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(54) **Child deterrent package**

(57) The present provides a child deterrent package comprising a container, and a lid assembly (1) having front and back edges (4, 5) and a left and right side (6, 7), and comprising at least three locking devices (8) wherein at least one of said locking devices (8) is located

on the front edge (4) and at least a second locking device (8) is located on either the left and/or right side (6, 7), wherein at least one locking device (8) is located within proximity of a corner intersection of the front or back edge (4, 5) with the left or right side.

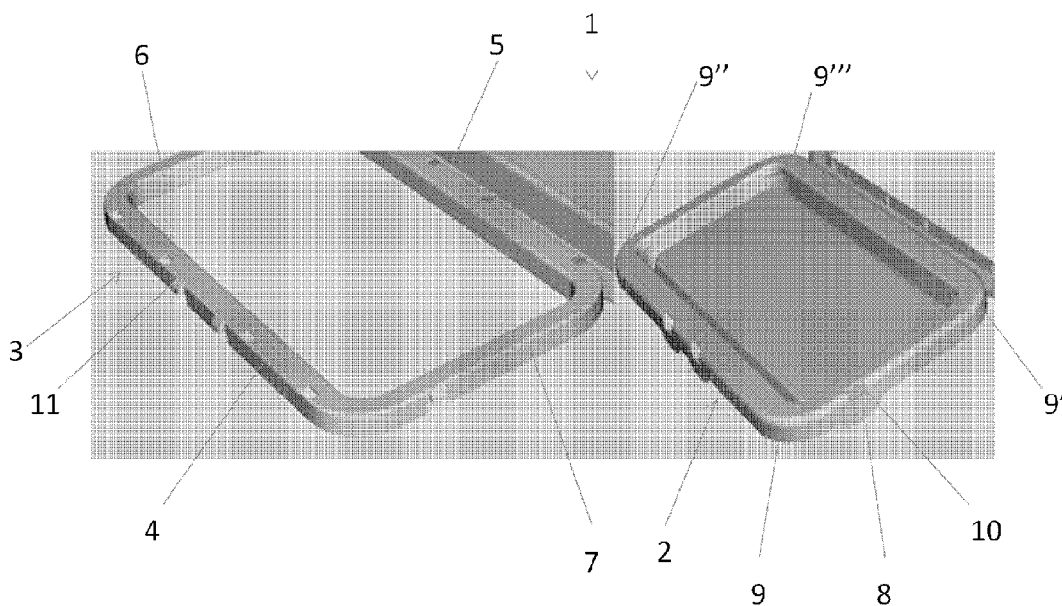


Fig 1

Fig 2

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a package with locking system designed to deter children from opening the package.

BACKGROUND TO THE INVENTION

[0002] House hold products are provided to the consumer in containers with an opening and, generally with a closure mechanism. Depending on the product form the container may be for example a bottle, box or tub. The present relates to packages with wide openings, in the forms of tubs and boxes, suitable for allowing entry of a hand to retrieve product inside. The containers are thus suitable for containing products such as unitary doses or powders for example.

[0003] Recently unitary dose products, such compressed powder tablets and water-soluble film pouches have become more popular as they offer consumers a convenient dosage size avoiding mis-dosing and mess. Such containers and closures preferably comprise a locking mechanism, to increase the complexity of opening the container so as to deter children from gaining access to the product within. Containers on the market today comprise locking systems on the front face of the container and closure. However it has been an object of the present study to identify further ways of securing the closure to the container.

[0004] Particularly, the Applicant has found, that if the materials used are able to flex, then a closure may be seen as being too easy to open, even by a child. The applicants have thus sought to redesign the package container and closure or lid assembly to improve child deterrence.

SUMMARY OF THE INVENTION

[0005] According to the present invention there is provided a child deterrent package comprising a container, and a lid assembly having front and back edges and a left and right side, and comprising at least three locking devices wherein at least one of said locking devices is located on the front edge and at least a second locking device is located on either the left and/or right side, wherein at least one locking device is located within proximity of a corner intersection of a front or back edge with a left or right sides.

SUMMARY OF THE FIGURES

[0006]

Figure 1 shows a perspective view of the frame of the lid assembly

Figure 2 shows a perspective view of the lid of the lid assembly

DETAILED DESCRIPTION OF THE INVENTION

[0007] The package of the present invention is designed to increase the complexity of actions necessary to open to container, so as to deter a child from opening said container. The container can be any suitable size or shape. Preferably the container comprises a flange at the container opening. More preferably the container comprises a downwardly curving flange. The container may be made of any suitable material. Preferably the container comprises polypropylene, high density and low density polyethylene, polyethylene terephthalate, polystyrene and mixtures thereof. More preferably the container comprises polystyrene. The method of manufacturing the container is not an essential feature of the present invention, and thus can be made by any convenient conventional method. Preferably the container is made by thermoforming. The container comprises an opening through which the user may withdraw product. Preferably the opening is sufficiently large so as to permit entry of the users hand. The shape of the opening is designed to cooperate with the lid assembly.

[0008] The lid assembly (1) comprises a lid closure feature designed to close the opening of the container. The lid assembly comprises front (4) and back (5) edges, and left (6) and right (7) side. The lid assembly is preferably square, or more preferably rectangular. When the lid assembly is rectangular, the front and back walls form the longer sides thereof. The lid assembly may be made using any suitable material. Preferably, the lid assembly comprises polypropylene, high density and low density polyethylene, polyethylene terephthalate and mixtures thereof. Most preferably the lid assembly comprises polypropylene. The lid assembly can be made using any suitable and conventional technique. The lid assembly is preferably made by injection molding.

[0009] Preferably the lid assembly comprises a lid (2) and a frame (3). The frame forms the perimeter of sides and edges and is designed to cooperate with the opening of the container. Thus the frame is preferably square or rectangular in shape. The frame is attachable to the container using any suitable technique. In one preferred embodiment, the container, at the opening, comprises a flange, preferably a downwardly curving flange. The frame (3) comprises an inverted 'U' shape perimeter, which cooperates closely with the opening of the container. The frame (3) preferably further comprises a friction attachment mechanism, preferably comprising a snap fitting or bead. The snap fitting or bead being designed to lock into position under the flange of the container, thereby keeping the frame in place on the container. Said friction attachment may be located at intermittent positions around the perimeter of the frame or alternatively it is present throughout the perimeter. Said friction attachment firmly locks the frame to the container

and is consequently difficult to remove. Preferably the lid (2) and frame (3) are hingedly attached along the back (5) edge of the lid assembly.

[0010] The lid (2) of the lid assembly (1) cooperates with the frame (3) and thus, preferably has similar shape. However the lid does not necessarily have to have the identical shape of the frame. Whether the lid has the identical shape to the frame or not, however, the lid assembly as a whole must cooperate sufficiently so as to close to the opening of the container.

[0011] The lid assembly comprises at least three locking devices (8). At least one locking device (8) is located on the front (4) and/or back (5) edge. More preferably two or more locking devices are located on the front (4) and/or back (5) edge. Where two or more locking devices are located on either the front and/or back edge, they may be located at any point along the edge, proximal or distal to one another. More preferably the locking devices are located proximate to one another.

[0012] At least one locking device (8) is also located on either the left (6) and/or right (7) side within proximity of the intersection of a front or back edge with a side of the lid assembly (9, 9', 9", 9'''). More preferably the present package comprising at least one locking device (8) on the left (6) and right (7) sides, both within proximity of the intersection of a front or back edge with a side of the lid assembly (9, 9', 9", 9'''). In a particularly preferred embodiment the lid assembly (1) comprises a frame (3) and lid (2) which are hingedly attached along the back (5) edge, the front (4) edge comprises at least one, preferably at least two locking devices (8) and the left (6) or right (7), preferably the left (6) and right (7) sides comprise at least one locking device (8) within proximity of the intersection (9, 9', 9", 9''') of a front or back edge with a side of the lid assembly.

[0013] The applicants have found that the material used to make suitable lids, can be somewhat flexible. The flexibility in the material of the lid assembly is useful to the manufacturer as it permits locking devices that require force as well as multiple actions to open. For example the user may have to pull and lift in order to open the container. This complexity of multiple actions required makes the container more difficult to open for a child, but still manageable for an adult, especially an adult with limited hand mobility or strength. Preferably the locking device on the side of lid or lid assembly is located within the first or last third of the length of the side. More preferably the locking device on the side of the lid or lid assembly is located within the first or last quarter of the length of the side. Where locking devices are present on both sides, they may both be within proximity of the intersection of the side and front edge or side and back edge, thus presenting a symmetrical arrangement of locking devices. Alternatively, the locking devices present on both sides, may be arranged asymmetrically, such that one is located with proximity to the intersection of the side and front edge and the other is located with proximity to the side and back edge.

[0014] The lock is preferably a device of at least two parts, at least one part of which is located on the lid assembly. In one embodiment, the locking device on the lid assembly engages with the container, more preferably the flange of the container. In an alternative and preferred embodiment, wherein the lid assembly comprises the lid and frame, the lid comprises a part of the locking device which cooperates with a corresponding area of the frame. The locking device may be selected from any known and suitable locking device available to the market. Preferably said locking device is selected from the group consisting of a hole (10) and hook (11) latch, friction latch, hinged latch and mixtures thereof. A hole (10) and hook (11) latch, consists of a hook (11), protruding outwardly, and optionally downwardly, and a corresponding hole (10) such that when fitted together the hook and hole can not be disconnected except through forcible flexing the material of the lid to release the hook. In this preferred embodiment, it is preferred that the hook is located on the frame (3) and the hole is located on the lid (2), however the reverse is also envisaged. A friction latch comprises a protrusion bump or bead which connects with the underside of a ridge protrusion such that when the lock is in effect the bead is prevented from upward movement. The lid is opened by forcible flexing of the lid to overcome the friction. The hinged latch works in a similar fashion to either previous locking devices, except that one part is hinged versus the other, and to open the lock one part is opened about the hinge.

[0015] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm."

Claims

1. A child deterrent package comprising a container, and a lid assembly having front and back edges and a left and right side, and comprising at least three locking devices wherein at least one of said locking devices is located on the front edge and at least a second locking device is located on either the left and/or right side, wherein at least one locking device is located within proximity of a corner intersection of a front or back edge with a left or right sides.
2. A package according to any preceding claim wherein the lid assembly comprises a lid and frame.
3. A package according to the preceding claim wherein the lid and frame are hingedly attached to one another.
4. A package according to any preceding claim wherein

the locking device comprises at least two cooperating parts, at least one part of which is located on the lid assembly.

5. A package according to any preceding claim wherein the locking device is selected from the group consisting of a hole and hook latch, friction latch, hinged latch and mixtures thereof. 5
6. A package according to any preceding claim wherein the locking device located within proximity of a corner intersection, is located within the first or last third of the length of the side. 10
7. A package according to any preceding claim wherein the locking device located within proximity of a corner intersection, is located within the first or last quarter of the length of the side. 15
8. A package according to any preceding claim wherein the lid assembly comprises at least one locking device on the left and right sides, both within proximity of the intersection of a front or back edge with a side of the lid assembly. 20
9. A package according to any preceding claim wherein the lid assembly comprises a frame and lid which are hingedly attached along the back edge, the front edge comprises at least two locking devices and the left or right sides comprise at least one locking device within proximity of the intersection of a front or back edge with a side of the lid assembly. 25 30
10. A package according to any preceding claim wherein the lid assembly comprises a frame and lid which are hingedly attached along the back edge, the front edge comprises at least two locking devices and the left and right sides comprise at least one locking device, both within proximity of the intersection of a front or back edge with a side of the lid assembly. 35 40

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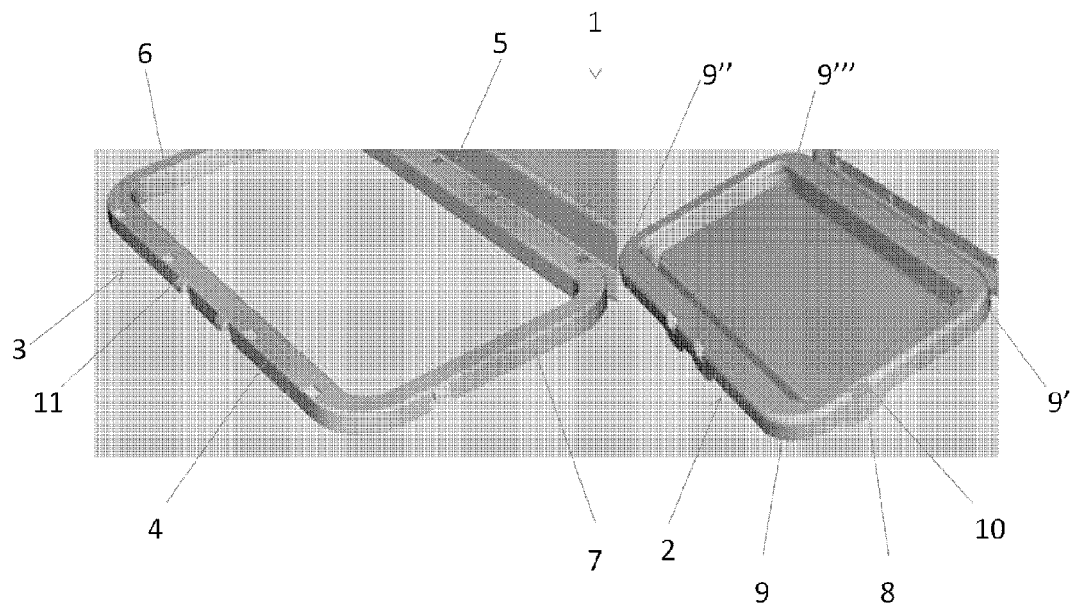


Fig 1

Fig 2



EUROPEAN SEARCH REPORT

Application Number
EP 12 19 5290

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 746 008 A (HEVERLY KAREN H [US] ET AL) 24 May 1988 (1988-05-24) * figures 1,2 *	1-10	INV. B65D43/16 B65D50/04
A	WO 2009/053693 A1 (MEADWESTVACO CORP [US]; SAMS STEPHEN [GB]) 30 April 2009 (2009-04-30) * figure 8A *	2,3,9,10	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 March 2013	Examiner Sundell, Olli
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 19 5290

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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06-03-2013

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82