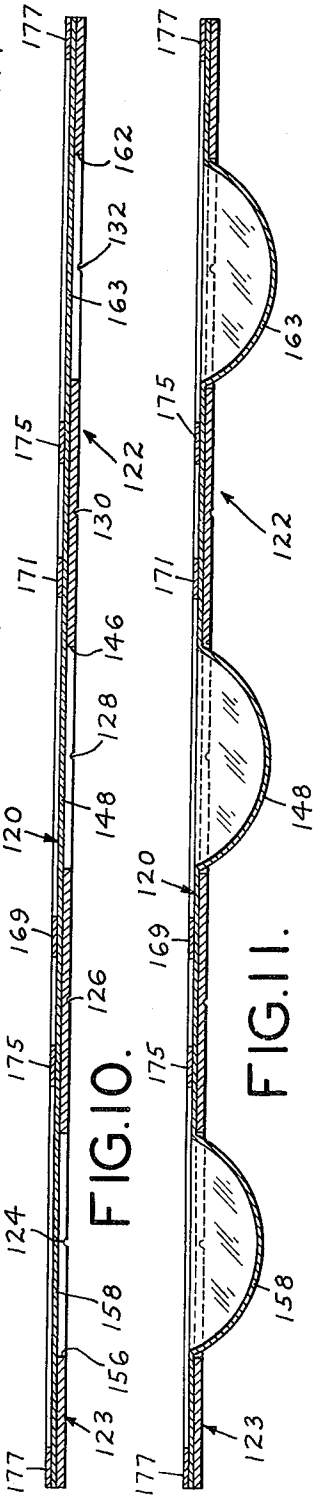


FIG. 10.

FIG. 11.

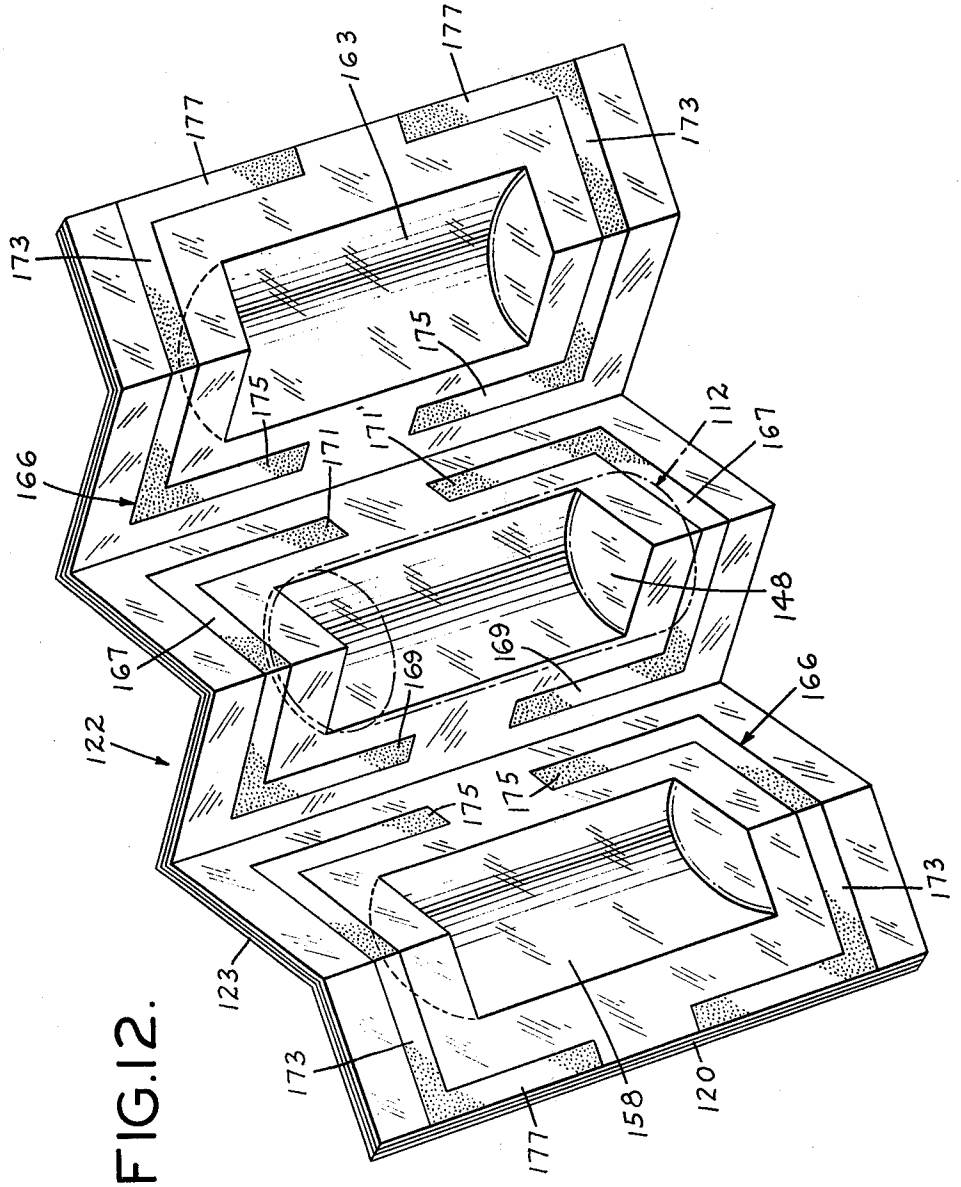

177
163
177
173
173
175
175
112
167
171
171
166
148
167
169
169
166
122
175
175
173
123
173
177
158
120

FIG.12.

FIG.13.

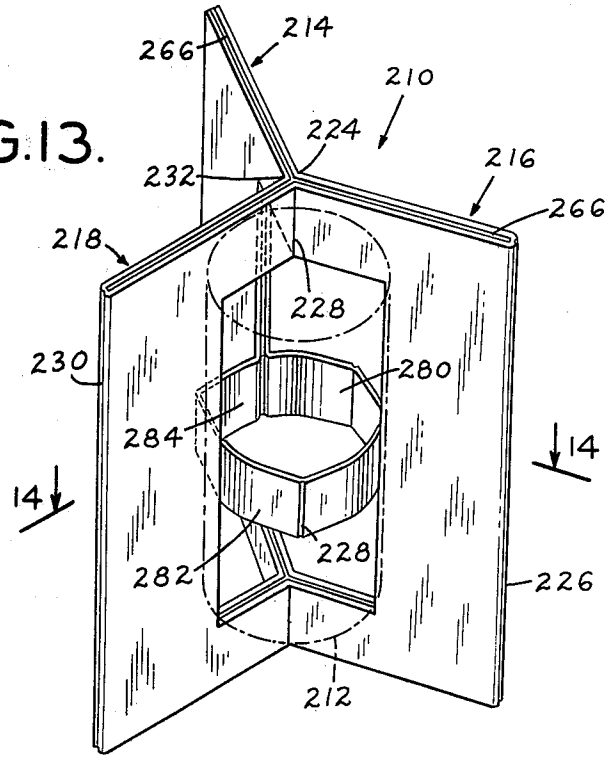
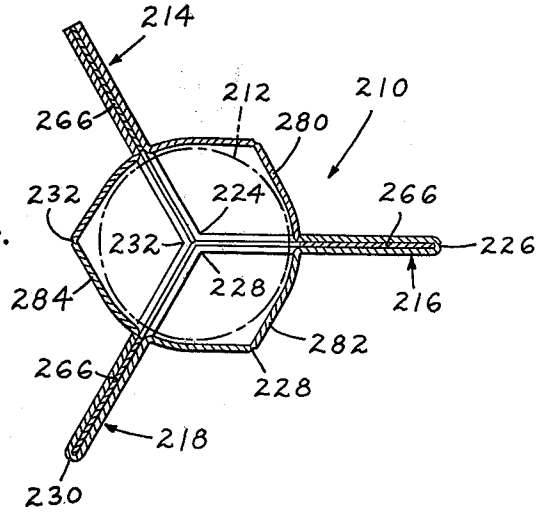

214
266
210
224
216
232
266
218
228
230
280
284
14
14
228
282
226
212

FIG.14.


214
212
210
266
280
232
224
266
232
226
228
284
216
282
266
228
218
230

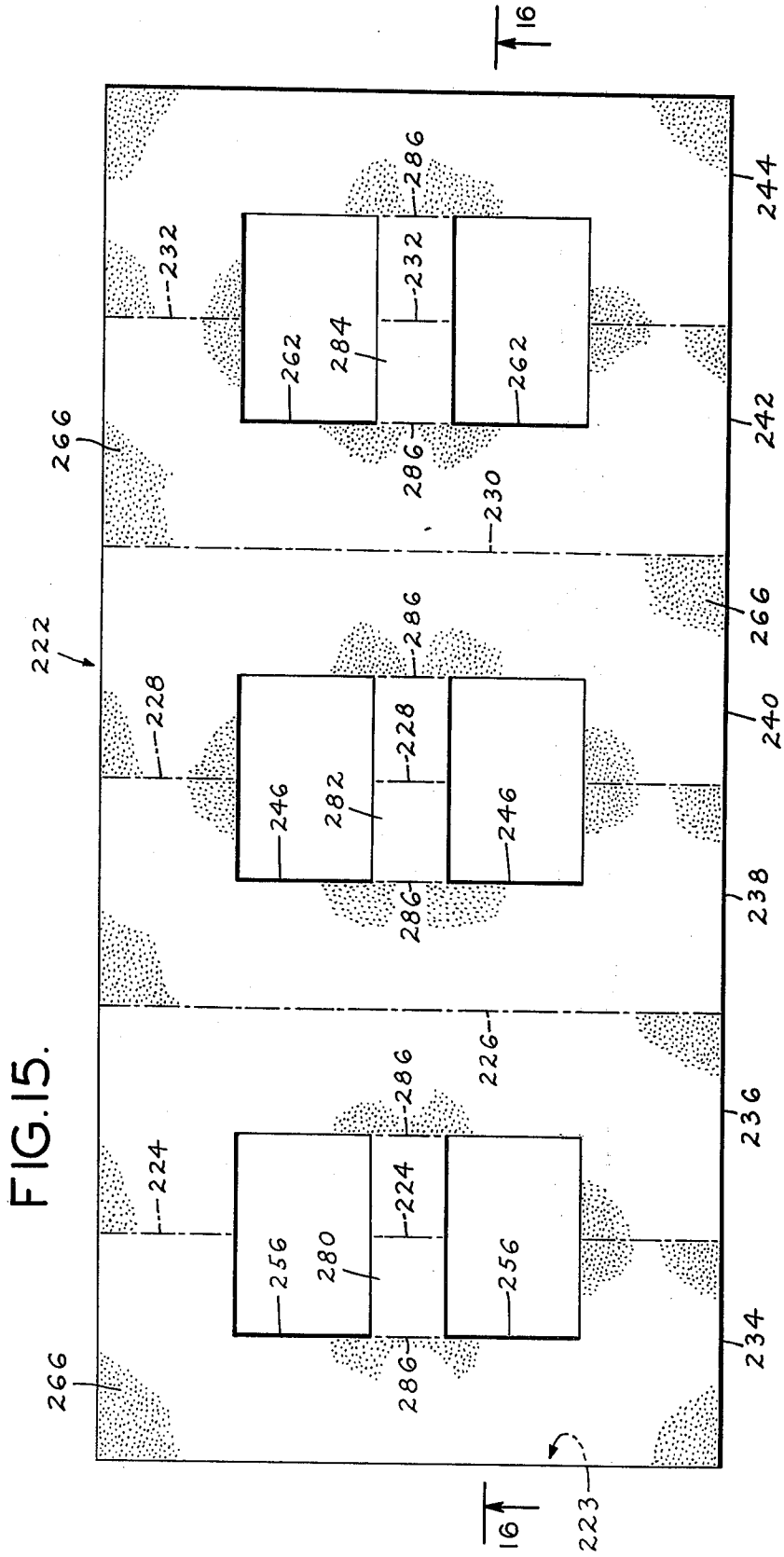

16
222
228
246
282
246
286
286
232
232
262
284
262
286
286
224
224
256
280
256
286
286
266
266
266
266
230
226
240
238
236
234
242
244
223
16

FIG. 15.

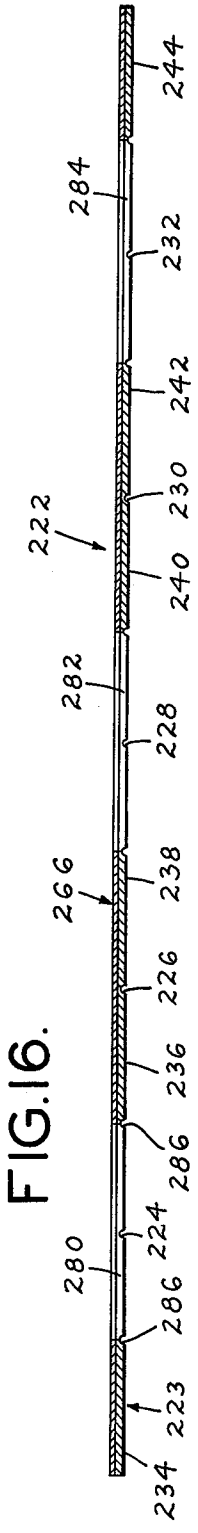

284
232
242
244
222
230
240
282
228
266
238
226
236
286
280
224
286
223
234

FIG. 16.

THREE DIMENSIONAL SHRINK FILM DISPLAY PACKAGE

BACKGROUND

An early example of package in which contents are firmly held and displayed by transparent plastic film is shown in U.S. Pat. No. 2,491,424 granted Dec. 13, 1949 to Stalter. In this patent cardboard blanks are provided with openings spanned by stretchable plastic film which is heated and stretched to form pockets for receiving contents to be enclosed and displayed. The completed package is essentially a two-ply cardboard sheet folded or laminated around the contents which are thereafter displayed in bulging transparent pockets approximately centered in the plane of the cardboard.

In U.S. Pat. No. 3,173,540 granted Mar. 16, 1965 to Lapides a similar flat cardboard blank is folded into a two ply configuration with the contents bulging outwardly and enclosed in a heat-shrinkable transparent plastic film. When the package is closed about the contents the film may be permitted to stretch to accommodate the contents and thereafter be heat shrunk to firmly and smoothly fit the contents. Alternatively, the film may be pre-stretched to approximate shape of the contents, the package is then folded and secured around the contents and, finally, the shrinkable plastic film is heated to firmly and smoothly fit the contents.

In U.S. Pat. No. 3,259,234 granted July 5, 1966 to Wood a container is disclosed for flower blossoms which is made up of two separate blanks having display openings so arranged that when put together and set up the container comprises four radially extending wings centered upon the space in which the contents are to be placed and displayed. The completed package is self-standing, in effect, on four feet.

The packages shown in said U.S. Pat. Nos. 2,491,424 and 3,173,540 are not self-standing and packages of this general type are usually hung on a special rack or, otherwise, are merely laid flat and rather poorly displayed on counter or shelf. U.S. Pat. No. 3,382,970 granted May 14, 1968 is rather typical of efforts in the past to provide a base or feet upon which the usual two-ply bulge package may stand for display.

BRIEF DESCRIPTION OF THE INVENTION

The present invention, while not limited thereto, is particularly desirable for the display packaging of relatively small relatively expensive items such as lipsticks, perfume or cologne sprays, anti-perspirants in roll-on or spray dispensers and the like. Such articles are usually attractive in appearance and frequently have brand names or other visual features which result in product recognition, whereby display of the item or product itself is desirable. However, the small size of the products makes them relatively easy for shoplifters to conceal. Furthermore, in the usual retail display of many similar products from various manufacturers, product recognition is made difficult. The present invention provides a display package which substantially increases the effective size of such products making them stand out in an assortment of similar products and making them much more difficult to steal. The package, while still displaying the product itself also affords substantial areas for imprinting of graphic displays, decorations, brand-names, special price offers and the like.

The package and the blank and container from which it is formed comprises, essentially, a single sheet of cardboard or the like which may be shipped flat to the user and then readily folded from the flat into a three-winged display package without need for unusual packaging equipment.

The blank consists of a single sheet divided into six panels of equal area by five parallel score lines. Product display openings are centered on the first, third and fifth score lines whereby when the blank is folded zig-zag fashion it assumes a three-winged conformation with the openings registering with one another along a common central fold line. The openings may be spanned by a heat shrinkable plastic film or by integral cardboard bands as may be preferred.

The plastic film windows may be formed from a single sheet laminated to the entire area of one surface of the blank or may comprise separate spot "pasted" sheets individually spanning the openings. When the container, with plastic film windows, is to be assembled with the product to be packaged, the plastic windows may be first stretched under heat to pre-form them approximately to the product, or particularly with small, smooth products the film may be stretched cold around the product as an incident to folding of the blank.

The blank folded and fitted to the product may be secured by adhesive in any of several manners as will be described. In all cases wherein heat-shrinkable plastic windows are provided the completed and secured package is finally exposed to heat for a period sufficient to shrink the film smoothly and firmly to the contour of the product.

In an alternative form the blank is not provided with plastic film windows but instead has formed therein integral straps or bands which extend transversely across each product display opening in the blank. When such a blank is folded around a product the straps will bulge outwardly to form a quite snugly fitting girdle completely encircling the product while concealing only a small portion of the surface of the product.

THE DRAWINGS

FIG. **1** is a perspective view looking downwardly upon a preferred form of package embodying the present invention;

FIG. **2** is a horizontal sectional view taken along the line **2—2** in FIG. **1**;

FIG. **3** is a plan view of the inner surface of the blank from which the package of FIG. **1** is erected;

FIG. **4** is a vertical sectional view taken along the line **4—4** in FIG. **3**;

FIG. **5** is a view similar to FIG. **4** showing pre-shaping which may be applied to the product containing pockets;

FIG. **6** is a perspective view looking downwardly upon the blank and showing the blank partially folded toward erected position and showing, in broken lines, a product being assembled with the blank;

FIG. **7** is a perspective view similar to FIG. **1** but showing a second preferred form of the present invention;

FIG. **8** is a horizontal sectional view taken along the line **8—8** in FIG. **7**;

FIG. **9** is a view similar to FIG. **3** but showing said second preferred form of this invention;

FIG. **10** is a vertical sectional view taken along the line **10—10** in FIG. **9**;

FIG. **11** is a view similar to FIG. **5** but showing said second preferred form of the present invention;

FIG. 12 is a view similar to FIG. 6 but showing said second preferred form of the present invention;

FIG. 13 is a perspective view similar to FIG. 1 but showing a third preferred form of the present invention;

FIG. 14 is a horizontal sectional view taken along the line 14—14 in FIG. 13;

FIG. 15 is a view similar to FIG. 3 but showing said third preferred form of the present invention; and

FIG. 16 is a vertical sectional view taken along the line 16—16 in FIG. 15.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to the drawings, in FIGS. 1 and 2 there is shown one preferred form of a completed package **10** including a generally cylindrical product **12** which is enclosed and displayed in accordance with the present invention. The product **12**, for example, may be a cosmetic item such as a bottle of perfume or a container of spray or roll-on deodorant, or a lipstick or the like, it being understood that the product need not be perfectly cylindrical, as illustrated, and usually will have some surface features, such as a joint between body and cover, and may be somewhat tapered or flared or otherwise shaped for styling, product recognition or functional reasons. The container which encloses the product **12** to form package **10** is made from a single blank which is a composite of paperboard, such as bleached sulphate board, and transparent shrinkable plastic film such as a polyvinyl chloride film designed to shrink at least about 20% in one or, preferably both axial directions at moderately elevated temperature. The container is folded around the product, and adhesively secured in folded position after which the shrinkable plastic is heat shrunk into firm engagement with the product.

As shown in said FIGS. 1 and 2 the completed package **10** comprises three wings **14, 16** and **18** which extend radially outward from the central axis of the product **12**, the angular spacing between wings being equal, that is 120°. Each of the wings **14, 16** and **18** is made up of two plies of paperboard, each ply having window portions closed by shrinkable plastic film indicated generally by the reference numeral **20** in FIGS. 1 and 2. The fold lines which define the three wings **14, 16** and **18** are brought together generally along a line which coincides with the central axis of the product **12** and the heat-shrunk plastic film holds and displays the product **12** floating in the transparent film, thus making the packaged product **12** highly visible. From a consideration of FIGS. 1 and 2 it will be apparent that when viewed from various angles, at least about one-third and up to about two thirds of the area of the surface of the product **12** will be visible.

The container forming a part of the package shown in FIGS. 1 and 2 will be better understood upon consideration of FIGS. 3 through 6 in which one preferred form of the blank for the container and one procedure for the assembly of the blank with the product are shown.

Referring first to FIG. 3 a blank **22** comprising a sheet **23** of rectangular configuration and made of paperboard, for example a bleached sulphate board or caliper appropriate for the size and weight of product to be packaged, is divided into six panels by five parallel and equally spaced score lines **24, 26, 28, 30** and **32**. The resulting panels **34, 36, 38, 40, 42** and **44** are paired in the sequence **34, 36** etc. for definition of windows and are paired in the sequence **44, 34**, etc. for the formation of the wings **14, 16** and **18** respectively.

The blank **22**, as shown in FIGS. **3** and **4** is completed and ready for assembly with a product **12**. The upper surface of the blank **22** as shown in said FIGS. **3** and **4** is the surface destined to become the inner surface in the assembled package. Therefore, any decorative finish or printed matter which it is desired to show on the assembled package will be applied to the under surface of the blank **22** as shown in said FIGS. **3** and **4**. The sequence of operations by which the blank **22** is brought to such completed form will vary in accordance with the manufacturer's desire or available equipment but in a general sense it will be apparent that the blanks may be cut and scored or printed, cut and scored as individual sheets or in groups formed in master sheets, from which they are later stripped, or in webs, from which they are progressively stripped, all as well known in the art. The application of adhesive materials and the spotting of the shrinkable plastic film on the blanks, as will be described in connection with the completed blank **22**, may be effected by the use of any of several well known procedures and forms of equipment.

Referring now to FIG. **3** and particularly to the central pair of panels **38** and **40** it will be noted that a rectangular window **46** is centered upon the crease line **28**. The paperboard originally positioned in the area of window **46** has been completely cut out and removed during the conventional cutting, creasing and stripping operations just discussed. A rectangular sheet **48** of suitable shrinkable transparent plastic film having dimensions somewhat greater than those of the window **46** is adhesively secured to the blank **22** in centered relationship over the window **46** by the use of any suitable spotting procedure as discussed above.

Preferably, to secure the film sheet **48** relative to window **46**, a rectangular pattern of adhesive material **50** is printed in accurate registry so as to surround the periphery of the window **46**. Preferably also, all four of the inner peripheral edges of the adhesive pattern **50**, like the left-hand vertically extending edge **52** and upper horizontally extending edge **54** revealed by the break-away of film sheet **48** in FIG. **2**, are spaced outwardly from the corresponding peripheral edges of window **46**. This leaves the film sheet **48** free of adhesive binding to the blank **22** along a narrow zone which surrounds all four edges of the window **46**. As is well known in the art, the provision of such unadhered zone substantially reduces undesirable concentration of stresses in the film sheet **48** when the sheet is subjected to stretching and shrinking steps such as will be described below.

A rectangular window **56** identical with window **46** is centered around the crease line **24** separating the pair of panels **34** and **36** and such window **56** is provided with a shrinkable plastic film sheet **58** secured by adhesive **60** all as described above in connection with window **46**.

A rectangular window **62** also identical with window **46** is centered upon the crease line **32** separating the pair of panels **42** and **44** and such window **62** is provided with a shrinkable plastic film sheet **63** secured by adhesive **64** all as described above in connection with window **46**.

The blank **22** with the shrinkable plastic sheets **46, 55** and **63** adhesively secured thereto, as described above,

may now be shipped flat from the manufacturer to a user, leaving it to the user to apply additional adhesive for holding the package in assembled position. This procedure will be discussed below. However, for the preferred form of the present invention as shown in FIGS. **1** through **6**, it is assumed that the manufacturer of the blank also will apply a potentially active adhesive which may be activated by the user when the blank is assembled with a product to form a package. Solvent-activable, contact-activable or heat-activable adhesives are available in multitudinous forms and, in general, are applicable here.

Thus, in FIGS. **3** and **4**, a layer of potentially available adhesive **66** is shown extending over substantially the entire area of the inner surface of blank **22** except those areas which are covered by the plastic film sheets **48, 58** and **63**. The adhesive layer **66** therefore may be printed upon the surface of the blank **22** by a suitable printing device (not shown) having open spaces to conform approximately to the areas of the film sheets **48,** 58 and **63** to which adhesive is not to be applied and having printing surfaces otherwise covering the entire area of blank **22**. When adhesive such as layer **66** is applied by the blank manufacturer it is permitted to dry or cool as the case may be and the blank **22** may then be shipped flat to the user.

Referring now to FIG. **5** it may be desired by the user of blank **22** to pre-form the heat shrinkable plastic film which spans the windows **46, 56** and **62** approximately to the shape of the article **12** to be packaged. If so, the blank **22** may be placed upon a suitable vacuum forming device (not shown) wherein the film is heated from above and suction is applied from below to stretch the portions **48, 58** and **63** of the plastic film into a bulged conformation such as shown in FIG. **5**. As is well known the suction forming device is normally provided with pockets with porous walls which serve to form the plastic film to the shape of the pockets during this vacuum forming step. In the case of the blank shown in FIG. **5** each portion **48, 58** and **63** of the plastic film is vacuum formed to constitute approximately one-third of a cylinder generally corresponding in size with the article **12** to be packaged.

In FIG. **6** a step in the assembly of container blank **22** with an article **12** is illustrated. The pre-formed portions of plastic film sheets **48, 58** and **63** are shown as pockets bulging rearwardly of FIG. **6**. The panels separated by the first, third and fifth fold lines **24, 28** and **32** are shown partially folded along those lines rearwardly of FIG. **6** while the panels separated by the second and fourth fold lines **26** and **30** are shown partially folded along those lines forwardly of FIG. **6**. The article **12** to be packaged is shown inserted into the central pocket formed by film **48** and folding is then continued to bring the film pockets **58** and **63** into registry with article **12**. This action also brings the interior surfaces with potential adhesive **66** into face to face contact, the package thus assuming the conformation shown in FIGS. **1** and **2**. The adhesive **66** is now activated as by applying heat and pressure to the outer surfaces of each of the three wings **14, 16** and **18** (FIG. **1**). When the adhesive **66** has set with the parts secured in this conformation the heat shrinkable film in pockets **48, 58** and **63** is next exposed to heat at a temperature and for a time sufficient to cause the film to shrink into smooth and secure conformation to the article **12**. As is well known the heat shrinking step may be performed by directing jets of heated air upon the film or by exposure of the film or the entire package to radiant heat. In any event the films customarily used in the now well-developed art of shrink packaging will shrink very rapidly at temperatures well below those at which the heat sealed adhesive **66** holding the package together will be adversely affected. The demands of the present invention are not exacting insofar as the selection of a shrinkable plastic film is concerned. In general films such as polyvinyl chlorides which are oriented to shrink biaxially anywhere from about 20% to 50% or more will be found satisfactory. It will be apparent also that films oriented to shrink only along one axis may be used if care is taken to so align the shrink axis as to fall circumferentially of the article **12**.

The completed package **10** as shown in FIG. **1** may be packed in suitable groups for shipment in shipping cases, with or without dividers dependent upon the size, weight, value and fragility of the particular article **12** contained therein.

From a consideration of FIGS. **1** and **6** it will be seen that the panels **34** and **44** are adhesively secured in face-to-face relation by adhesive **66** to form the wing **14** and that panels **36, 38** and **40, 42** respectively, form wings **16** and **18**. Fold lines **26** and **30** become outer folds in the completed package. Fold lines **24, 28** and **32** become inner fold lines which substantially coincide to form the central axis of the package. With the overall adhesive pattern **66** shown in FIG. **4** it will be apparent that the paperboard will be firmly secured together in all face-to-face areas including the areas above and below article **12** and adjacent to and extending around the coinciding inner fold lines **24, 28** and **32**. These latter areas are of particular importance inasmuch as unless they are firmly adhesively secured the inner fold lines **24, 28** and **32** might tend to peel apart or open away from one another resulting in a loose package. As will be described below other patterns of adhesive application may be used but this essential feature must be kept in mind.

For display purposes it is preferred that the windows **46, 56** and **62** (FIG. **3**) be cut to a size somewhat greater than the minimum needed to accommodate the article **12**. Thus, in the completed package as shown in FIG. **1** the article **12** will float in the transparent plastic film (identified by reference numeral **20** in FIG. **1** only) to further enhance the visibility of the article. Obviously the windows could be cut to precise size to fit accurately with the article if the resulting appearance, which might convey an expression of greater security, is preferred.

In FIGS. **7** through **12** a second preferred form of the present invention is illustrated. This form differs in two respects from that shown in FIGS. **1** through **6** and the following description will be limited, insofar as practicable, to those differences. In FIGS. **7** and **8** the only apparent difference lies in the adhesive pattern **166** which serves to hold the wings **114, 116** and **118** in position to form the completed package **110** which includes an article **112**.

Referring now to FIGS. **9, 10** and **11** the blank **122** for package **110** is shown as comprising a rectangular sheet **123** of paperboard, which may be identical with the sheet **23** in FIG. **1**, and heat shrinkable plastic film, generally indicated at **120**, which in this embodiment is laminated to the entire area of the inner surface of paperboard **123** after the latter has been cut and scored

or printed, cut and scored. Thus, in FIGS. **9** and **10** the paperboard sheet **123** is scored along lines **124, 126,** 128, 130 and **132** to define panels **134, 136, 138, 140,** 142 and **144.** Cut-out openings **146, 156** and **162** are centered upon the score lines **124, 128** and **132** all as described above in connection with FIG. **3.** A single sheet of heat-shrinkable plastic film **120** is laminated to the upper surface (as viewed in FIG. **9**) of the cut and scored paperboard sheet **123** by suitable adhesive (polyvinyl alcohol when the film is polyvinyl chloride, for example) thus providing windows of plastic film **148,** 158 and **163** which span, respectively, the openings **146, 156** and **162.** These windows are identical in purpose and function with those described in connection with FIGS. **1** through **6.**

The adhesive, generally indicated at **166,** may be applied by the manufacturer of the blank in potentially activable form, as described above or may be left for the package-user to apply, as will be discussed below. Assuming manufacturer application of the adhesive **166** is preferably a heat activable material of any type suitable for bonding with the film **120.** The pattern of application of the adhesive **166** illustrated in FIGS. **7** through **12** is regarded as a practical minimum in contrast with the overall pattern disclosed in FIGS. **1** through **6.** Thus, considering first the central panels **138** and **140** in FIG. **9** it will be noted that the adhesive pattern consists generally of two horseshoe shaped applications partially embracing the upper and lower ends of the window **148.** These pattern applications consist of a horizontal bar **167** of adhesive extending from a point short of score line **126** across score line **128** and terminating short of score line **130.** From the ends of the bars **167** vertical bars **169** and **171** extend toward but terminate short of an imaginary horizontal center line of the blank **122.** Since in the erected package as shown in FIG. **7** the fold formed on score line **128** is one of those which fall on the central axis of the package the bar **167** of adhesive serves to firmly hold the panels **138** and **140** together along that fold. This is essential, as explained above.

Considering next the panels **134, 136** and **142, 144,** as shown in FIG. **9** the adhesive **166** is applied in a pattern generally similar to that just described. Thus horizontal bars **173** and vertical bars **175** of adhesive are positioned to mate and bond with corresponding portions of the horizontal bar **167** and vertical bars **169** and **171** respectively on panels **138** and **140** to form wings **116** and **118** of the completed package. The horizontal bars **173** on panels **134** and **144** extend to the end edges of these panels and vertical bars **177** extend along such edges, terminating short of the imaginary horizontal center line of the blanks **122.** In the completed package the panels **134** and **144** form the wing **114** and the adhesive bars **177** just described are positioned as to mate and bond along substantial lengths of the cut edges comprising the end edges of the panels **134** and **144.** In this manner the wing **114** is firmly held in desired position. The horizontal bars **173** on panels **134** and **132** mate and bond with each other in wing **114.** Since the bars **173** extend across score lines **124** and **132** they will mate and bond with corresponding portions of the bar **167** thus firmly holding the central folds formed along these score lines **124** and **132** in the required coincidence with the central fold formed along score line **128.**

In FIG. **11,** there is illustrated the pre-forming of pockets of the plastic film in windows **148, 158** and **163.** If this step is included it is identical with that described in connection with FIGS. **1** through **6.**

FIG. **12** shows the blank **122** of FIGS. **9, 10** and **11** in partially erected position. From observation of this FIG. **12** the manner in which the adhesive patterns, just described, will mate and bond will be apparent. The procedure for completing the package from the position shown in FIG. **12** is identical with that already described in connection with FIG. **6.**

It will be apparent that in the form of the invention shown in FIGS. **7** through **12** the adhesive may be applied to the plastic film **120** in an overall (excluding windows) pattern as shown at **66** in FIGS. **1** through **6** instead of the somewhat minimum pattern just described. Also, the pattern shown in FIGS. **6** through **12** may be used in the form shown in FIGS. **1** through **6** since this somewhat minimum pattern will be equally as effective where paperboard surfaces are to be adhesively bonded as it is where plastic film surfaces are to be adhesively bonded.

In FIGS. **13** through **16** a third preferred form of the present invention is shown in which no shrinkable plastic film is employed. Referring first to FIGS. **15** and **16** a blank **222** is shown which comprises only a paperboard sheet **223** of rectangular conformation which has been cut and scored or printed, cut and scored in a manner which is identical except in one respect with the forming of the paperboard sheets **23** and **123** described above. Thus the blank **222** is divided into six panels **234, 236, 238, 240, 242** and **244** by parallel score lines **224, 226, 228** and **230.** Article receiving openings **246, 256** and **262** are cut out as in the preceding forms but in each case an article retaining band is left integral with the paperboard stock and extending across each opening generally centrally thereof.

Thus, in opening **256** there is an integral band **280** having an extension of score line **224** extending transversely of the horizontal length thereof. Similar bands **282** and **284** are positioned in openings **246** and **262** respectively, with extensions of score lines **228** and **232** formed therein. If desired a score line **286** may be formed along the intersection of each of the ends of the bands **280, 282** and **284** with the adjacent region of the paperboard **223.**

As shown in FIGS. **15** and **16** a continuous pattern of adhesive **266** is printed or otherwise formed on the upper surface of the paperboard **223** excepting the upper surfaces of the bands **280, 282** and **284.** If this adhesive **266** is to be applied by the manufacturer it will comprise a potentially activable material whereby the blanks, completed as shown in FIGS. **15** and **16** may be shipped flat to the package-user as has been discussed above.

When the package-user assembles a blank **222** with an article **212** the blank will be folded around the article in the same manner as illustrated in FIG. **6** or FIG. **12** and the adhesive **266** will be activated to secure the package **210** in completed condition as illustrated in FIGS. **13** and **14.** In this operation the bands **280, 282** and **284** each will bulge outwardly and together will surround and retain the article **212** in the completed package. In order to remove the article **212** from the package **210** it will be necessary to break at least one of the bands and thereafter to swing at least one of the wings **214, 216** or **218** away from the broken band be-

fore an opening is made large enough for the removal of the article.

While an overall pattern of adhesive **266** has been shown in FIGS. **13** through **16** it will be readily understood that a pattern such as shown at **166** in FIGS. **7** through **12** may be used.

In all of the description above it has been assumed that the adhesive **66, 166** or **266** will have been applied to the blank by the blank manufacturer and that the adhesive will be of a potentially activable type. It will be quite apparent that certain packager-users may prefer to apply the adhesive as an incident to assembling the blanks with the articles to be packaged. In that event the user may follow any of the patterns suggested herein and may use aqueous or other solvent based adhesives whether they require heat and pressure or pressure alone or contact alone for final bonding. This broadens the field of suitable adhesives and may result in some reduction in cost, when suitable clamping equipment is available, since in some instances adhesives such as starch, silica and the like may be used.

The terms and expressions which have been employed are used in terms of description and not of limitation, and there is no intention in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

The terms "generally cylindrical" used in the claims to define the shape of the article to be packaged in accordance with this invention are intended to cover articles not only of the cylindrical conformation illustratively shown herein and the tapered or contoured articles already mentioned but also to cover articles with five or six or more sides or articles with vertically or horizontally extending ribs or flutes or articles of spool-like or other wasp-waisted appearance.

Similarly the terms "generally rectangular" used in the claims to define the shape of the blank and of the container-surrounding openings formed in the blank are intended to cover square blanks or square openings as well as the shapes illustrated in the drawings. Also, it will be apparent that the generally rectangular blanks or openings may have curved or scalloped or otherwise decoratively treated edges instead of the straight edges illustrated herein.

What is claimed is:

1. A blank for forming a container, comprising a single rectangular sheet of material such as paperboard having five parallel and equally spaced score lines formed therein to divide said sheet into six identical panels, said sheet having three identical article-surrounding openings cut out therefrom and centered respectively on the first, third and fifth of said parallel score lines, and article retaining means extending entirely across each of said openings at least in a direction which is normal to said parallel score lines.

2. A blank in accordance with claim **1** in which potentially activable adhesive material is applied to at least a portion of one surface of each of said six panels for securing of said blank in a predetermined erected condition.

3. A blank in accordance with claim **1** in which said article retaining means comprises heat shrinkable plastic film adhesively secured to said paperboard sheet.

4. A blank in accordance with claim **3** in which said plastic film spans the entire area of each of said article-surrounding openings.

5. A blank in accordance with claim **4** in which said plastic film comprises three separate generally rectangular sheets each secured to said paperboard sheet by lines of adhesive which encompass the entire periphery of each of the said article-surrounding openings.

6. A blank in accordance with claim **4** in which said plastic film consists of a single sheet laminated to said paperboard sheet and spanning each of said article-surrounding openings.

7. A blank in accordance with claim **1** in which said article retaining means comprises relatively narrow bands integral with said paperboard sheet and extending across each of said article-surrounding openings.

8. A container for generally cylindrical articles, comprising a blank including a single generally rectangular sheet of material such as paperboard having five parallel and equally spaced score lines formed therein and which are also parallel with opposite edges of said paperboard sheet to divide said sheet into six identical panels, said sheet having three identical article-surrounding openings cut out therefrom and centered respectively on the first, third and fifth of said parallel score lines, article retaining means extending entirely across each of said openings at least in a direction which is normal to said parallel score lines, said blank being folded zig-zag fashion to bring each of the two pairs of panels which lie on opposite sides of the second and fourth of said parallel score lines into face-to-face contact and to bring as a pair the two panels which lie respectively between said first score line and the adjacent one of said opposite edges and between said fifth score line and the adjacent other one of said opposite edges into face-to-face contact, thereby bringing the folds formed along said first, third and fifth score lines into substantial registry along a single line constituting a central axis of said container, and means for adhesively securing all of said pairs of panels in said face-to-face contact to form three equally angularly spaced wings extending radially from said central axis.

9. A container in accordance with claim **8** in which said article retaining means comprises heat shrinkable plastic film adhesively secured to said paperboard sheet.

10. A container in accordance with claim **9** in which said plastic film comprises three separate generally rectangular sheets each secured to said paperboard sheet by lines of adhesive material which encompass the entire periphery of each of said article-surrounding openings.

11. A container in accordance with claim **9** in which said plastic film consists of a single sheet laminated to said paperboard sheet and spanning each of said article-surrounding openings.

12. A container in accordance with claim **8** in which said article retaining means comprises relatively narrow bands integral with said paperboard sheet and extending across each of said article-surrounding openings.

13. A package comprising a container and a generally cylindrical article secured within said container, said container comprising a blank including a single generally rectangular sheet of material such as paperboard having five parallel and equally spaced score lines formed therein and which are also parallel with

opposite edges of said paperboard sheet to divide said sheet into six identical panels, said sheet having three identical article-surrounding openings cut out therefrom and centered respectively on the first, third and fifth of said parallel score lines, article retaining means extending entirely across each of said openings at least in a direction which is normal to said parallel score lines, said blank being folded zig-zag fashion around said article to bring each of the two pairs of panels which lie on opposite sides of the second and fourth of said parallel score lines into face-to-face contact and to bring as a pair the two panels which lie respectively between said first score line and the adjacent one of said opposite edges and between said fifth score line and the adjacent other one of said opposite edges into face-to-face contact, thereby bringing the folds formed along said first, third and fifth score lines into substantial registry along a single line constituting the cylindrical axis of said article, and means for adhesively securing all of said pairs of panels in said face-to-face contact to form three equally angularly spaced wings extending from said cylindrical axis, and said article retaining means serving to hold said article within said article-surrounding openings.

14. A package in accordance with claim **13** in which said article retaining means comprises heat shrinkable plastic film adhesively secured to said paperboard sheet.

15. A package in accordance with claim **14** in which said plastic film comprises three separate generally rectangular sheets each secured to said paperboard sheet by lines of adhesive material which encompass the entire periphery of each of said article-surrounding openings.

16. A package in accordance with claim **14** in which said plastic film consists of a single sheet laminated to said paperboard sheet and spanning each of said article-surrounding openings.

17. A package in accordance with claim **13** in which said article retaining means comprises relatively narrow bands integral with said paperboard sheet and extending across each of said article-surrounding openings.

* * * * *