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(54) **LEAK-TIGHT CONTAINER WITH A SAFETY CLOSURE**

(57) The present invention relates to a container comprising a base (1) and a lid (2), wherein there are locking tabs (3) on the base (1), whereas there are windows (4) made on the lid that allow access to the locking tabs (3), characterized in that the sheet used for forming the base (1) comprises a bottom (1.1), first lateral sides (1.2), second lateral sides (1.3), provided with extension flaps (1.4) and with locking tabs (1.5), wherein the first lateral side (1.2) and the second lateral side (1.3) are attached by means of lateral flaps (5) and (6) forming an uninterrupted continuous surface having a folding line (7) at the bisectrix of the angle formed by the lateral sides, obtaining a leak-tight container provided with safety closures that do not allow the accidental or unwanted opening.

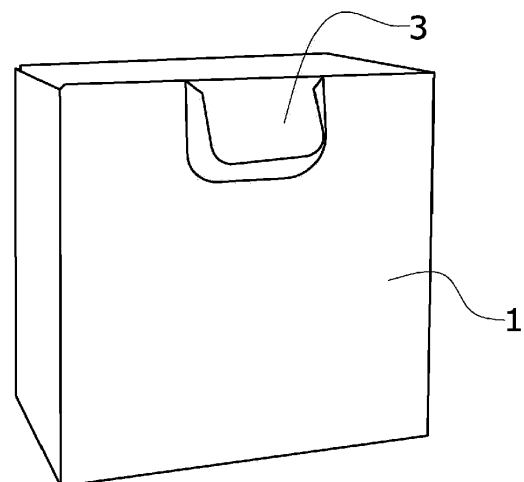
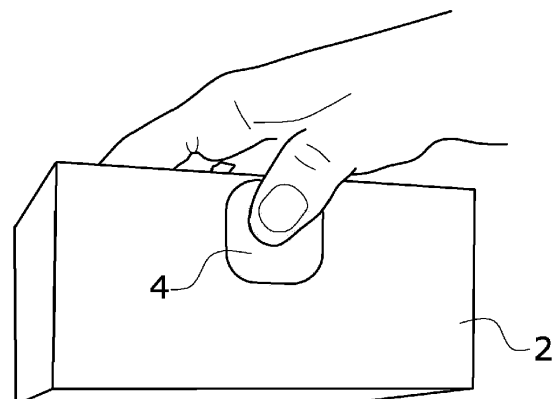


FIG. 1

EP 4 406 865 A1

Description

Technical field

[0001] As stated in the title of the invention, the object of the present invention relates to a leak-tight container made of corrugated cardboard with a safety closure, i.e., a container that provides liquid tightness essentially at its base and make it have a safety closure against unwanted or accidental opening.

[0002] The present invention is characterized by the special design, configuration and materials, especially of the base sheet used in forming the base of the container object of the invention.

[0003] Therefore, the present invention falls within the scope of containers providing liquid and moisture tightness.

Background art

[0004] Containers made of corrugated cardboard providing safety closures against possible accidental or unwanted opening by certain people, such as children, are well known in the prior art, being of particular interest in the case of small children and the products are toxic, such as detergents or the like.

[0005] Said safety closures are based on the principles of windows for actuating the retention means, such that when they are pressed simultaneously, they release said retention means and allow the container to be opened.

[0006] An example of this type of closures is described in patent EP397577, which describes a box with a lid provided with safety closure means that do not allow the opening without first pressing a tab accessible through a window. In general, there are usually at least two windows arranged such that they must be pressed by different hands, which requires certain dexterity and motor skills, features that are yet to be developed in young children.

[0007] Moreover, there are impermeable boxes made of corrugated cardboard that allow avoiding liquids and moisture from damaging the sheet from which the container is made. In some cases, impermeability is achieved by means of inner plastic sheets or plastic coating; however, the shaping of the box requires the gluing or adhesion of independent flaps, so at the joints there are possible points where moisture or liquids can penetrate into the interior.

[0008] However, boxes having an improved leak-tightness compared to those known in the prior art and, furthermore, having a safety closure that prevents accidental or unwanted access are unknown in the prior art.

[0009] Therefore, the object of the present invention is to develop a leak-tight container provided with a safety closure such as the one described below and the essential features of which are described in claim 1.

Summary of the invention

[0010] The essential features of the object of the present invention are described in the independent claim and the different embodiments are described in the dependent claims.

[0011] The object of the present invention relates to a leak-tight container with a safety closure comprising a base and a lid, where the base and the lid are formed from separate punched and cut sheets, and where the sheet used in shaping the base is an impermeable sheet.

[0012] In order to improve the leak-tightness of the base of the container, the sheet that acts to form said base has a rectangular bottom in which first lateral sides emerge from two facing sides, whereas second lateral sides emerge from the other two facing sides of the bottom, the contiguous lateral sides being attached by respective lateral flaps emerging from each of them, wherein said emerging lateral flaps form a continuous surface having a folding line at the bisectrix of the angle formed by contiguous lateral sides, such that by arranging said lateral sides in the vertical position the lateral flaps are superimposed without any cutting point or area, which results in an improved leak-tightness of the base.

[0013] Additionally, the container has a safety closure that prevents the accidental or unwanted opening; to that end, on two of the facing lateral sides there is a perforation on the free edge defining a folding tab, whereas extension flaps emerge from said respective free edge, where the folding tabs are attached by means of a folding line.

[0014] Moreover, the sheet that acts to form the safety closure comprises an upper rectangular part in which first lateral sides emerge from two of the opposite sides thereof, whereas second lateral sides emerge from the other two opposite sides, with one of the two pairs of facing lateral sides having windows or openings, as well as lateral extensions and front extensions, wherein the free edge of these front extensions acts as a stop on the free edge of the tabs, impeding their opening.

[0015] As a result of the described features, a container that is leak-tight, at least at its base, provided with safety closures that do not allow the accidental or unwanted opening, particularly by small children, is also achieved.

[0016] Unless indicated otherwise, all the technical and scientific elements used in the present specification have the meaning usually understood by a person skilled in the art to which this invention belongs. Methods and materials similar or equivalent to those described in the specification can be used in putting the present invention into practice.

[0017] Throughout the description and claims, the word "comprises" and variants thereof do not intend to exclude other technical features, additions, components or steps. For those skilled in the art, other objects, advantages and features of the invention will be inferred in part from the description and in part from the practice of the invention.

Brief description of drawings

[0018] To complement the description that is being made and for the purpose of helping to better understand the features of the invention, according to a preferred practical embodiment thereof, a set of drawings is attached as an integral part of said description, in which the following is depicted in an illustrative and nonlimiting manner.

Figure 1 shows a perspective view of the container object of the invention, where the process of opening the container can be seen.

Figure 2 shows the sheet used for forming the base.

Figure 3 shows the sheet that acts to form the lid.

Description of embodiments

[0019] A preferred embodiment of the proposed invention is described below in view of the figures.

[0020] It can be seen in Figure 1 that the container object of the invention comprises a base (1) and a lid (2), wherein there are locking tabs (3) on the base (1) emerging from the upper free edge and arranged in such a way that they diverge towards the lower part of the container, whereas there are windows (4) made on the lid that allow access to the locking tabs (3).

[0021] Figure 2 shows the sheet used for forming the base (1) which, as can be seen, comprises a rectangular bottom (1.1) in which first lateral sides (1.2) emerge from two of its facing sides, whereas second lateral sides (1.3) emerge from the other two facing sides, with these second lateral sides (1.3) being provided with extension flaps (1.4) and with locking tabs (1.5) which are attached by means of a folding line (1.6) with the extension flaps.

[0022] Moreover, in the sheet that acts to form the base, the contiguous lateral sides, i.e., the second lateral sides (1.3) and the first lateral sides (1.2), are attached by means of lateral flaps (5) and (6) forming an uninterrupted continuous surface having a folding line (7) at the bisectrix of the angle formed by the first lateral sides (1.2) and the second lateral sides (1.3), such that by arranging the first and second lateral sides (1.2) and (1.3) vertically, said lateral flaps (5) and (6) are superimposed without leaving any connection whatsoever with the exterior.

[0023] The sheet that acts to form the base (1) is an impermeable sheet, a feature that is obtained either by means of an inner plastic sheet, or else it can be impermeable in addition to containing a plastic sheet by applying multiple moisture and liquid barrier treatments, and in both cases the penetration of liquids and moisture is avoided.

[0024] Figure 3 shows the sheet that acts to form the lid (2) and as can be seen, comprises a rectangular upper area or part (2.1) in which first lateral sides (2.2) emerge from two of its facing sides, whereas second lateral sides emerge from the other two facing sides (2.3) having lateral extensions (2.3.2) and a front extension (2.3.1), said

lateral sides (2.3) having windows (2.4).

[0025] The windows (2.4) are in correspondence with the locking tabs (1.5). The front extensions (2.3.1) have a free edge (2.3.1.1) that acts as a stop of the final edge of the locking tabs (1.5) when the lid is closed on the base (1), not being released until both of the locking tabs (1.5) are pressed simultaneously.

[0026] Having sufficiently described the nature of the present invention, as well as the manner of putting it into practice, it is hereby stated that, within its essential nature, it can be carried out into practice in other embodiments which differ in detail from the one indicated by way of example, and to which the protection claimed will also apply, provided that it does not alter, change or modify the fundamental principle thereof.

Claims

1. A leak-tight container with a safety closure made of corrugated cardboard comprising a base (1) and a lid (2), wherein there are locking tabs (3) on the base (1) emerging from the upper free edge and arranged in such a way that they diverge towards the lower part of the container, whereas there are windows (4) made on the lid that allow access to the locking tabs (3), **characterized in that** the sheet used for forming the base (1) comprises a rectangular bottom (1.1) in which first lateral sides (1.2) emerge from two of its facing sides, whereas second lateral sides (1.3) emerge from the other two facing sides, with these second lateral sides (1.3) being provided with extension flaps (1.4) and with locking tabs (1.5) which are attached by means of a folding line (1.6) with the extension flaps, wherein the second lateral sides (1.3) and the first lateral sides (1.2) are attached by means of lateral flaps (5) and (6) forming an uninterrupted continuous surface having a folding line (7) at the bisectrix of the angle formed by the first lateral sides (1.2) and the second lateral sides (1.3), such that by arranging the first and second lateral sides (1.2) and (1.3) vertically, said lateral flaps (5) and (6) are superimposed without leaving any connection whatsoever with the exterior, and the sheet for forming the base (1) is an impermeable sheet.
2. The leak-tight container with a safety closure according to claim 1, **characterized in that** the sheet that acts to form the lid (2) comprises a rectangular upper area or part (2.1) in which first lateral sides (2.2) emerge from two of its facing sides, whereas second lateral sides emerge from the other two facing sides (2.3) having lateral extensions (2.3.2) and a front extension (2.3.1), said lateral sides (2.3) having windows (2.4), wherein the windows (2.4) are in correspondence with the locking tabs (1.5), and the front extensions (2.3.1) have a free edge (2.3.1.1) that acts as a stop of the final edge of the locking tabs

(1.5) when the lid is closed on the base (1).

3. The leak-tight container with a safety closure according to claim 1, **characterized in that** the impermeable sheet of the base contains a plastic sheet. 5
4. The leak-tight container with a safety closure according to claim 1, **characterized in that** the sheet of the base is impermeable has it has several moisture and liquid barrier treatments. 10

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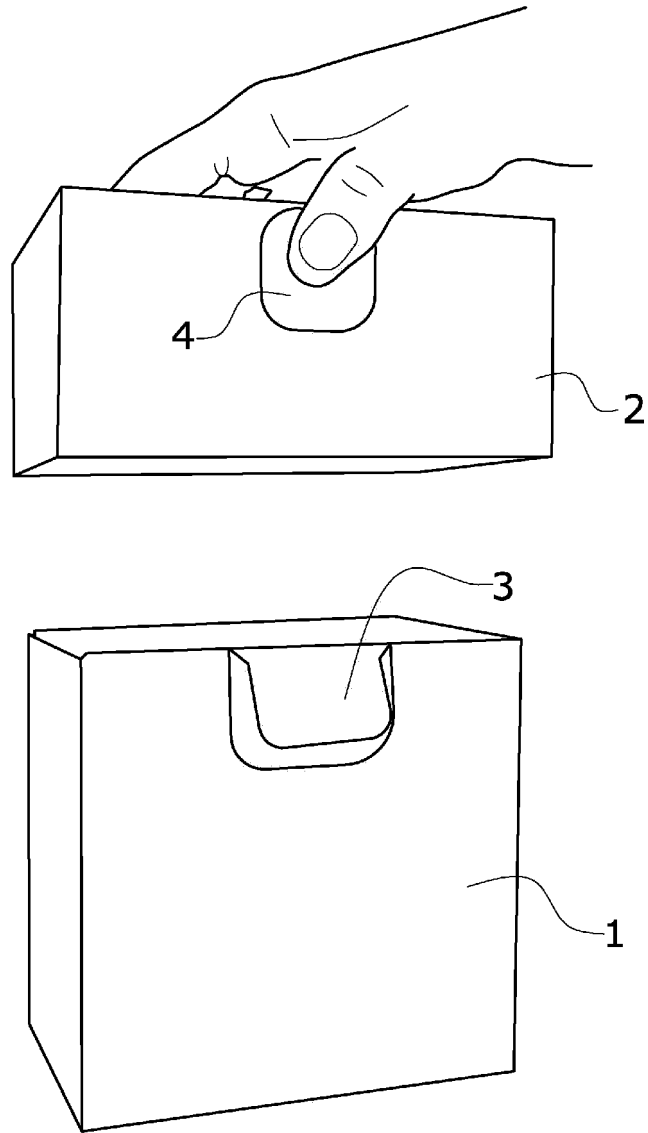


FIG.1

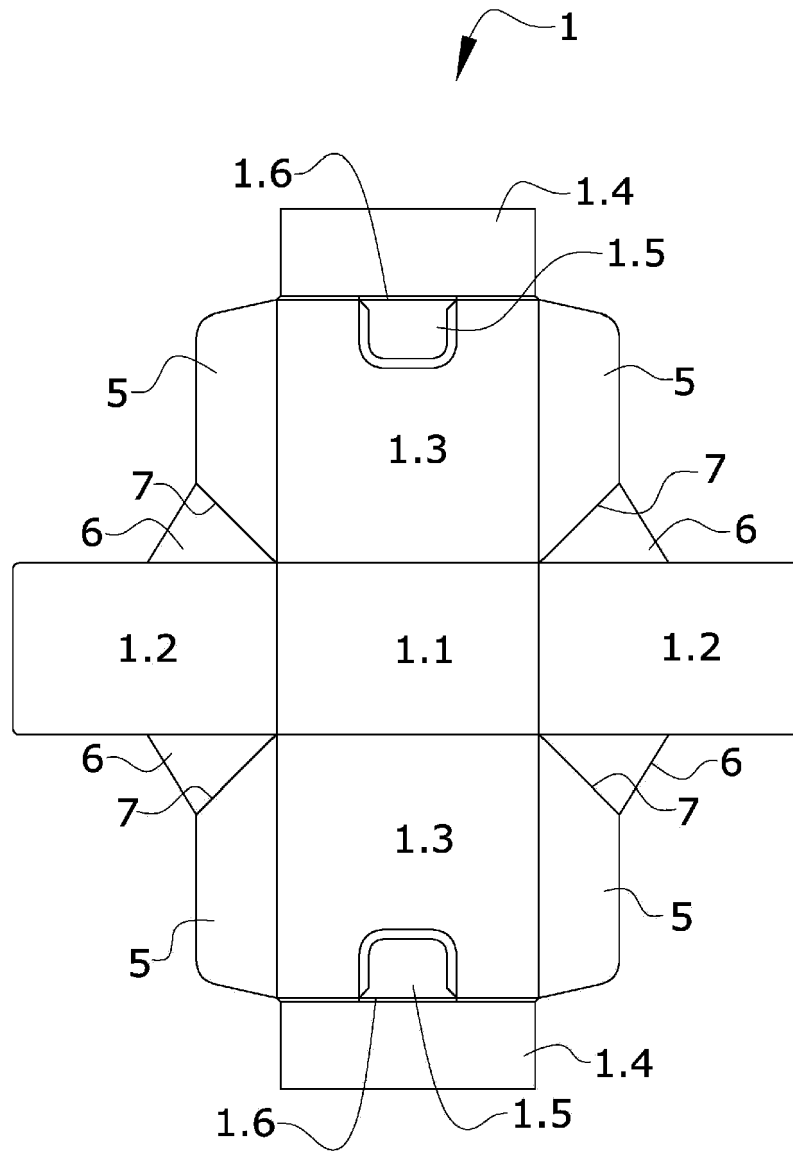


FIG.2

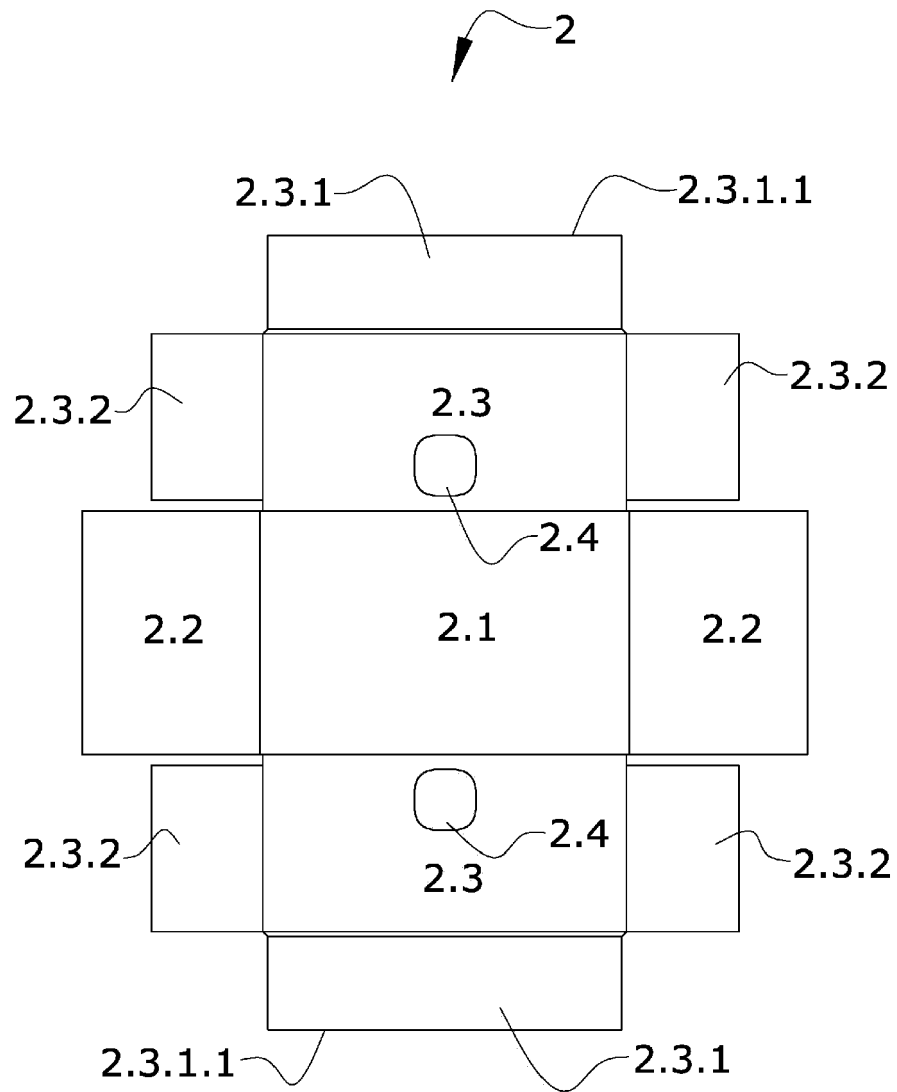


FIG.3



EUROPEAN SEARCH REPORT

Application Number

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EPO FORM 1503 03:82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	IT 2019 0001 5360 A1 (IGB SRL [IT]) 2 March 2021 (2021-03-02) * page 19, line 25 - page 20, line 10 * * page 21, line 5 - page 35, line 12 * * machine translation par. 178, 179, 193-271; figures 1-5 *	1-4	INV. B65D5/24 B65D5/56 B65D5/68
Y,D	EP 0 397 577 A1 (BULL SA [FR]) 14 November 1990 (1990-11-14) * abstract; figures 1-3 *	1-4	
Y	EP 1 783 058 A1 (STABERNACK GMBH GUSTAV [DE]) 9 May 2007 (2007-05-09) * abstract; figures 1-4 *	1-4	
A	US 2022/281633 A1 (COSTANZO JR DONN J [US]) 8 September 2022 (2022-09-08) * paragraphs [0013] - [0018], [0066]; figures 1-2 *	1	
A	US 2016/137339 A1 (MOLINA-MUNTAÑOLA PABLO [ES]) 19 May 2016 (2016-05-19) * paragraphs [0013] - [0014]; figures 1-6 *	1	TECHNICAL FIELDS SEARCHED (IPC) B65D
Y	EP 3 778 411 A1 (PROCTER & GAMBLE [US]) 17 February 2021 (2021-02-17) * paragraphs [0008], [0037], [0041], [0044], [0045], [0081]; figures 1-3 *	1-4	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 June 2024	Examiner Leijten, René
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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EP 23 22 0456

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
IT 201900015360 A1	02-03-2021	-----	-----
EP 0397577 A1	14-11-1990	CA 2016548 A1	12-11-1990
		DE 69000890 T2	27-05-1993
		EP 0397577 A1	14-11-1990
		ES 2040073 T3	01-10-1993
		FR 2655951 A2	21-06-1991
		JP H03639 A	07-01-1991
		JP H0662162 B2	17-08-1994
		US 5040722 A	20-08-1991
		-----	-----
EP 1783058 A1	09-05-2007	AT E465095 T1	15-05-2010
		DE 202005017363 U1	15-03-2007
		EP 1783058 A1	09-05-2007
		-----	-----
US 2022281633 A1	08-09-2022	US 2022281633 A1	08-09-2022
		US 2023356877 A1	09-11-2023
		-----	-----
US 2016137339 A1	19-05-2016	NONE	
		-----	-----
EP 3778411 A1	17-02-2021	CA 3145511 A1	18-02-2021
		EP 3778411 A1	17-02-2021
		JP 2022540895 A	20-09-2022
		WO 2021030837 A1	18-02-2021
		-----	-----

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 397577 A [0006]