Dec. 17, 1968 H. L. LEVI 3,416,648

PLASTIC FOAM HOUSING WITH LOCK-ON COVER SLEEVE

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Fig. 1.

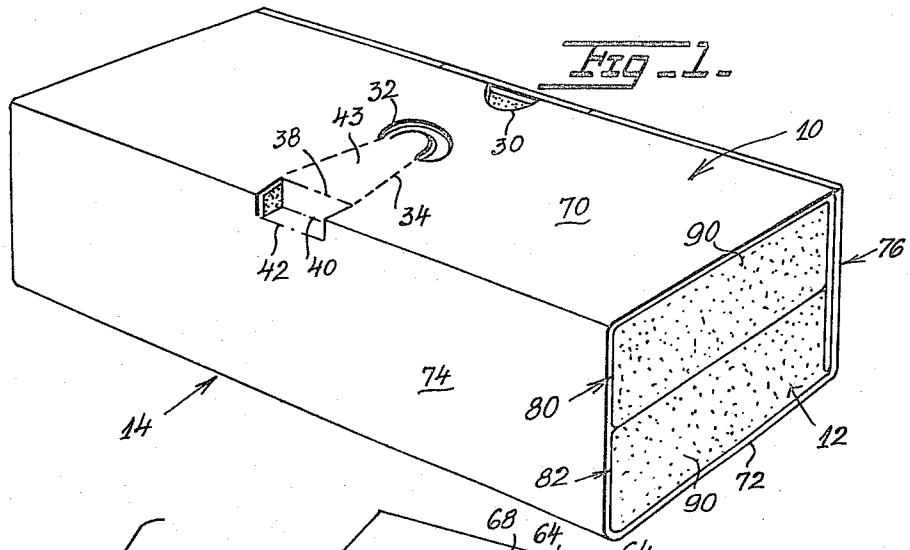
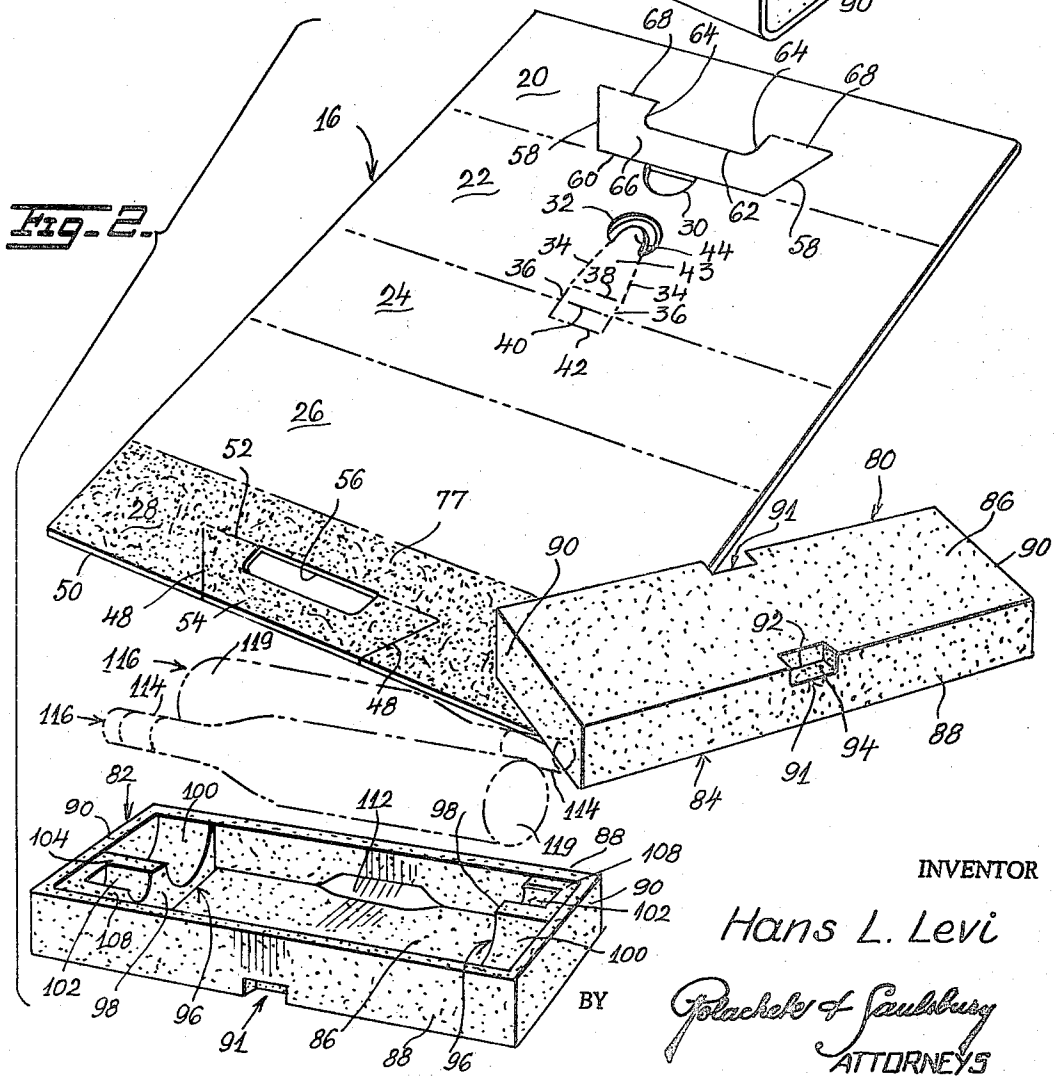


Fig. 2.



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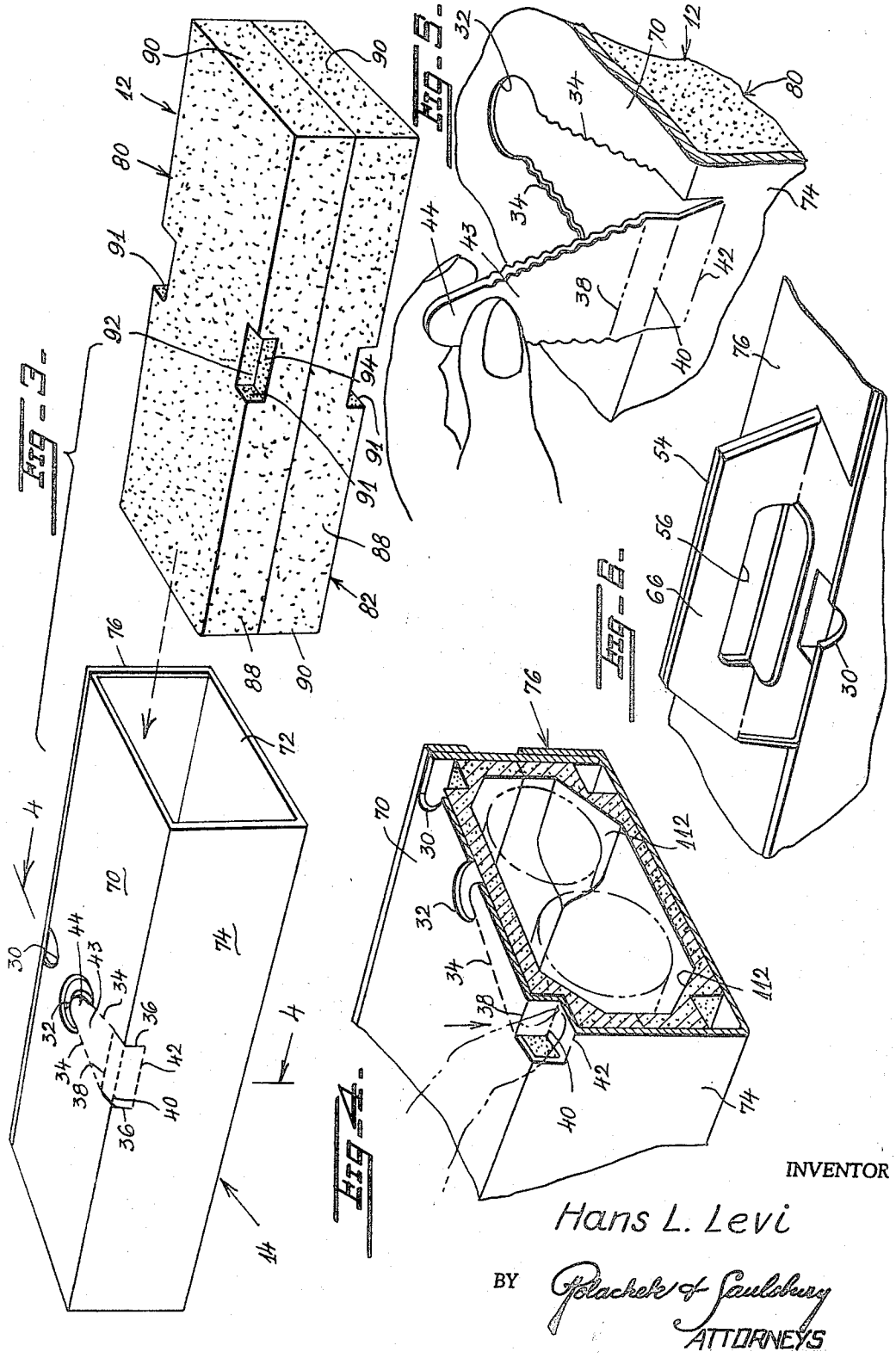
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PLASTIC FOAM HOUSING WITH LOCK-ON COVER SLEEVE

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ABSTRACT OF THE DISCLOSURE

A two-part package having an inner part of Styrofoam plastic forming a housing for supporting the contents in a fixed position and an outer wrap around cardboard carton open at both ends, with means for preventing relative movement between the inner housing and outer carton. The package is open at both ends. A handle is provided on the carton.

This invention relates generally to packaging of fragile items in foamed plastic enclosures and an outer protective and decorative sleeve for such enclosures.

Heretofore, a variety of items, especially of a fragile nature, has been packaged in containers made of expanded or foamed plastics, such as "Styrofoam," either by shipping the foamed plastic enclosures without further protection, or by placing them in cardboard boxes or cartons having closed ends formed by overlapping glued flaps. Such cartons required considerable amounts of material and costly labor in closing them. In order to open the cartons, it was necessary to tear open the flaps at the ends thereof. Furthermore, once opened, the package had to be re-glued for further use.

The general object of the present invention is to improve packaging in foamed plastics and to reduce the cost thereof. More particular objects are to eliminate the necessity for closing the ends of the outer box or carton, therefore reducing the material cost, to save time and labor in assembling the package, to indicate tampering with the contents, and to provide a better and more attractive package with improved eye and sales appeal. A further object is to provide a package which is readily disassembled by the purchaser and which may be reused by the purchaser if desired. This reuse may be for a part or all of the package.

Broadly the invention comprises a two-part package, namely, an inner sectional foam plastic rigid light-weight housing for supporting the contents in a fixed position, and an outer wrap-around cardboard carton open at both ends, with means for preventing relative movement between the inner housing and outer carton.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIGURE 1 is a top perspective view of a package for a pair of wine bottles, embodying the invention.

FIG. 2 is a top perspective disassembled view of the blank from which the outer carton is made and of the sections of the inner housing, the bottles being shown in dash lines.

FIG. 3 is a top disassembled perspective view of the outer carton and inner housing, covering the bottles, preparatory to insertion into the outer carton in assembling.

FIG. 4 is a cross-sectional view taken on the plane of the line 4—4 of FIG. 3, the parts being shown assembled.

FIG. 5 is a top perspective detail view showing the interlock being broken.

FIG. 6 is a top perspective detail view showing the handle in operative position.

Referring now to the various views of the drawings wherein the same reference numerals indicate the same part throughout the views, in FIG. 1 a package for a pair of wine bottles made in accordance with the invention is illustrated and designated generally at **10**. The package **10** comprises a rectangular inner sectional bed or housing **12** and a rectangular outer carton **14** of the wrap-around type. The inner bed or housing **12** is formed of plastic foam such as "Styrofoam," and the outer carton is formed of cardboard or the like.

The outer carton **14** is formed from a blank **16** of cardboard as shown in FIG. 2. The blank is divided by crease lines **18** into end panels **20** and **22** and intermediate panels **24**, **26** and **28**.

The panel **22** is formed with a semi-circular notch **30** at its juncture with panel **20**, midway the ends thereof, and with a circular opening **32** inwardly of the notch **30**. A pair of slanting spaced perforated lines **34**, **34** extend from the opening **32** to a point closely spaced from the juncture of panel **22** with panel **24**. The perforated lines **34**, **34** continue into cut lines **36**, **36** formed in the panel **22**, said cut lines **36**, **36** continuing into the adjacent portion of panel **24**. The material of panel **22** is formed with a crease line **38** across the wide ends of the perforated lines **34**, **34**; with a crease line **40** between the cut lines **36** and **36** at the juncture between the panels **22** and **24**; and with a perforated line **42** between the ends of the cut lines **36** and **36** in panel **24**. The material of the panel **22** between the perforated lines **34**, **34** and cut lines **36**, **36** constitutes a flap **43** extending into the circular opening **32**, forming a handle **44**.

Panel **28** is formed with a pair of spaced slanting cut lines **48**, **48** from the outer edge **50** of the panel, the inner ends thereof being joined by a crease line **52** forming a flap **54**. The flap is formed with a hand hole **56**, extending from its crease line **52** outwardly thereof.

Panel **20** is also formed with a pair of slanting spaced cut lines **58**, **58** extending outwardly from its juncture with panel **22**. The material of the panel **20** is also formed with a cut line **60** joining the inner ends of the cut lines **58**, **58**. The material of the panel is also formed with a channel-shaped cut line **62** outwardly of the cut line **60** and inwardly of the cut lines **58**, **58**. Crease lines **68**, **68** extend between the outer ends of the slanting cut lines **58**, **58** and the side legs **64**, **64** of the channel-shaped cut line **62**. The slanting cut lines **58**, **58**, crease lines **68**, **68**, cut line **60** and chanel line **62** define a movable flap **66**.

In assembling the carton **14**, as best seen in FIG. 3, the panels are folded along the crease lines, the panels **22** and **26** constituting the top and bottom wall **70** and **72**, respectively. The panel **24** constitutes one side wall **74** and the other end panels **20** and **28** are overlapped and constitute the other side wall **76**. One side surface of panel **28** is coated with adhesive **77**, or the opposite side of panel **20** is coated with adhesive, so that the overlapped surfaces adhere to each other. The connected wide end of the flap **43** is flush with the adjacent portions of top wall **70** and adjacent side wall **74** as seen in FIG. 3.

The sectional bed or housing **12** is composed of two rectangular shaped sections **80** and **82**. Each section includes a shallow pan-shaped body **84** with a flat floor or base **86**, side walls **88**, **88** and end walls **90**, **90**. At the juncture of the floor or base **86** and each side wall **88**, **88**, midway the ends of the walls, a notch **91** is formed, intersecting both the floor and the side walls. Each notch is rectangular in shape in plan providing a shoulder **92** along the floor or base **86** and with a similar shoulder **94** along the adjacent side wall **88**.

At each end of the floor or base **86**, adjacent each end wall **90**, on the inside of the body, there is a cradle structure **96**. Each cradle structure includes a rectangular shaped block **98** of the same material as the body of the section, extending across the body in the space between the side walls. The blocks **98** are moulded to the body of the section. Each block is formed with a shallow wide semi-circular recess **100**, opening outwardly, and with a narrower shallow recess **102**, opening outwardly, closely spaced from recess **100**. The recesses define a shoulder **104** therebetween. The narrow recess **102** and adjacent end of the adjacent side wall **88** define a shoulder **108**. The recesses in the blocks are so arranged that the wide recess **100** in one block is opposite to the narrow recess **102** in the opposite block, as best seen in FIG. 2. Midway between the ends of the floor **86** and side walls **88, 88** there are formed opposed shoulders **112, 112**, at the juncture of the floor with the side walls on the inside of the body of the section. It is understood that this inner structure of the package refers only to the packaging of bottles, used as an example, but will vary with the contents of the package.

With particular reference to FIGS. 2, 3 and 4, when assembling the package **10**, one of the housing sections, for example, section **82**, is placed on a horizontal supporting surface with its body opening upwardly as seen in FIG. 2. A pair of wine bottles **114, 114** is placed inside the section **82**, with the neck portion **116** of the bottle placed in the narrow recess **102** in the cradle **96** at one end thereof, the left hand end, for example, as seen in FIG. 2, and with the wide end portion **119** of the bottle in the wide recess **100** in the opposite end of the body of the section, at one side, the right hand side. The neck portion **116** of the other bottle is placed in the wide recess **100** in the left hand end of the body of the section as viewed in FIG. 2. The recesses in the blocks are so dimensioned that the recesses of one section receive only one half of the area of the neck portion and closed end portion of the conventional bottle, the other half protruding outwardly of the section, and being covered by the other section of the housing. By reason of this arrangement of recesses in the cradle, the narrow neck portion of one bottle is juxtaposed to the wide bottom end of the other bottle thereby saving space. When the bottles are thus arranged and positioned, the other section of the housing section **82** is inverted and placed over section **80** with the edges of its walls seated on the top edges of the walls of section **80** as best seen in FIG. 3. The section **82** thus covers the area of the bottle protruding outwardly of section **80**. If other items are packaged, different arrangements of support will be provided for, of course.

The housing **12** with its contents is now ready to be inserted into the carton **14** through one end thereof, the right hand end, for example, in the direction of the arrow in FIG. 3. The dimensions of the carton and housing are substantially the same so that when housing **12** is completely inserted as best seen in FIG. 1, the notch **91** on one side thereof is registered with the inner connected end of flap **43**. The inner end of the flap is then collapsed by the user either by pressing his finger inwardly against the material of the flap between the lines **38, 40** and **42**, or by using automatic equipment, as best seen in FIG. 4, whereupon the material collapses and becomes pressed against the shoulders **92** and **94** of the notch **91** as seen in FIGS. 1 and 4. The two parts of the package **10** are thus interlocked preventing the housing **12** from being slid relative to the carton **14**. The engagement of the ends of the bottles with the end walls of the sections or interlocking edges of the sections prevent relative movement of the sections. The housing **12** and carton **14** are now in fixed relative positions ready for shipment and storage.

When packages **10** are stacked for shipment, the flaps **54** and **66** are in overlapped relation, with the flap **66** collapsed and flush with the material of the inner ply of side wall **76** and with the flap **54** flush with the material of the outer ply of said side wall. The overlapping flaps are adapted for forming a handle and by inserting the thumb of the hand of the user through the finger hole **30** and pulling outwardly, the flap **54** and attached flap **66** will be moved to a position perpendicular to the plane of the wall **76**, thereby opening hand hole **56**, and can now serve as a handle for manually carrying the package and contents as best seen in FIG. 6.

In use, in order to open the package **10**, the handle portion **44** of the flap **43** is grasped by the fingers of the hand of the user and the flap **43** torn away along the perforated lines **34, 34** from the material of wall **70** as best seen in FIG. 5. The interlock between the inner housing **12** and carton **14** is broken and the housing **12** with contents may be pushed outwardly thereof through one of the open ends thereof. When the housing **12** is removed from the outer carton **14**, the top section **80** thereof may be readily lifted off the bottom section **82** thereby exposing the contents. The flap **43** may be torn off completely along the perforated line **42**, and the carton can be re-used for enclosing the inner housing and carrying it about.

What is claimed is:

1. A package of the kind described comprising an outer rectangular sleeve-shaped cardboard carton, the ends of the carton being open, an inner rectangular Styrofoam sectional housing slidably mounted in the outer carton, enclosing the contents of the package, interlocking means for preventing movement of the housing relative to the carton, said latter means including a notch in at least one of the section of the housing, midway its ends, at the juncture between the top wall and an adjacent side wall of the section, said notch forming a shoulder in the side wall and a shoulder in the top wall, the top wall of the carton having a circular opening midway its ends, a pair of closely spaced perforated lines extending from the opening to a point closely spaced from the juncture of said top wall with an adjacent side wall, said top wall being formed with spaced cut lines forming continuations of said perforated lines extending from the ends of said perforated lines to the juncture of the top wall with the adjacent side wall and continuing through the adjacent portion of said side wall, said perforated and cut lines defining a flap, said flap having a crease line extending across the ends of the perforated lines and having a crease line at the juncture between the top wall and adjacent side wall and having a perforated line extending across the space between the ends of the cut lines, the material of the flap between said cross lines normally extending over the notch in the section of the housing whereby upon pressure being exerted thereupon, said material will collapse engaging the shoulders on the top and side walls of the section of the housing to prevent sliding movement of the housing sections relative to the outer carton, the shape of the contents or interlocking edges preventing relative movement of the sections of the housing.

2. A package of the kind described as defined in claim **1** wherein the flap is adapted to be torn along the perforated lines and cut lines thereby pulling the material of the flap away from the shoulders on the section of the housing whereby the interlock between the housing and carton is broken.

3. A package of the kind described as defined in claim **2** wherein the flap extends into the circular opening in the top wall, the extending portion of the flap serving as a handle for manipulating the flap in tearing it off the top wall.

4. A package of the kind described comprising an outer rectangular sleeve shaped cardboard carton, the ends of the carton being open, an inner rectangular styrofoam sectional housing slidably mounted in the outer carton, enclosing the contents of the package, interlock-

ing means for preventing movement of the housing relative to the carton, said outer carton being of the wrap-around type with a top wall, a bottom wall, side wall of a single ply of material, and an opposed side wall of double ply of material, the housing including two sections, each section having a shallow pan shaped body with side walls and end walls, the sections being disposed in opposed relation with the side and end walls thereof in abutting relation, the plies of the double-ply side of the carton being formed with slanting cut lines extending from the top wall inwardly of said wall, said plies being formed with crease lines joining the inner ends of the cut lines, said cut lines and crease lines defining flaps, the flaps having a hand hole therein, said flaps being attached to each other by adhesive whereby upon pulling of the flaps outwardly they are positioned perpendicularly to the plane of the side wall thereby serving as a handle for transporting the package.

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