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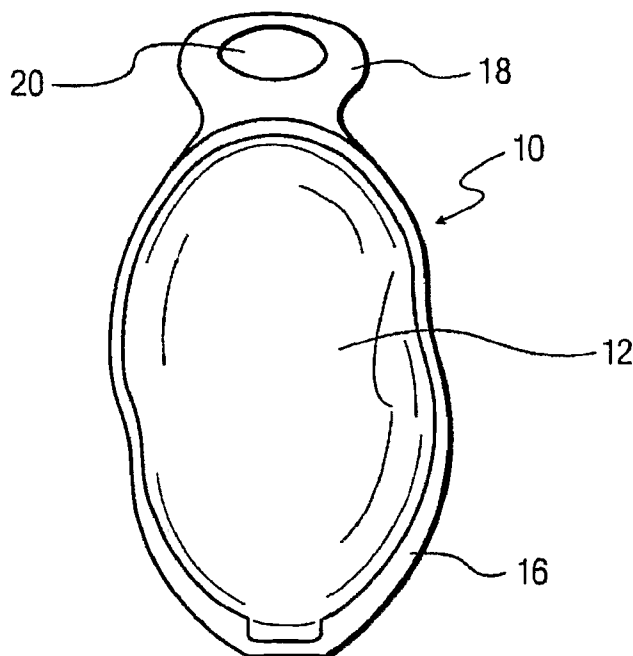
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(54) Title: EASY OPEN THERMOFORMED PACKAGE



(57) Abstract: The invention is directed to the problem of opening packages and in particular thermoformed packages. The package (10) is comprised of a first section (12) and a second section (14). Each section (12, 14) has a peripheral edge that extends substantially around each section. On at least one area, the peripheral edge (16, 18) of each section is extended, the extensions including an aperture (20). The peripheral edge of the first section and the second section are bonded together except for the extensions of the peripheral edges, in order to open the package a finger is placed through the aperture of each extended peripheral edge and pulled in opposite directions. The peripheral edge of each section yields to open the package. Essentially any item can be packaged in the package, with soap bars being a preferred item.

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EASY OPEN THERMOFORMED PACKAGE

CROSS-REFERENCE TO PRIOR APPLICATIONS

[0001] This application claims priority to U.S. Serial No. 11/263,099 filed on November 8, 2005, which is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] This invention relates to a thermoformed package that can be easily opened. More particularly this invention relates to a thermoformed package that can easily be opened without the aid of any tools or similar aids.

BACKGROUND OF THE INVENTION

[0003] Many products are packaged in thermoformed packaging. Such packaging provides significant security against theft of the packaged item since it is difficult to remove the packaged item without the use of tools such as scissors or knives. Consequently pilfering of goods at the retail level is considerably reduced. Further such thermoformed packaging can be displayed in many ways. These include sitting on a shelf or being held on a hook. They also can be locked onto a hook. This allows them to be displayed but yet to be secured. However the negative aspect is that the purchaser has a difficult time in opening the package to remove the purchased item. A tool such as a scissors or a knife is needed. Then the thermoformed package must carefully be cut and destroyed to remove the item. This all assumes that the purchaser has the strength and the dexterity to use the tools to open the package. Consequently the problem to be solved is how to provide a secure thermoformed package for the item but yet not frustrate the purchaser in opening the package.

[0004] This problem has been addressed in the prior art. In U.S. Patent 5,180,599 and U.S. Patent 6,436,499 a peelable adhesive is used between the two thermoformed layers. The adhesive will yield when the sections of the thermoformed package are pulled apart. U.S. Patent 6,135,304 and U.S. Patent 6,276,529 disclose packages where there is a weakened area which will sever upon the application of a force. Once the weakened area is severed the package can be opened. U.S. Patent 5,018,622 discloses a thermoformed package having a front blister, a rear blister and a header. The header has a front layer and a rear layer with the front layer attached to the front blister and the rear layer attached to the rear blister. There is a slit in the rear layer that permits a person to grip the rear layer to assist in peeling it away from the front layer. The fingers of one hand grip the front layer and those on another hand grip the slit of the rear layer to exert a peeling force. However this does not provide a sufficient grip to open the package. The person's fingers will slip on the plastic of the package.

[0005] The present package solves the problem and provides a convenient way to open a thermoformed package. This particularly is useful in environments where a person's hands are wet or may have a coating of a friction reducing substance such as a soap. The present package provides for a positive gripping of the thermoformed layers or sections so that they can be pulled apart.

SUMMARY OF THE INVENTION

[0006] The invention comprises a package comprising a body portion having a first section and a second section, a peripheral edge on the first section and the second section and substantially surrounding the body portion, and an extension of the peripheral edge of the first section and the second section on at least one part thereof. The extension of the peripheral edge of the first section and the second section having an aperture therein, the aperture of the first section and the second section preferably being in alignment. The apertures most conveniently are of a size and shape to accept the fingers

of a person. Further in a preferred embodiment the extension of the peripheral edge of the first section and of the second section are separate and are not bonded together. In a yet further preferred embodiment the peripheral edge of the first section and of the second section are splayed in opposite directions.

[0007] The first section and the second section can have a similar or a different shape. The shape of the first section and the second section will be determined by the items to be packaged. Preferred items to be packaged are soap bars.

[0008] The packages preferably are produced using a thermoforming process where the first section and the second section are molded separately. The two sections are then filled with the items to be packaged and the package sealed along the peripheral edge. When the packaged item is a liquid that sets to a solid or other form, the first section and second section are sealed together and the liquid inserted through a fill opening which subsequently is sealed. The package extension of the peripheral edge of the first section and the second section are not sealed together. To open the package a finger is placed through the aperture in the first section and in the second section and the sections are pulled away from each other. Once the package is opened the item is removed and the package can be discarded.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Figure 1 is a front elevation view of the present package.

[0010] Figure 2A is a side elevation view of the package of Figure 1.

[0011] Figure 2B is a side elevation view of the package of Figure 2 showing the extension of the peripheral edges in a splayed orientation.

[0012] Figure 3 side elevation view of the package being opened.

[0013] Figure 4 is a side elevation view of the package partially open and a soap bar partially exposed.

[0014] Figure 5 is a side elevation view of the package of Figure 4 fully open.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The invention will now be disclosed in more detail in its preferred embodiments with reference to the drawings. The present invention is susceptible to modifications of the incorporated concepts, all of which are within the present invention.

[0016] Figure 1 is a front elevation view of the package 10 showing the first section 12, peripheral edge 16 and the extension 18 of the front peripheral edge 16. Figures 2A and 2B are side elevation views of the package of Figure 1. Aperture 20 is through the extension 18 of the first peripheral edge 16 and the through the extension 19 of the second peripheral edge 15 as seen in Figures 2A and 2B. The second section 14 and the second section peripheral edge 15 is shown in Figures 2A and 2B. The peripheral edge extensions 18 and 19 are not bonded together. The remainder of the peripheral edges 15 and 16 are bonded together to form the package.

[0017] The embodiment of Figure 2B has several advantages over that of Figure 2A. The splayed extensions 18 and 19 make it very evident that the package is opened as shown in Figure 3. Further since in many instances the package will be contained in a small carton the splaying of the extensions will allow the carton to be of a decreased size, allow more to be stocked onto a shelf, and save carton packaging material.

[0018] Figure 3 shows the package 10 ready to be opened. A person's fingers are placed through aperture 20 in the in the extension 18 of the first peripheral edge 16 and the extension 19 of the second peripheral edge 15. The aperture 20 in each of the extensions of the peripheral edges 15 and 16 provides for positive grip in order to peel the first section 12 from the second section 14 to open the package. The package is shown as partially open in Figure 4 and fully open in Figure 5. The item packaged item here is a soap bar 22 which can be seen in both Figure 4 and 5. However, items other than soap bars can be packaged using this packaging concept.

[0019] The packaging material for the first section and the second section can be essentially any thermoplastic. These include olefinic polymers and copolymers of ethylene, propylene, butenes and butadiene. A further class of useful thermoplastics are polyesters such as polyethylene terephthalate. In addition styrenic polymers and copolymers can be used. These can be laminates or single films. The first section 12 and the second section 14, each along with their respective peripheral edges 16 and 15, are separately molded. At this point if the item to be packaged is a solid it can be placed into the first section 12 or the second section 14 and the peripheral edges 16, 15 of the first section 12 and the second section 14 sealed to form the package around the item. If the item to be packaged is a liquid the peripheral edges 15, 16 are sealed with a small fill opening left open. The package then is filled and the fill opening sealed. The liquid in the package can remain a liquid, convert to a gel, or convert to a solid. In a preferred process of packaging soap bars the package is formed leaving a fill opening. A liquid soap composition that will set to a solid is filled into the package and the fill opening sealed. Over a period of several hours the liquid soap composition converts to a solid. In this embodiment the package serves as both mold and the final package for the soap bar.

We claim:

1. A package for an article comprising a body portion having a first section and a second section, a peripheral edge on the first section and the second section and substantially surrounding the body portion, an extension of the peripheral edge of the first section and the second section on at least one part thereof, the extension of the peripheral edge of the first section and the second section having an aperture therein.
2. A package as in claim 1 wherein the aperture in the extension of the peripheral edge of the first section and the aperture in the extension of the peripheral edge of the second section are in alignment.
3. A package as in claim 2 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are separate.
4. A package as in claim 2 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are splayed in opposite directions.
5. A package as in claim 1 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are separate.
6. A package as in claim 5 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are splayed in opposite directions.
7. A package as in claim 1 wherein the first section and the second section have similar shapes.
8. A package as in claim 1 wherein the first section and the second section are thermoformed sections bonded together at the peripheral edge of the first section and the

second section, except at the extension of the peripheral edge of the first section and the second section.

9. A package as in claim 1 wherein the aperture in the extension of the first section and the second section are of a size to accept fingers of a person.

10. A package as in claim 2 wherein the aperture in the extension of the first section and the second section are of a size to accept fingers of a person.

11. A package as in claim 1 wherein the article is a soap bar.

12. A package as in claim 4 wherein the article is a soap bar.

13. A package as in claim 1 wherein the first section and the second section are comprised of a thermoplastic.

14. A thermoformed package for an article comprising a body portion having a first section and a second section, a peripheral edge on the first section and the second section and substantially surrounding the body portion, an extension of the peripheral edge of the first section and the second section on at least one part thereof, the extension of the peripheral edge of the first section and the second section having an aperture therein.

15. A thermoformed package as in claim 14 wherein the aperture in the extension of the peripheral edge of the first section and the aperture in the extension of the peripheral edge of the second section are in alignment.

16. A thermoformed package as in claim 15 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are separate.

17. A package as in claim 15 wherein the aperture in the extension of the first section and the second section are of a size to accept fingers of a person.
18. A package as in claim 16 wherein the extension of the peripheral edge of the first section and the extension of the peripheral edge of the second section are splayed in opposite directions.
20. A package as in claim 15 wherein the article is a soap bar.

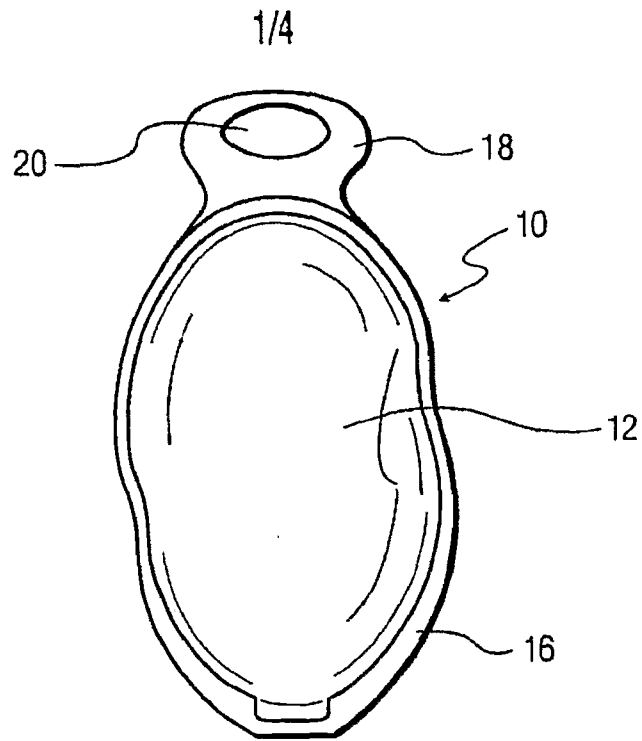


FIG. 1

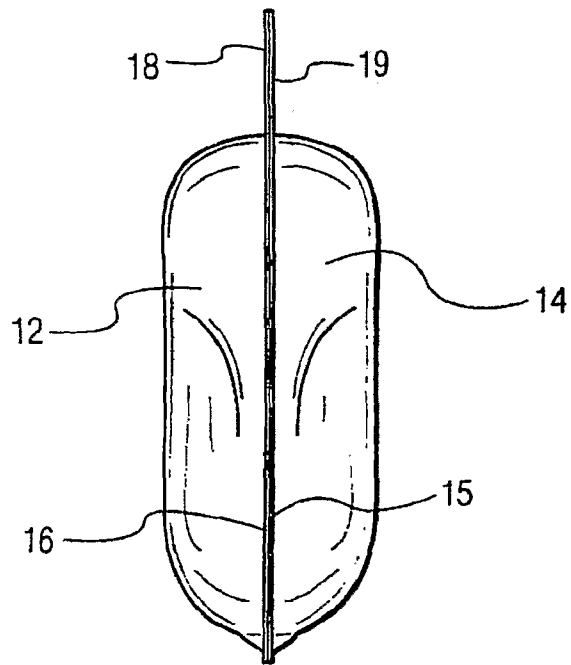


FIG. 2A

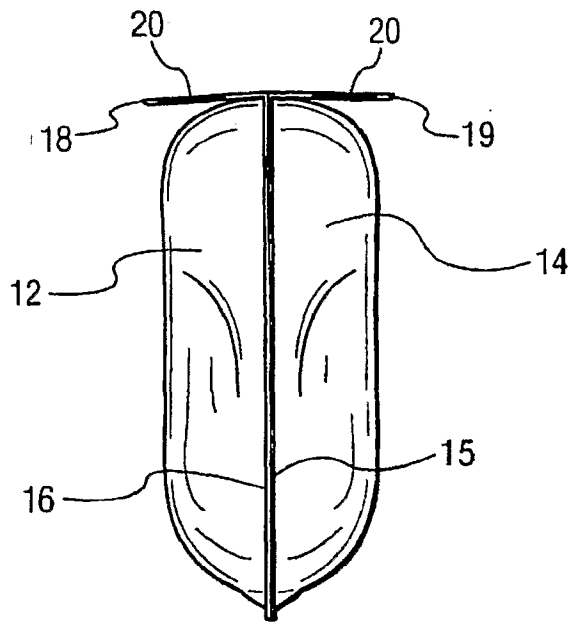


FIG. 2B

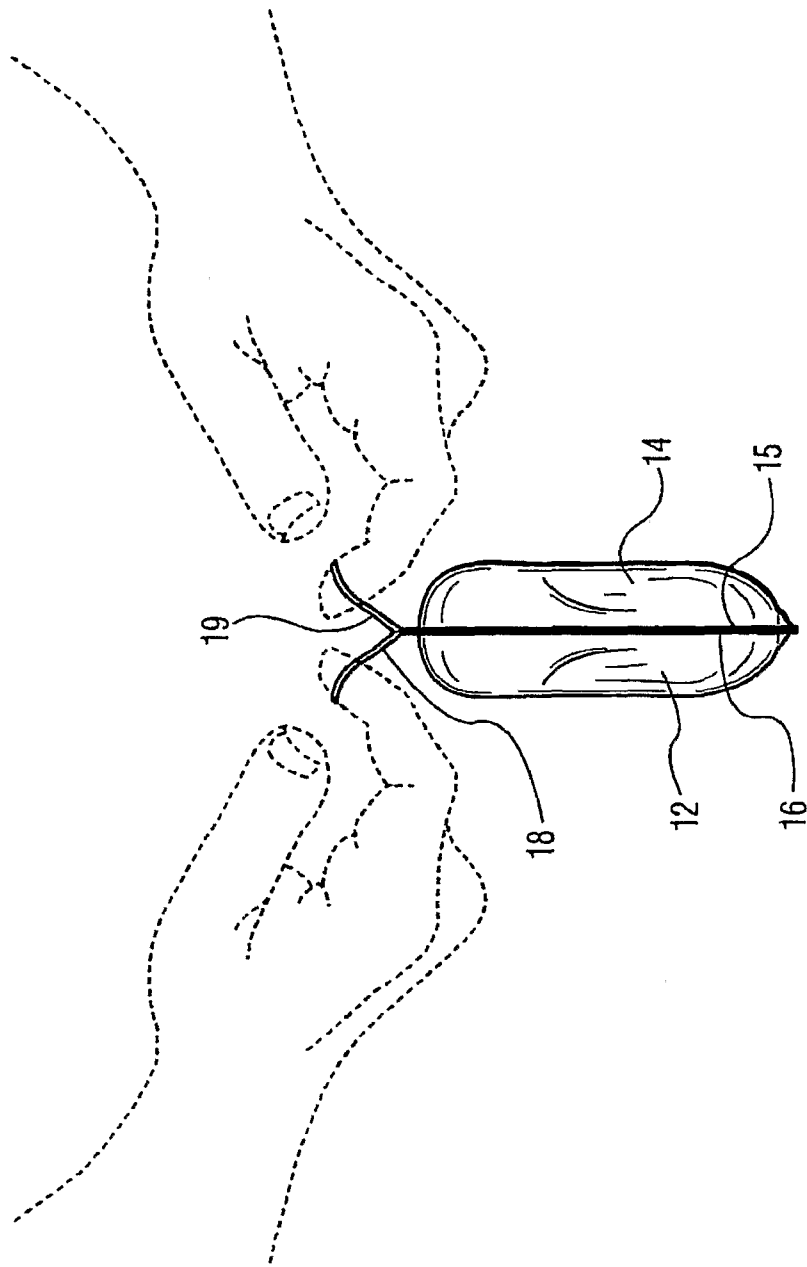


FIG. 3

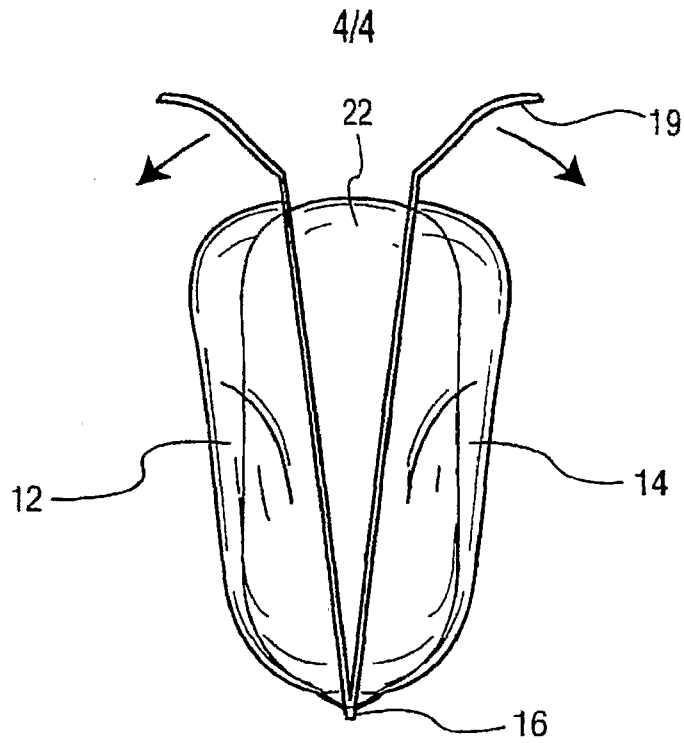


FIG. 4

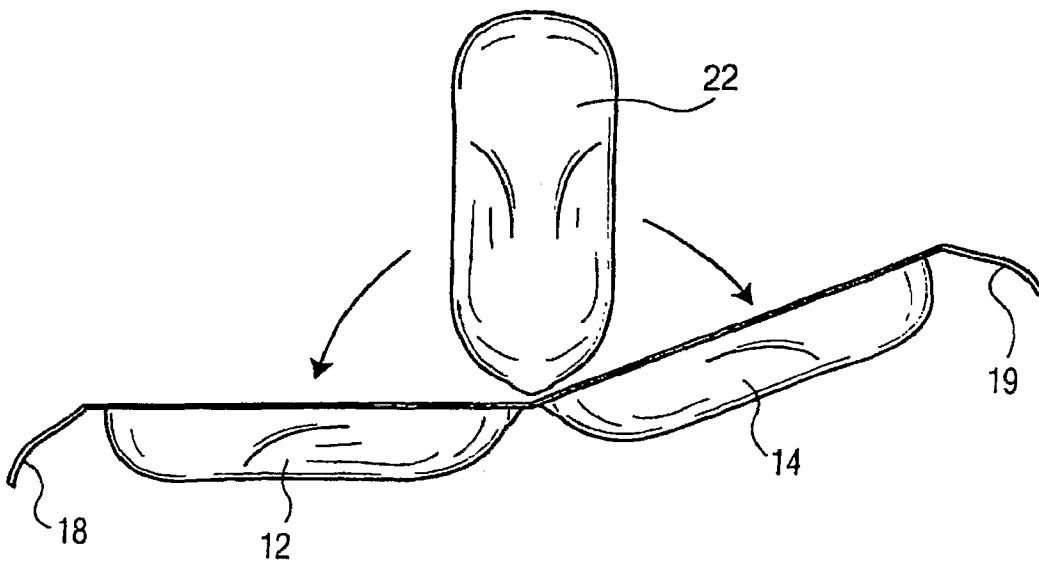


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/060528A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D75/32 B65D75/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 972 719 A (KRAFT JACOBS SUCHARD R & D INC [US]) 19 January 2000 (2000-01-19)	1-3, 5, 7-17, 19, 20
Y	paragraph [0019]; figure 1	4, 6, 18
X	EP 1 103 485 A1 (APARELLAJE ELECTRICO SA [ES]) 30 May 2001 (2001-05-30) paragraphs [0015] - [0019]; figures 1, 2	1, 2, 7-17, 20
Y	US 5 487 932 A (DUNSHEE WAYNE K [US]) 30 January 1996 (1996-01-30) column 3, lines 19-26; figure 2	4, 6, 18
A	US 4 859 514 A (FRIEDRICH STEVEN G [US] ET AL) 22 August 1989 (1989-08-22) column 5, line 57 - column 6, line 10; figure 1	4, 6, 18

 Further documents are listed in the continuation of Box C. See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2006/060528

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