

United States Patent

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[33] **Great Britain**
[31] **23,848/69**

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(IS), 51 (Div)

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[54] **CONTAINERS**
3 Claims, 2 Drawing Figs.

[52] U.S. Cl..... 229/51R
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ABSTRACT: A packaging container which includes a flanged body sealed with a lid, the flange having an elongated depression formed therein which facilitates opening the container by pressing a portion of the lid into the depression to puncture it.

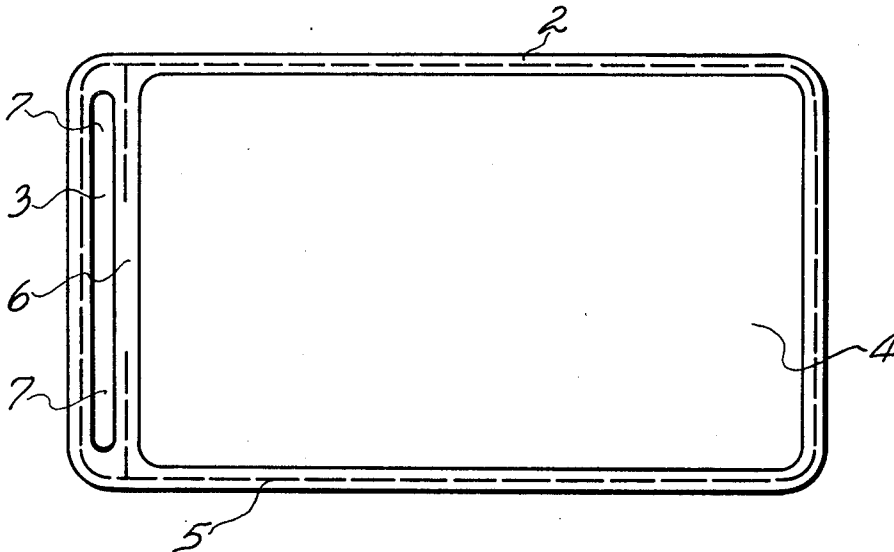


FIG. 1

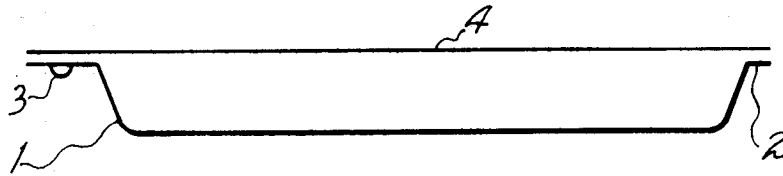
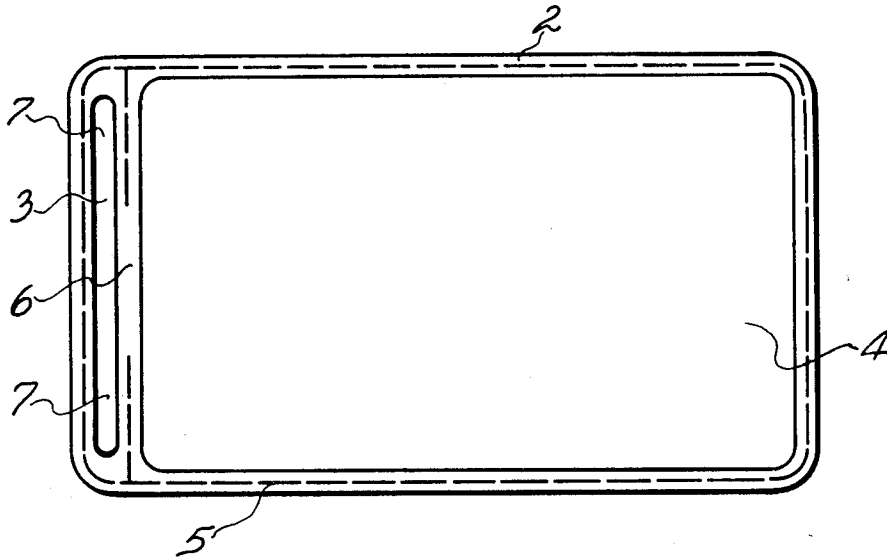


FIG. 2



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CONTAINERS

BACKGROUND OF THE INVENTION

This invention relates to containers and in particular to a new kind of packaging container that can be readily opened when required.

Thermoplastic sheets, especially biaxially oriented resin sheets, are becoming increasingly used in such applications as packaging, where their properties have facilitated the introduction of mass production techniques. Packaging containers made from thermoplastic sheets are in many cases strong, light and durable; however, in some instances their strength can be a disadvantage, since it makes the container difficult to open. A novel-type of strong packaging container which can readily be opened when required has now been developed.

SUMMARY OF THE INVENTION

The invention comprises a packaging container formed from thermoplastic sheet material, comprising a body portion having a peripheral flange to which a lid can be sealed, there being in the flange a depression forming a channel, so that after the lid has been sealed in position the container can be opened when required by pressing the material of the lid into the channel so as to puncture it.

The invention also comprises the body portion as defined above from which the packaging container of the invention can be produced.

Preferably the lid is sealed in at least one position to both sides of the flange flanking the depression so as to hold the lid taut across the depression. However, it is also preferred that the seal along the part of the flange situated between the depression and the main body of the package should be discontinuous, so as to facilitate propagation of a tear from the puncture to the part of the lid covering the main body. For example there can be one or more gaps in the seal, or alternatively the seal can be absent altogether, at this part of the flange.

BRIEF DESCRIPTION OF THE DRAWING

An example of a package according to the invention is shown in the accompanying drawing, in which:

FIG. 1 is a sectional view of the package; and

FIG. 2 is a plan view thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The package comprises a vacuum-formed polystyrene tray 1 having a flange 2 provided with a longitudinal channel 3 and having heat-sealed to it a transparent lid 4, the position of the heat-seal being indicated by the dotted line 5. The seal extends only partly along the flange on the inner side of the channel, leaving a central gap 6. The portions 7 of the lid between the double heat-seals are drawn tight by the sealing operation and the lid is then easily punctured in these places by pressing down with a fingernail or a sharp instrument. The lid can then be torn away from the tray, the tear being propagated from the puncture through the gap 6. The advantages of this design are that it can be made airtight by forming a continuous seal around the outer peripheral flange, the seal is not broken accidentally yet it can be broken easily when required, and there are no extra operations involved in its manufacture over those required to make and seal a conventional tray.

Preferably the thermoplastic sheet from which the lid is made is a synthetic resin sheet, particularly a transparent sheet of biaxially oriented resin. A biaxially oriented polystyrene

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sheet such as is sold under the name "Polyflex" (Registered Trade Mark) is often particularly useful. Other suitable resins are polyolefins such as polyethylene or polypropylene; styrene copolymers, for instance styrene-acrylonitrile copolymers; polyacrylates; polymethacrylates; polycarbonates; polyvinyl chloride; and polyethylene terephthalate. Thermoplastic cellulose derivatives such as for example cellulose acetate or cellulose triacetate can be employed if desired.

The thermoplastic sheet lid is normally relatively thin, for instance having a thickness of between 0.0002 and 0.004 inch, particularly between 0.001 inch and 0.002 inch. A sheet of thickness 0.001 is often convenient to use.

The body portion can also be formed from a thermoplastic sheet material, the materials described above being particularly useful or it can for instance be aluminum foil or cardboard having a flange treated with a heat-sealing lacquer to facilitate the sealing operation.

The body portion normally has a thickness of between 0.003 inch and 0.020 inch, particularly between 0.0075 inch and 0.015 inch, such as 0.010 inch.

The seal between the lid and the flange can be effected in a variety of ways, for instance by heat-sealing, impulse-sealing or ultrasonic sealing; or by the use of a solvent or an adhesive.

Although in the container described above the depression forming the channel is of U-shaped cross section this is not essential and for example a V-shaped, square or rectangular cross section can be employed if desired. The depression is preferably a narrow one; it usually does not need to be more than about 0.125 inch wide, and preferably the width is between 0.05 inch and 0.08 inch, for example about 0.065 inch. The depth of a depression is preferably from 0.040 to 0.080 inch but is usually between 0.050 to 0.065 inch such as about 0.060 inch. It is very often convenient for the depth of a depression to be about the same as its width. More than one channel can be present if desired.

Although not essential, it is often found desirable to provide the depression with bridging struts extending across the width of the depression to give added rigidity. These struts can for example be placed at intervals about 1 inch apart.

The lid need not be flat, and for example where the contents of a container are intended to protrude above the flange of the body portion it is usually preferable to form the lid into a suitable shape so as to accommodate the protruding portion. The lid can then itself have a peripheral flange that can be sealed to the flange of the body portion.

It is obvious that many variations may be made in the product set forth above without departing from the spirit and scope of the invention.

I claim:

1. A packaging container formed from thermoplastic sheet material comprising a body portion having a continuous imperforate flange extending around the periphery of the body portion, the flange having a channel formed therein, a lid sealed to an outer portion of the flange, said lid being sealed discontinuously to another portion of the flange situated between the channel and the body portion of the package, thereby facilitating opening the package by pressing the lid into the channel to puncture it and then tearing it from the puncture through the discontinuous portion of the seal to the part of the lid covering the body portion.

2. The container of claim 1 wherein the lid is sealed continuously to the outer portion of the flange along the full periphery thereof.

3. The container of claim 1 wherein the thermoplastic sheet material from which the lid is made is a transparent biaxially oriented synthetic resin.