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(54) **A PACKAGE**

(57) A package, which comprises an outer casing (2) and an inner casing (3) accommodated slidably within the outer casing. The package is formed of a package blank (1) which comprises parallel first and second side edges (4, 5), defining a length direction of the blank, and parallel first and second face sides (6, 7) perpendicular to the side edges, defining a width direction of the blank. The blank (1) further comprises a flap (8), which has a first end (9) and a second end (10) in the width direction of the blank, a fold area (11), which is foldable between an end of the flap (8) and the side edge of the blank, and a first and a second opening flap (12, 13), said flaps are arranged in a same line with the first and the second end of the flap (8) in the length direction of the blank.

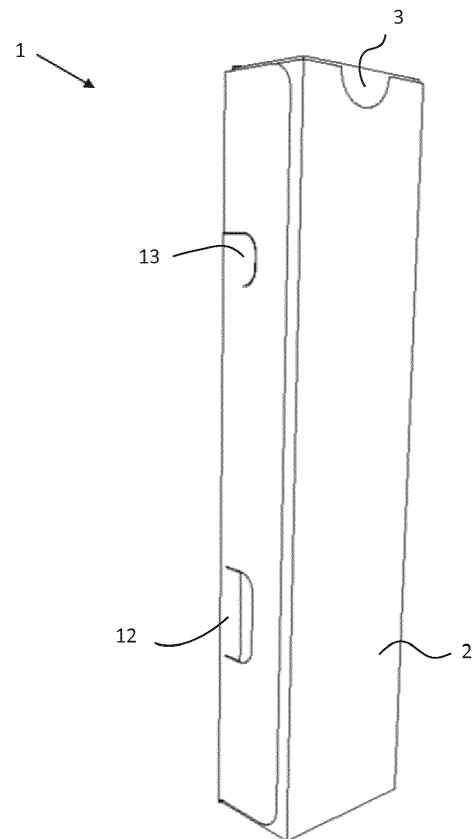


Fig. 2

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Description

[0001] The present invention relates to a package according to the preambles of the independent claims presented below.

[0002] When the package contains items that should not be easily accessible for children, for instance medicine, it is known to use packages with a child resistant locking mechanism. However, there is a need for a package made of a carton board, which also comprise a child resistant lock. The requirements for the carton package are that it is difficult for a child to open and at the same time has a simple construction. Also package must be re-closable for several times.

[0003] Thus, the object of the present invention is to provide a package that is considered to meet the requirements for a package to be child resistant.

[0004] The object of the present invention is to obtain an entirely novel solution for a child resistant package, which has a simple construction and which is made from carton board.

[0005] In order to achieve among others the objects presented above, the invention is characterized by what is presented in the characterizing parts of the enclosed independent claims.

[0006] Some preferred embodiments of the invention will be described in the other claims.

[0007] A typical package of the present invention comprises an outer casing and an inner casing accommodated slidably within the outer casing and capable of motion between a closed position and an open position.

[0008] A typical sheet-like package blank, from which the package of the present invention is formed, comprises

- parallel first and second side edges, defining a length direction of the blank,
- parallel first and second face sides perpendicular to the side edges, defining a width direction of the blank,
- a flab, which has a first end and a second end in the width direction of the blank,
- a fold area, which is foldable between an end of the flab and the side edge of the blank, and
- a first and a second opening flap, said flaps are arranged in a same line with the first and the second end of the flab in the length direction of the blank.

[0009] A typical package of the present invention also comprises a locking mechanism for preventing immediate opening of the package from the closed position to the open position, said locking mechanism comprises

- a locking part arranged inside the outer casing,
- a flap of the inner casing having a first end and a second end, an end of the flap is arranged against the locking part of the outer casing in the closed position, and
- a first and a second opening flap arranged in the

outer casing, the first opening flap of the outer casing and the first end of the flap of the inner casing are arranged at least partly overlapping when the package is in closed position, and the second opening flap of the outer casing and the second end of the flap of the inner casing are arranged at least partly overlapping when the package is in closed position.

[0010] The present invention is based on a package blank, which is made from one sheet and a locking mechanism constructed to an outer casing and an inner casing of the package. The locking mechanism of the package prevents immediate opening of the package from the closed position to the open position. The locking mechanism comprises a locking part of the outer casing, a flap of the inner casing, and a first and a second opening flap of the outer casing. All parts of the locking mechanism are constructed to the package blank so that the package can be formed from one sheet.

[0011] A locking part of the outer casing of the package is formed by folding the fold area of the blank inside to the outer casing of the package, so that the formed fold is arranged between the second opening flap and the outer edge of the package in a folded state. The locking part is in the end of the outer casing which is open, and in which end the inner casing is pushed within the outer casing. In a preferred embodiment of the invention the locking part of the outer casing comprises a fold, which is folded twice to make it thicker.

[0012] A flap of the inner casing comprises a first long side and a second long side in a width direction of the blank, said first long side is formed by creasing and said second long side is formed by cutting so that it comprises contacting points. Thus, the flap of the inner casing has a hinged structure in a folded package, wherein the flap is in connection with the inner casing by its side which is formed by creasing. When a package blank is folded to the form of the package, an inner casing and an outer casing around the inner casing of the package are formed. The inner casing is in connection with the outer casing until the package is opened first time. The inner and outer casings are in connection with each other via the contacting points formed on one long side edge of the flap of the inner casing. The flap of the inner casing splits the package into two different casings. Thus, the flap is typically arranged in the central part of the blank in the length direction of the blank, and thus the package of the invention is possible to make from one sheet.

[0013] A flap of the inner casing having a first end and a second end in the width direction of the package blank, an end of the flap is arranged against the locking part of the outer casing in the closed position of the package. Thus, the length of the flap of the inner casing is smaller than the length of the face side of the package blank in order that the locking part of the outer casing has a required space between the end of the flap and the outer edge of the casing.

[0014] The first opening flap of the outer casing and a

first end of the flap of the inner casing are arranged at least partly overlapping when the package is in closed position, and the second opening flap of the outer casing and a second end of the flap of the inner casing are arranged at least partly overlapping when the package is in closed position. Preferably, the first opening flap of the outer casing and a first end of the flap of the inner casing are arranged in a same line in the length direction of the blank, and respectively the second opening flap of the outer casing and a second end of the flap of the inner casing are arranged in a same line in the length direction of the blank. This arrangement ensures that the locking mechanism of the package function as a child resistant package, and also the package can be re-closable several times.

[0015] A first and a second opening flap of the outer casing have a hinged structure. At least one side of the first and the second opening flap comprises contacting points, the first and the second opening flap are connected to package with connecting points before the package is opened first time. Thus, it is possible to find out whether or not a package has been previously opened. This only works once but for certain applications it is useful for security reasons to have this function.

[0016] The function of the first opening flap is to open contacting points between the inner casing and outer casing, i.e. contacting points in the long side of the flap of the inner casing, when the package is opened first time. Since the first opening flap is in a position corresponding to the position of the first end of the flap of the inner casing when the package is in closed position, the pushing of the first opening flap inwards is also pushed the flap of the inner casing inwards, when the contacting points are broken and the inner casing is detached from the outer casing.

[0017] The function of the second opening flap is to open a locking mechanism of the package. When the second opening flap is pushed inwards, the second end of the flap of the inner casing is pushed against the surface of the inner casing and so the inner casing can slide by the locking part formed on the inner surface of the outer casing. If the second opening flap is not pushed inwards, the end of the flap of the inner casing touches the locking part of the outer casing, and the package cannot be opened.

[0018] A locking mechanism of the present package will last at least 10 openings due to strong material and the shape of the flap of the inner casing and the fold of the outer casing.

[0019] A package blank comprises required creasing lines in the width direction of the blank in order that the package can be formed by folding. The creasing line is typically extended from a first side edge to a second side edge of the blank. In the present application the crease/creasing line refers to a depression or a corresponding structure formed to the material of the package blank, which makes possible to fold or to bend the material without that the material is damaged. The crease

does not damage the surface layer of the material, or does not form any holes or slits to the material.

[0020] A first and a second side edge of the package blank comprise flaps or appendages in order that the ends of the package can be formed. A flap or an appendage is typically formed between two adjacent creases.

[0021] Typically, the blank of the invention is made from carton board with a weight between 200 g/m² and 600 g/m². In an embodiment of the invention, the carton board is covered at least on one side with polymer having a thickness between 10 µm and 150 µm, more preferably between 25 µm and 75 µm. In a preferred embodiment the carton board is covered on both sides.

[0022] The invention will be described in more detail with reference to appended drawings, in which

Fig. 1 shows a package blank according to one embodiment in an unfolded state, and

Fig. 2 shows a package according to one embodiment in a folded state.

[0023] Figure 1 shows a package 1 according to one embodiment of the invention in an unfolded state, i.e. a package blank. The package 1 comprises an outer casing 2 and an inner casing 3. The package blank has parallel first and second side edges 4, 5, defining a length direction of the blank, and parallel first and second face sides 6, 7 perpendicular to the side edges, defining a width direction of the blank. The side edges 4, 5 comprise necessary flaps or appendages in order that the ends of the package can be constructed by folding.

[0024] The inner casing further comprises a flap 8 having a first end 9 and a second end 10. The flap 8 comprises a first long side 14 and a second long side 15 in a width direction of the blank, said first long side 14 is formed by creasing and said second long side 15 is formed by cutting so that it comprises contacting points. The inner casing 3 and the outer casing 2 are connected to each other with these contacting points of the second long side 15 of the flap 8, when the package is in the unfolded state.

[0025] The outer casing 3 comprises a fold area 11, which is foldable between an end of the flap 8 of the inner casing and the side edge of the blank for forming a locking part inside the outer casing. The outer casing 3 further comprises a first opening flap 12 and a second opening flap 13. The first opening flap 12 is arranged in a same line with the first end 9 of the flap 8 in the length direction of the blank, and respectively the second opening flap 13 is arranged in a same line with the second end 10 of the flap 8 in the length direction of the blank.

[0026] The flap 8 is typically arranged in the central part of the blank in the width direction of the blank. The length and the width of the flap 8 can be varied but it is essential that there is a space between the both ends of the flap 8 and the side edges of the blank. The flap 8 splits the package blank into two casings.

[0027] Figure 2 shows a package 1 according to one embodiment of the invention in a folded state. The outer casing 2 has been folded around the inner casing 3. The opening flaps 12, 13 are in a side part of the package. One end of the outer casing 2 is open in order that the inner casing 3 can be push inside the outer casing, respectively the one end of the inner casing is open and one end is closed by folding the flaps of the blank.

[0028] The invention is not restricted to the examples of the above description, but it can be modified within the scope of the inventive idea presented in the claims.

Claims

1. A package, which comprises an outer casing (2) and an inner casing (3) accommodated slidably within the outer casing and capable of motion between a closed position and an open position, **characterized in that** the package further comprises a locking mechanism for preventing immediate opening of the package from the closed position to the open position, said locking mechanism comprises

- a locking part arranged inside the outer casing,
- a flap (8) of the inner casing having a first end and a second end, an end of the flap (8) is arranged against the locking part of the outer casing in the closed position, and
- a first and a second opening flap (12, 13) arranged in the outer casing, the first opening flap (12) of the outer casing and the first end of the flap (8) of the inner casing are arranged at least partly overlapping when the package is in closed position, and the second opening flap (13) of the outer casing and the second end of the flap (8) of the inner casing are arranged at least partly overlapping when the package is in closed position.

2. The package according to claim 1, **characterized in that** the package is formed from a blank, which comprises

- parallel first and second side edges (4, 5), defining a length direction of the blank,
- parallel first and second face sides (6, 7) perpendicular to the side edges, defining a width direction of the blank,
- the flab (8), which has a first end (9) and a second end (10) in the width direction of the blank,
- a fold area (11), which is foldable between an end of the flab (8) and the side edge of the blank, and
- the first and the second opening flap (12, 13), said flaps are arranged in a same line with the

first and the second end of the flab (8) in the length direction of the blank.

3. The package according to claim 1 or 2, **characterized in that** the locking part of the outer casing (2) is formed by folding the fold area (11) of the blank inside to the outer casing (2) of the package, so that the formed fold is between the second opening flap (13) and the outer edge of the package.
4. The package according to claim 3, **characterized in that** the locking part of the outer casing (2) comprises a fold, which is folded twice.
5. The package according to any of the preceding claims, **characterized in that** the first and the second opening flap (12, 13) have a hinged structure.
6. The package according to claim 5, **characterized in that** at least one side of the first and the second opening flap (12, 13) comprises contacting points.
7. The package according to any of the preceding claims, **characterized in that** the flap (8) comprises a first long side (14) and a second long side (15) in a width direction of the blank, said first long side (14) is formed by creasing and said second long side (15) is formed by cutting so that it comprises contacting points.
8. The package according to any of the preceding claims, **characterized in that** the inner casing (3) and the outer casing (2) is made from one sheet.
9. The package according to any of the preceding claims, **characterized in that** the package is made from carton board with a weight between 200 g/m² and 600 g/m².
10. The package according to claim 8, **characterized in that** the carton board is covered at least on one side with polymer having a thickness between 10 µm and 150 µm.

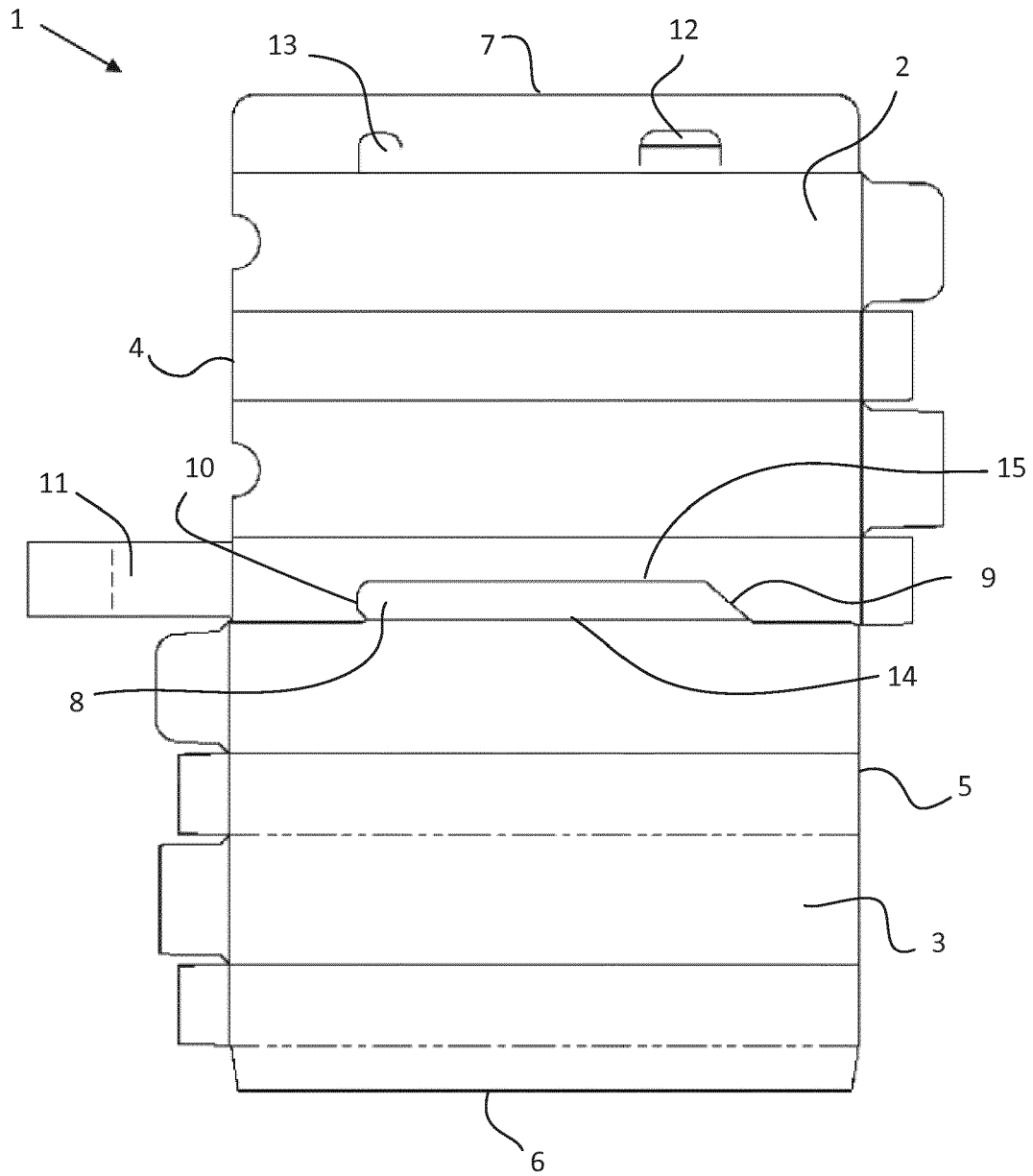


Fig. 1

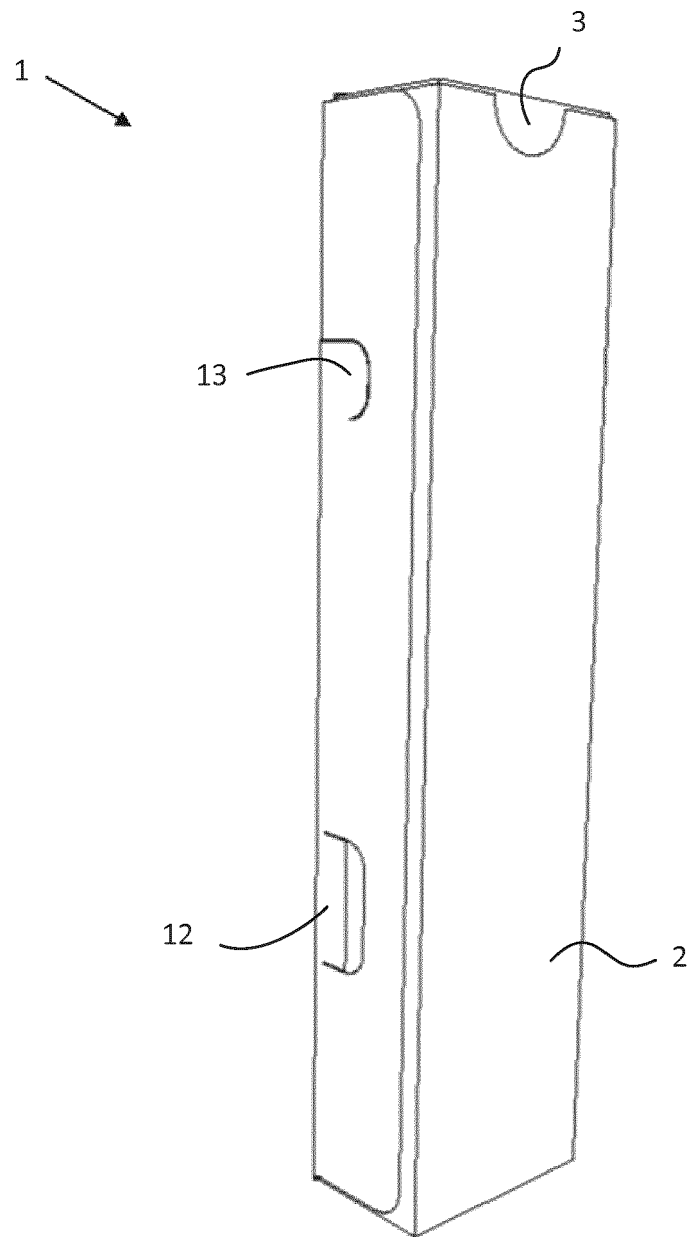


Fig. 2



EUROPEAN SEARCH REPORT

Application Number
EP 15 20 2901

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 097 328 A1 (AZIONARIA COSTRUZIONI ACMA SPA [IT]) 9 September 2009 (2009-09-09) * page 3, line 17 - page 6, line 9; figures 3,4 * -----	1-10	INV. B65D5/38
			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 March 2016	Examiner Vesterholm, Mika
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EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 15 20 2901

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