United States Patent [19]

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[54] **PACKAGING SUPPORT TRAY**

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[52] **U.S. Cl.** **229/2.5**

[51] **Int. Cl.** **B65d 1/00**

[58] **Field of Search** ..... 229/2.5; 217/26.5; 220/31 S

[56] **References Cited**

UNITED STATES PATENTS

2,843,496	7/1958	Altenburg	229/2.5
2,865,547	12/1958	Van Dyke	229/2.5
3,519,189	7/1970	Bambara	229/2.5
3,551,940	1/1971	Edison	220/31 S
3,707,227	12/1972	Britt	220/31 S

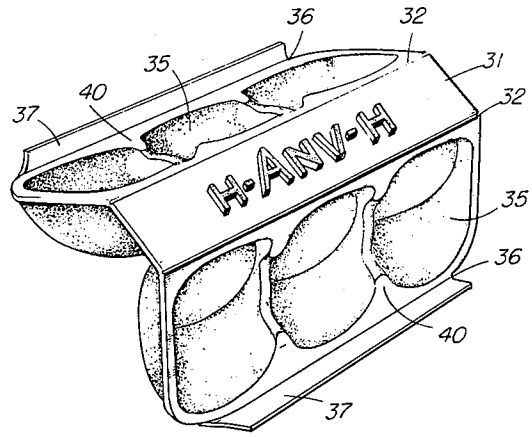
Primary Examiner—Edward J. McCarthy

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[57] **ABSTRACT**

A container for objects and particularly for fresh produce and the like which comprises a relatively planar top member having a pair of compartmented walls hinged along and depending from the longitudinal edges thereof. Optionally, the bottom longitudinal edges of the container walls may be provided with longitudinally extending article retaining lips. The compartmented wall members are adapted for the reception and retention of articles such as fresh produce. The entire structure may be overwrapped with transparent film.

7 Claims, 7 Drawing Figures



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FIG. 1

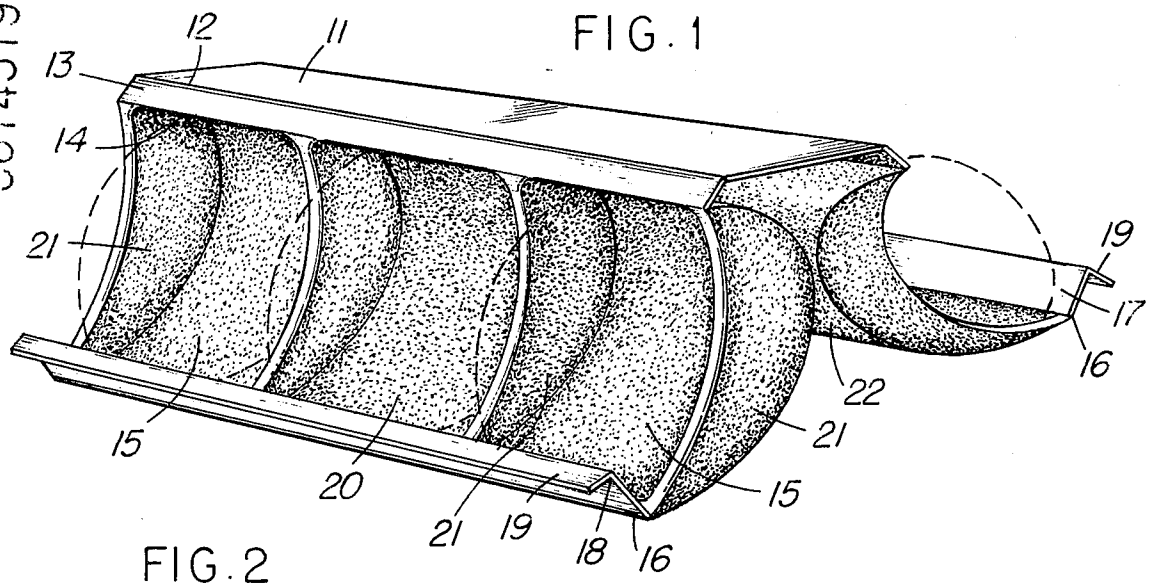


FIG. 2

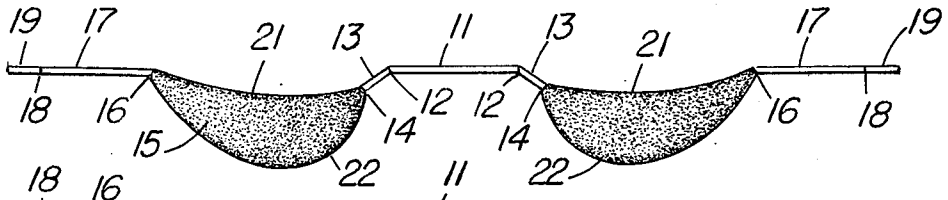


FIG. 3

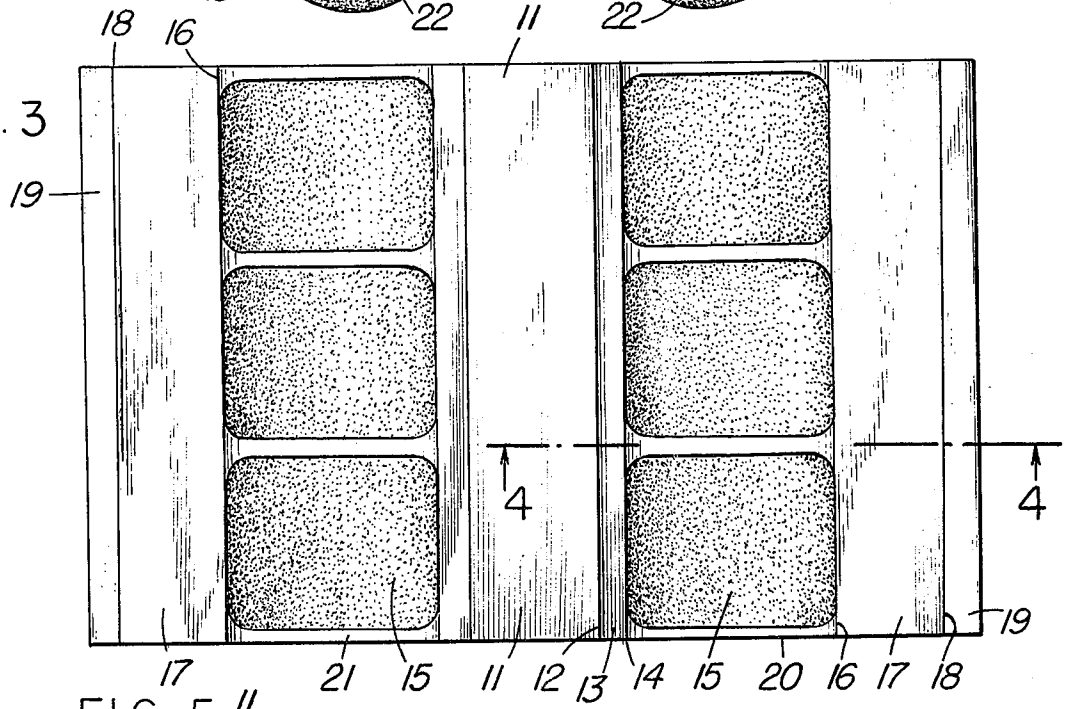
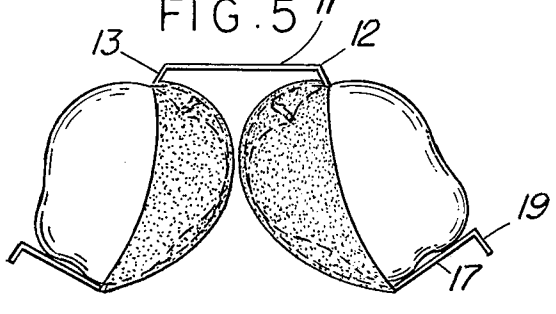


FIG. 5



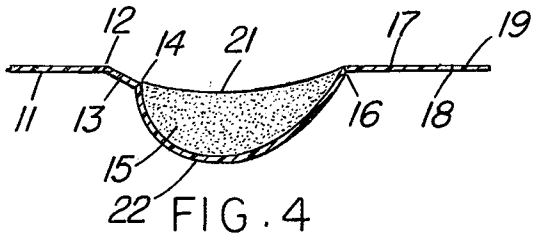


FIG. 4

FIG. 6

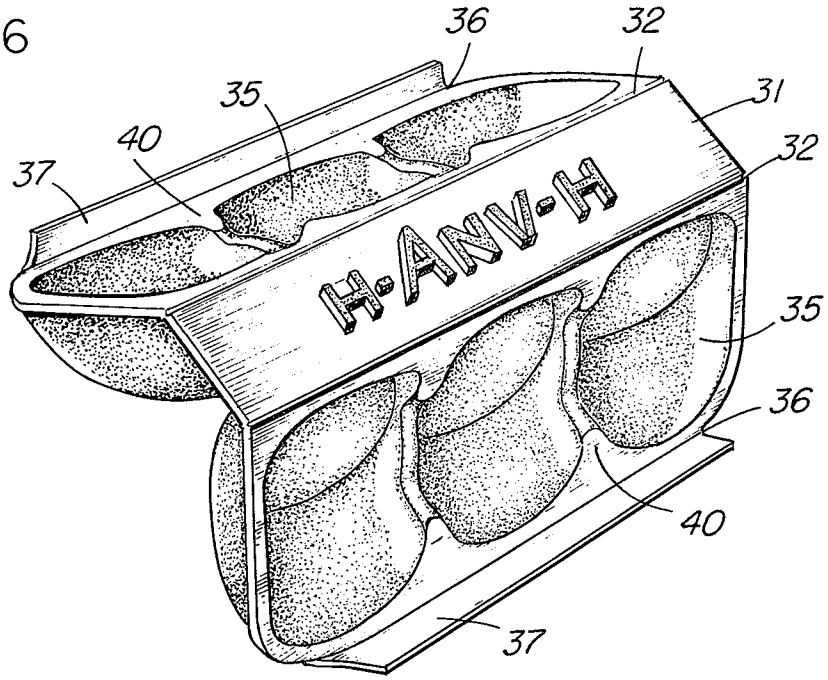
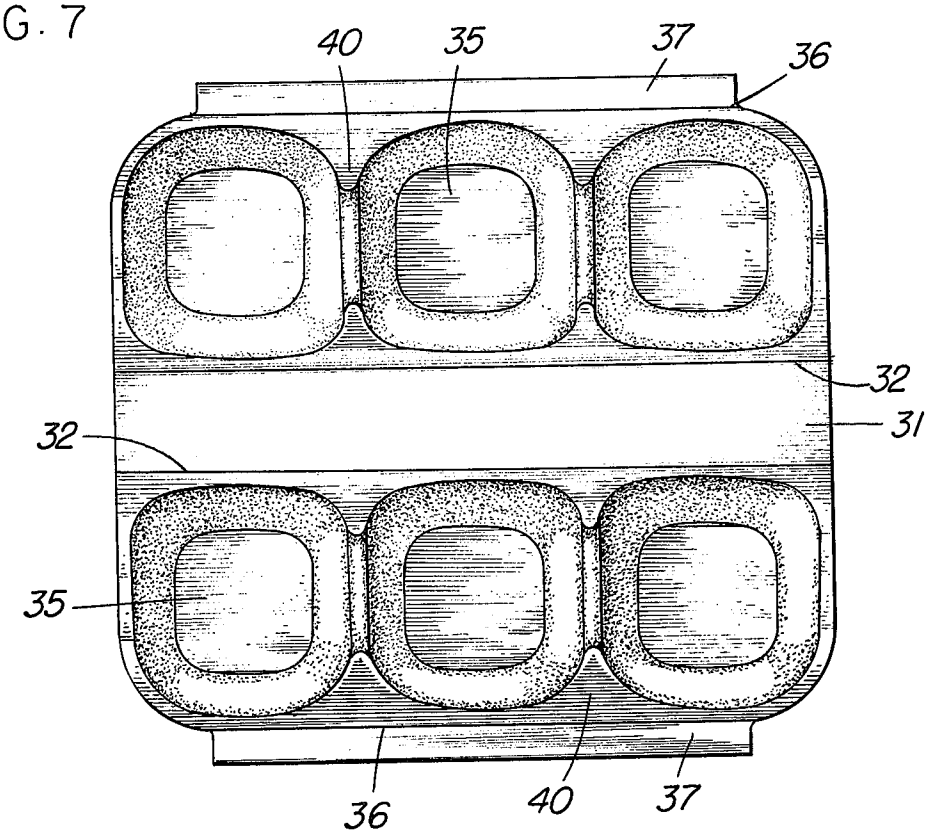


FIG. 7



PACKAGING SUPPORT TRAY

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to packaging support trays particularly adapted for holding fresh fruits and vegetables. The trays containing the produce may be overwrapped with transparent film, such as polyethylene, cellophane and the like for example, and used in retail sales to consumers of such products. The trays offer a maximum degree of protection against bruising or other physical damage to the packaged commodity while affording good visibility of the product to the purchaser. Additionally the trays, as formed, may be nested together into tray stacks for economy and ease of shipment to the point of use.

2. Description of the Prior Art

In the past, support trays which were commonly employed in the retail packaging of fruits and the like were simply shallow, substantially flat bottom, rectangular trays overwrapped with transparent film. Such trays did not prevent the rubbing or bumping together of objects contained thereon during transit or handling thereby causing damage to relatively delicate produce such as fruits. U.S. Pat. Nos. D 160,737 and D 166,493 illustrate forms of support trays for fruits or similar articles employed by the prior art. However, it will be noted that such package designs do not afford a maximum of product separation and protection as in the case of the tray products of the present invention.

SUMMARY OF THE INVENTION

The present invention comprises a packaging tray structure having a substantially rectangular planar top and two side walls flexibly hinged along the longitudinal edges of the planar top member. Each of the side walls has a plurality of inwardly extending recesses in side by side relationship. The recesses are substantially coextensive in height with the height of the side wall members. The recesses may have a longitudinally extending retaining and support wall hinged along their bottom edges which wall extends upwardly and outwardly from the recess base. The configuration of the recesses may be any form which generally conforms to the shape of the object being positioned therein for packaging, i.e., they may be oval, rounded, hemispherical and the like. Although a wide variety of materials may be employed to form the tray structures of the present invention, particularly preferred materials include molded pulp and plastic, such as clear plastic sheet, e.g., polystyrene or polystyrene foam for example.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an erected tray structure of the present invention.

FIG. 2 is an end elevational view of the tray structure as it is formed and before it is erected by folding along predetermined hinge lines.

FIG. 3 is a top planar view of the tray structure as it is formed and before it is erected by folding along predetermined hinge lines.

FIG. 4 is a cross-sectional view taken on line 4—4 of FIG. 3.

FIG. 5 is an end elevational view of the erected tray structure as illustrated in FIG. 1.

FIG. 6 is a perspective view of another form of tray structure in accord with the present invention.

FIG. 7 is a top planar view of the tray structure illustrated in FIG. 6 as it is formed and before it is erected by folding along predetermined hinge lines.

DESCRIPTION OF SPECIFIC EMBODIMENTS

As illustrated in FIG. 1, the container structures of the present invention comprise a relatively flat planar top wall member 11 which may be rectangularly shaped. Hinged along the longitudinal edges 12 of top wall 11 are panels 13 which hingedly connect top wall 11 with depending, compartmented side walls generally designated as 20. Side wall members 20 are characterized by having a series of compartments or pockets 15 adapted for the reception of produce such as, for example, individual apples as shown in phantom in FIGS. 1 and 5. The individual compartments are separated by partition walls 21 which form an integral part of the individual pockets 15. In a particular embodiment of the tray structures of the present invention, as illustrated in FIGS. 1 through 5, integrally hinged to and extending continuously along the base of individual compartment members 15 is an article retaining lip 17 which forms an angle with the base of compartment members 15. Lip 17 serves to provide for protection and as a base support for articles positioned in compartments 15 as more clearly illustrated in FIG. 5. As shown in FIG. 1, a longitudinally extending panel 19 may be employed to rigidify and strengthen retaining lip 17, panel 19 being integrally hinged along the longitudinal edge of lip 17.

Compartmented side walls 20 each comprise a series of inwardly projecting pockets 15 for the containment of articles it is desired to package. Although for purposes of illustration three individual pockets 15 are shown on each side wall 20, the number of pockets may vary from one up to twelve or more. As shown in FIGS. 1 and 3, the individual pockets are defined by side wall pocket members 21 and a generally concave pocket rear wall member 22.

The tray structures of the present invention may be formed from materials such as molded pulp or thermoplastic resins and the like. A particularly preferred material of construction is polystyrene foam. Typically, a sheet of polystyrene foam on the order of from about 50 mils up to about 150 mils is preheated to a forming temperature in the range of from about 170°F. to about 250°F. and is subsequently thermoformed utilizing, for example, vacuum forming techniques or matched metal molds. Preferably the tray is thermoformed in an extended position as illustrated in FIG. 3 and later, when ready for use, is erected as shown in FIG. 1 by folding along integral hinge lines 12, 14, 16 and 18 as hereinbefore discussed. The integral hinges are formed in the tray during thermoforming operations by compression of the foam along lines corresponding to the hinge areas,

Pocket side wall members 21 as illustrated in FIGS. 1 through 5 are generally planar, extending perpendicularly from pocket rear walls 22. However, the geometrical configurations of the tray pockets 15 in accord with the present invention may vary widely and are usually selected to accommodate the shape of the articles being packaged. For example, the pockets as illustrated in FIG. 6 are generally in the shape of hemispheres to accommodate rounded commodities such as oranges

and the like, for example. As shown in FIG. **6** top member **31** has flexibly hinged along hinge **32** side wall members generally designated as **40** having positioned therein inwardly recessed pockets **35** which are rounded and hemispherical in shape. As in the case of the tray structure of FIGS. **1** through **5,** an article retaining and supporting lip **37** may be provided which is hinged at **36** along the base of recesses **35.** Also, as shown in FIG. **6** planar top member **31** may be embossed or printed with advertising indicia.

While specifically preferred embodiments of the invention have been shown and described with particularity, it will be appreciated that various changes and modifications may be made without departing from the invention, and may be obvious to those of ordinary skill in the art upon being appraised of the present invention. It is intended to encompass all such changes and modifications as fall within the scope and spirit of the appended claims.

What is claimed is:

1. A packaging tray comprising a substantially planar top member, said top member having flexibly hinged along opposite longitudinal edges thereof two side wall members, said side wall members being adapted to depend downwardly from said planar top member, said side wall members being further characterized by having a plurality of inwardly extending recesses in side by side relationship, said recesses being substantially coextensive in height with the height of said side wall members.

2. A packaging tray in accordance with claim **1** wherein said recess comprises a substantially concave rear wall and substantially planar side walls on opposite sides of said rear wall.

3. A packaging tray in accordance with claim **1** wherein said tray is composed of polystyrene foam.

4. A packaging tray in accordance with claim **1** wherein said tray is composed of molded pulp.

5. A packaging tray in accordance with claim **1** wherein said recess is substantially hemispherical in shape.

6. A packaging tray in accordance with claim **1** wherein said tray is composed of substantially transparent thermoplastic sheet.

7. A packaging tray in accordance with claim **1** wherein a longitudinal retaining wall is positioned along the bottom edges of said recesses, said wall extending outwardly and upwardly from said bottom edges.

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