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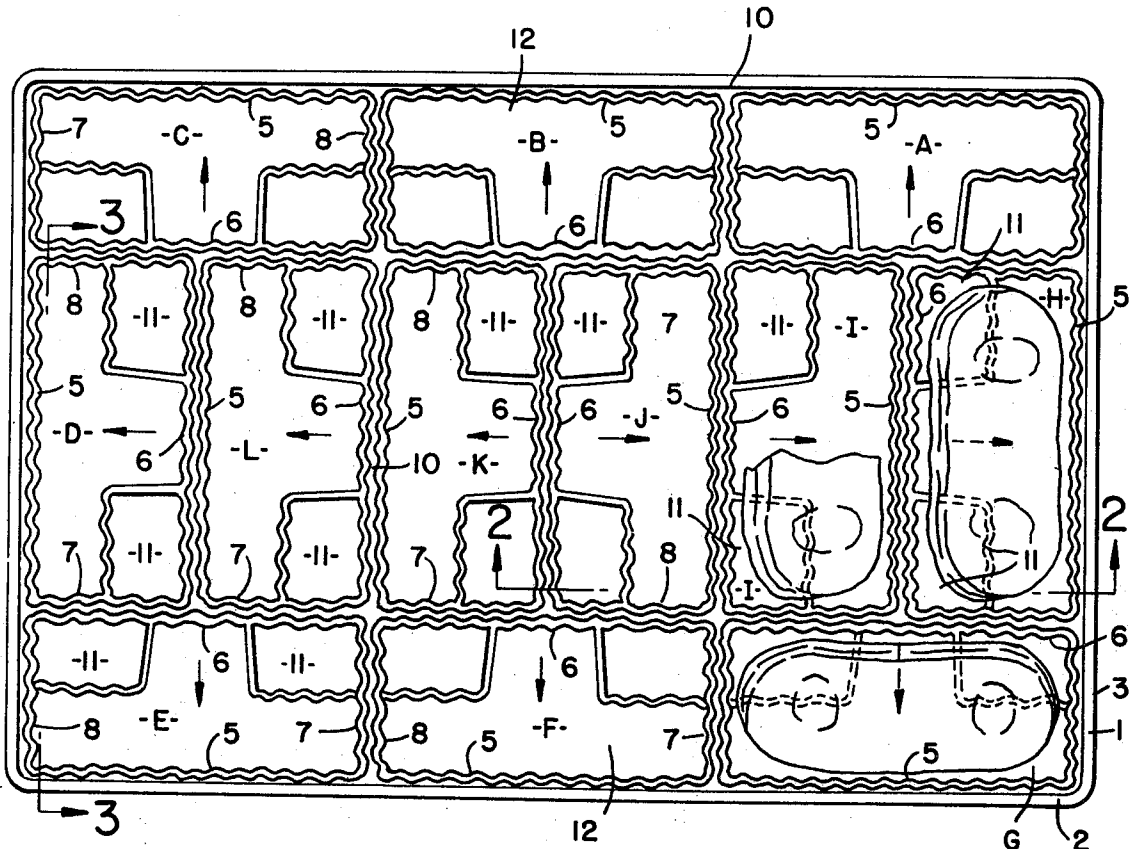
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[54] **TRAY FOR DISPLAYING AND PROTECTING
CANDY AND THE LIKE**
2 Claims, 3 Drawing Figs.

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229/2.5, 220/23.8, 217/26.5
[51] Int. Cl. **B65d 1/36,**
B65d 1/00
[50] Field of Search 229/15, 2.5;
220/97, 23.8; 217/26.5

ABSTRACT: A one-piece multicompartiment tray for protecting frangible cookies or candy has a plurality of rectangular compartments surrounded by a continuous relatively thick peripheral lip, ribs formed by adjacent walls of adjacent compartments and having a relatively thick upper portion separate adjacent compartments, some of the ribs extending to and intersecting with said peripheral lip, each of the compartments is fitted with a boss attached to two adjacent walls of the compartment, an upper surface of said boss is tilted downwards toward a boss-free wall of the cavity and toward the nearest peripheral edge of the tray that is parallel to the boss-free wall of the cavity.



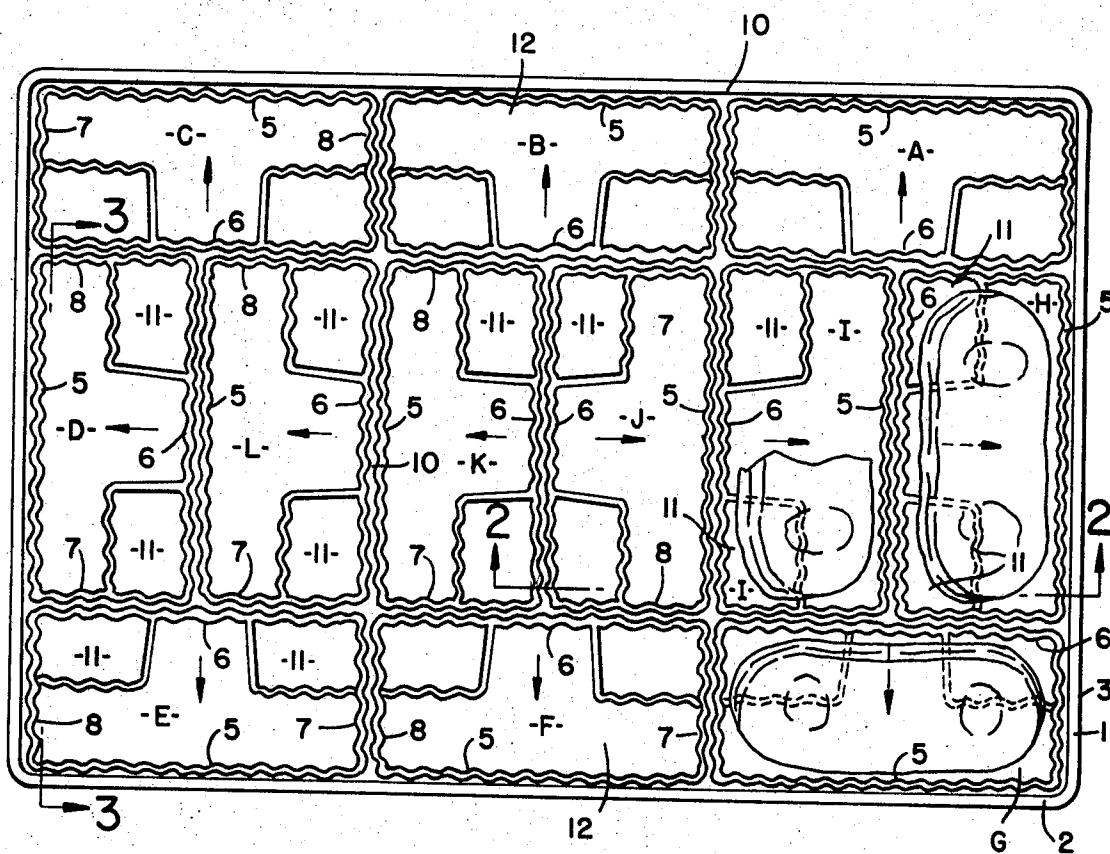


FIG. 1

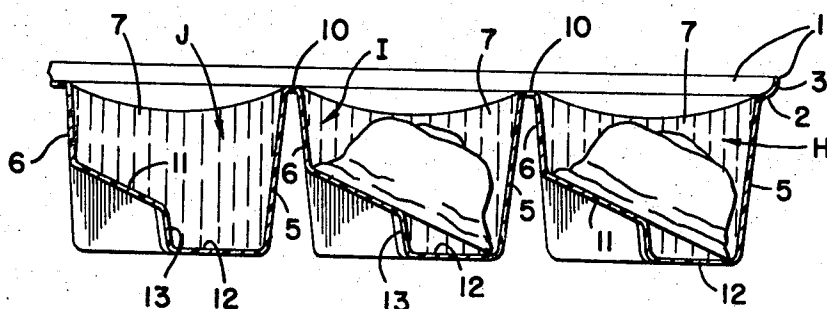


FIG. 2

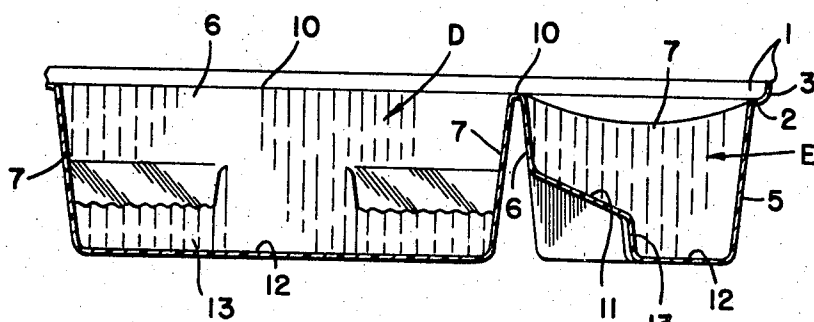


FIG. 3

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TRAY FOR DISPLAYING AND PROTECTING CANDY AND THE LIKE

The present invention relates to improvements in multicompartment trays formed of thin sheets of a thermoplastic resinous material such as polyvinylchloride, or the like. It relates more particularly to trays that are particularly suited for displaying and protecting fragile items such as chocolate-coated candy, cookies, biscuits and the like which are readily crushed.

The trays of the present invention have a plurality of individual compartments having pleated sidewalls and flexible shock-absorbing bottoms for receiving pieces of very fragile articles such as soft centered or thinly coated chocolate candy or cookies and it retains them in a tilted or sloping manner where they appear particularly attractive to the prospective purchasers.

The tilting of the frangible articles is accomplished by means of one or more flexible cushions or bosses in each compartment which bosses have a sloping or tilted upper surface and are formed from the floor and at least two wall portions of each cavity. Walls of the cavities are of pleated or fluted construction. The combination of the flexible, deformable boss with the pleated walls is found to provide a unique shock resistance that protects articles in the cavity against quite severe crushing movements.

An object of the present invention is to provide an attractive multicompartimented plastic tray which will protect fragile or perishable articles such as cookies, biscuits and candy, and will also display such articles in an especially attractive manner.

Other objects, uses and advantages will become apparent to those skilled in the art from the following description and claims and from the drawings in which:

FIG. 1 is a top plan view of a plastic tray according to this invention showing in some of the compartments thereof, fragile articles such as candy or cookies.

FIG. 2 is a sectional view taken on the line 2-2 of FIG. 1 through a portion of the trays embodying the present invention and on a slightly larger scale.

FIG. 3 is a sectional view taken on the line 3-3 of FIG. 1 through a portion of a tray.

Referring more particularly to the drawing in which like parts are designated by like numerals of reference throughout the several views. The trays of the present invention are rectangularly shaped and are formed of a single thin sheet or film of thermoplastic vinyl resin, such as rigid or substantially unplasticized polyvinylchloride, polystyrene, polypropylene, polyethylene and the like. Copolymers of vinylchloride with up to 25 percent of vinylacetate, acrylicesters, vinylesters, or vinylidene chloride are also suitable. As shown in the drawing, the trays have a plurality of elongated and generally rectangularly shaped cups or compartments which are respectively designated by the capital letters A to L, inclusive. Cups arranged along the periphery of the tray, including cups A through L inclusive, have flexible tilt means to tilt the articles packaged or displayed therein toward the longest outer wall of the cups (or compartments) that lies in or is disposed most closely adjacent a peripheral edge of the tray that is parallel to the two longer walls of said cups.

The trays preferably have an outer continuous peripheral lip portion 1, that has a laterally, outwardly projecting portion 2, adjacent to and integral with the outer walls of the peripheral cups A to H inclusive and a vertically extending portion 3, which is adapted to bear against the inner walls of a tight fitting box when desired.

The lip portion has substantially greater thickness than the thickness of the sidewalls and bottom of the compartments. This greater thickness increases the stiffness of the lip so that it cooperates with ribs separating adjacent cups as hereafter described and thus provides stiffness to the trays as a whole. Generally, the material of the lip 1, has a thickness of about 4 or 5 mils (0.004 or 0.005 inch) compared to a thickness of 1 or 2 mils for the side and end walls and bottoms of the compartments. The sidewalls and bottoms of the compartments

are therefore highly flexible and deform with concurrent energy absorption when the tray is subject to shock.

Each of the rectangularly shaped compartments A to L inclusive have fluted or pleated sidewalls respectively designated 5 and 6 and shorter pleated or fluted end walls 7 and 8 respectively. The upper surface of outer walls 5 of the compartments or cups A to H inclusive, which are adjacent to the peripheral lip 1, are attached to and integral with the laterally extending portion 2, of the peripheral lip 1, the adjacent walls of adjacent compartments are joined together at their edge portions forming stiffening ribs, having an upper surface portion, 10 of substantially greater thickness than that of the sidewalls and bottom of the compartments.

A major feature of the present invention is the provision of one or preferably two flexible bosses, each with a tilted upper surface 11, in each of the respective compartments A to L inclusive. Each of the bosses is attached to and integral with one inner sidewall 6, an end wall 7 or 8, and a portion only of the floor 12 of the compartment in which it lies. Two adjacent edges of the tilted surface 11 of each of the bosses is supported by and integral with an end wall 7 or 8 and only one sidewall 6. At least two adjacent side edges of said bosses are then supported on and integral with adjacent walls of the compartment. The remaining edges of the tilted surface of said bosses is supported by the upstanding or generally vertical wall portion 13 that extends from the bottom of the compartment. One sidewall of each compartment is therefore, necessarily free of direct connection with the sloping or tilted surface of any boss.

The surfaces 11 of the bosses in each cavity or cup are tilted downwardly towards the bottom of the respective compartments and toward a boss-free sidewall thereof in the direction shown in the drawing by the arrows therein. The tilted surface, 11, in each compartment extends from a sidewall 6 downward toward a sidewall 5 of that same compartment which wall is closer to a parallel peripheral edge or lip 1, of the tray. Thus regardless of from what sidewall the packaged material is viewed, the material is attractively displayed. The upper surface of the candy or biscuits is always near the top of a rather deep cavity.

The bosses being hollow and of very thin flexible material as above noted act as energy absorbing cushions. They will readily deform when pressure is placed on the fragile article, permitting the article to be depressed downward toward both the floor or bottoms of the cavities and sideways into the flexible ribs formed by the adjacent sidewalls of adjacent cavities. A large displacement of articles is permitted before they tend to break; almost the ultimate of article protection is thus obtained without detracting from attractiveness of the display.

It will be understood that the above description is by way of illustration rather than limitation and that, in accordance with the provisions of the Patent Laws, variations and modifications of specific articles disclosed herein may be made without departing from the spirit of the invention.

I claim:

1. A one-piece multicompartment tray suitable for attractively displaying and protecting highly frangible articles such as candy, cookies and the like during shipments and handling, said tray being of generally rectangular shape and formed from a thin sheet of a thermoplastic vinyl resin and having a multiplicity of closely spaced rectangular cup-shaped compartments for receiving the said frangible articles, said compartments having greater length than width, said tray having a continuous peripheral lip, surrounding said compartments, sidewalls and end walls of each of the compartments being generally parallel to a portion of said lip and being fluted and flexible, said continuous lip having a laterally extending portion and a generally vertically extending portion and being of heavier gauge than the sidewalls and bottom of the cup-shaped compartments, said laterally extending portion of said lip being integrally attached along its length to walls of compartments most closely adjacent thereto, walls of compartments most closely adjacent an adjacent compartment being

joined together at their upper edges to form ribs, the material at the topmost portion of said ribs being of substantially greater thickness than the material of the sidewalls and bottom of said compartments, at least some of said ribs being parallel to each side and end of said tray and extending continuously across said tray to cooperate with said lip to stiffen said tray, each of said compartments having therein at least one hollow boss having a tilted upper surface and protruding from a portion only of the bottom of said compartment and from one sidewall and an end wall thereof, the upper surface of each of said bosses being supported at its highest edge by and being integral with a sidewall of the compartment an adjacent sloping edge of said upper surface of said boss being

supported by and being integral with an end wall of said compartment, the remaining edge of the upper surface portion of said bosses being supported by and integral with a generally vertical wall portion which extends from and is integral with the floor of said cavity, the upper surface of each boss being tilted downwardly towards a boss-free sidewall of the compartment which is closer to a portion of said peripheral lip, and which is parallel to said sidewall than is said sidewall supporting said boss.

10 2. The tray according to claim 1 wherein each cavity has two bosses and the tray is composed of an unplasticized polyvinylchloride resin.

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