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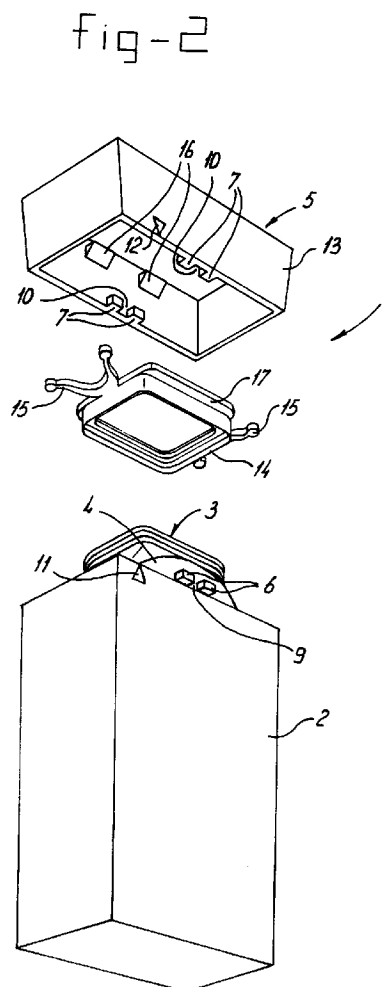
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(54) **Container assembly having a sliding lid.**

(57) Child-proof container assembly (1) consisting of a container (2) provided with a sliding lid (5). Projecting means (6,7) are present to prevent the lid being removed from the container. Said projecting means are fitted in such a manner that they are inoperative in only one specific position of the lid relative to the container, so that the lid can be taken off the container. Preferably, the lid consists of two parts, a sliding peripheral edge (13) and a stationary sealing part (14) sealing the opening of the container, which sealing part is accommodated in the peripheral edge and is resiliently displaceable.



The present invention relates to a container assembly comprising a container having an opening delimited by a neck, and to a lid to be placed on the container. Such a container assembly is generally known in the state of the art. Such containers are used, for example, for packaging products which should preferably not be accessible to children. Examples thereof are health-affecting chemicals, such as drugs. When designing child-proof closures for drugs packagings, consideration must also be given to the fact that geriatric patients should also be able to open such packagings.

In practice, this means that such closures for packagings have to be designed in such a way that, if a specific group of children has been shown how to open the container, they are unable to reproduce this action, whereas a less able patient can indeed perform it. To date, blister packs have been used in the state of the art to package drugs. Although these packagings are user-friendly, they form an increasingly serious problem with regard to the environment. The packagings cannot be re-used and consist of a laminate which is difficult to recycle and comprises a substrate, which may or may not be covered with aluminium, on which a plastic foil is applied and in between which cavities are delimited for receiving the drugs.

The object of the present invention is to provide a container lid assembly which can easily be refilled.

In the case of a container assembly described above, this object is in that the neck and the lid are provided with projecting means which cooperate when the lid is in the mounted position and enable the lid to slide in a direction at right angles to the centre line of the opening and designed such that the cooperation between them can be discontinued in a position located between the completely closed position of the lid and the completely extended position of the lid.

The invention is based on the insight that the lid should be fitted on the container so as to be slidable without, however, uncovering the opening as a result of the sliding action. This means that the lid has to be removed from the container to gain access to the opening. Only in a position which is determined by the mutual position of the projecting means can the lid be removed from the container. Such a position can be indicated by means of markings on both the container and the lid, which have to be facing one another, for example, in the position where the lid can be removed. Provision for a first safeguard is made by designing the lid and the container in such a manner that they form a continuous smooth unit when they are not displaced. After all, it is not possible to exert a great force on the lid relative to the container as a consequence of the continuous smooth form. Only when the lid is displaced beyond the periphery of the container is it possible to exert a force under it. The sec-

ond safeguard is formed by the projecting means described above. This means that the lid can be removed only if the lid is in the correct, outwardly displaced position relative to the container.

Although it is possible to fit the projecting means at any position, both on the container and on the lid, it is preferable according to the invention for the neck and the lid to be provided with projecting means on the side which is situated in the direction of displacement of the lid. Such protuberances can be applied very easily from a production-engineering viewpoint and do not affect the sealing of the opening, on the one hand, and they do not form an external element which can be taken hold of for the (unauthorized) opening of the lid, on the other hand.

According to a preferred embodiment of the invention, the projecting means are designed as longitudinal protuberances. The projecting means on the lid can reach under said longitudinal protuberances. Said projecting means on the lid comprise at least one lip. In this case, gaps are provided between the longitudinal protuberances just described, which gaps have a length corresponding to the length of the lip. This means that, if the lip is exactly under the gap, their reaching under the longitudinal protuberances can be eliminated by moving the lip perpendicularly upwards. Should it be desired that the lid be slidable in two directions and that it be possible for it to be removed in two positions, more than one lip may be present.

Preferably, the interacting projecting means are designed such that the lid can be snapped on the container in any position. In this case, the user need not be concerned about the correct position of the lid relative to the container.

Preferably, stop means are present in order to define the outermost position of the lid relative to the container.

The smooth transition between the lid and the container described above can be achieved in a simple manner if the container is provided with a widening under its neck.

In order to provide optimum sealing, the lid consists of a peripheral part provided with projecting means, and a sealing part which is designed in particular to engage with the opening of the neck. In this case, the construction is preferably such that the sealing part is mounted so as to be displaceable relative to the lid. Thus it is possible to construct the sealing part in such a way that it completely surrounds the opening of the neck. After all, displacing the peripheral part of the lid in order to bring it into a position where it can be taken off the container does not affect the position of the sealing part. In this case, it is possible to fit the sealing part in such a way that it is freely slidable relative to the lid. In such an embodiment, once the correct position of the lid relative to the container has been chosen, it is always possi-

ble to remove the lid from the container without having to perform the sliding action described above. This means that the child-proof closure is secure only until the first use and thereafter the lid always has to be displaced intentionally relative to the container. However, according to a preferred embodiment in which the lid consists of a peripheral part and a sealing part, spring means are present which always move the sealing part into a specific position relative to the peripheral part. As the sealing part is fitted in a fixed position relative to the opening of the container, this means that the peripheral part, which is provided with the projecting means, is always moved back into a locking position, that is to say the container is always closed in the child-proof position.

The invention will be explained below with reference to an embodiment illustrated in the drawing, in which:

Figure 1 shows a perspective view of a container assembly according to the invention in the closed position;

Figure 2 shows a perspective view of the various parts of the container assembly in the dismantled position;

Figures 3a and 3b show a cross section and a longitudinal section, respectively, of the container assembly in the assembled position;

Figure 4 shows a side view of the container assembly in the opening position; and

Figure 5 shows a view of the container assembly according to the invention during opening.

The container assembly according to the invention is indicated in its entirety by 1 in the figures. It consists of a container 2 provided with an opening 3 made in a neck 4 on which a lid 5 is to be mounted. Neck 4 is provided with protuberances 6, while the lid 5 consists of a sealing part 14 and a peripheral part 13. Lips 7 are provided on peripheral part 13, as well as guiding tongues 16. A recess 9 is disposed between protuberances 6 in neck 4. A similar recess 10 is disposed between lips 7 in peripheral part 13 of the lid. Sealing part 14 is provided with an edge 17 which, as is apparent from Figure 3, comes to lie between the top side of the peripheral part 13 and guide tongue 16. In this arrangement, guide tongue 6 is designed in such a manner that sealing part 14 can easily snap past it during production. In addition, sealing part 14 is provided with spring arms 15 which engage on the peripheral part 13 and which are designed such that the peripheral part 13 and sealing part 14 always try to be positioned concentrically relative to each other. Peripheral part 13 is provided with a marking 12, while container 2 is provided with a marking 11.

The container assembly described above operates as follows: the starting point is a container 2 which has for example been filled with tablets, and the assembled lid 5 is snapped onto the container. Lips 7 and protuberances 6 are designed in such a

manner that they can always be moved along one another in a downward direction. Because sealing part 14 has a free edge which is slightly flexible and engages on the boundary of opening 3 of neck 4, very accurate positioning of the lid 5 relative to the container is of only minor importance. Once the lid snaps into position on container 2, it is impossible to remove it from container 2 because lips 7 are situated under protuberances 6, as is apparent from Figure 3b. By displacing the lid 5 relative to the container 2 in the manner shown in Figure 4, markings 11 and 12 being opposite each other, the lips 7 come to lie in such a manner, relative to the left-hand protuberance 6 of the container, that the lip 7 which is furthest to the right can move through recess 9 and recess 10 permits displacement along the left-hand protuberance 6. In this position, the lid can be lifted up, which is facilitated by the fact that the lid has been moved beyond the periphery of the container, as is apparent from Figure 4, so that a force can be exerted from beneath. Such a force has to be exerted in order to release the snap connection between sealing part 14 and neck 9 near the opening, which snap connection provides sealing. During the sliding movement of the peripheral part 13, the sealing part 14 remains in situ. When the peripheral part 13 is released, it automatically springs back into the central position on the container, owing to the presence of the spring arms 15.

In this way, a double safeguard is ensured. In the closed position of the container and lid, as shown in Figure 1, it is difficult to exert a force on the lid which simply lifts it up. In addition, the projections impede such a displacement. During further handling of the container assembly, it is found that the lid is slidable. A child will then try to displace the lid further in order to uncover opening 3 in this manner. As peripheral part 13 abuts against neck 4, further displacement is not possible. This stop is so robust that the lid cannot easily break away from the container. When the lid 5 is displaced relative to the container, the lid can be moved upwards into only one position. This constitutes the second safeguard.

Although the invention has been described above with reference to a preferred embodiment, it should be understood that many modifications thereof are possible without departing from the scope of the present application. Thus it is possible to fit the projecting means in a different position from that indicated. They may be fitted on the outside, for example. Furthermore, it is possible to provide additional means which indicate to the user that the lid and the container are in a certain position relative to each other. All these modifications fall within the scope of the appended claims.

Claims

1. Container assembly (1) comprising a container (2) having an opening (3) delimited by a neck (4), and a lid (5) to be placed on the container, characterized in that the neck (4) and the lid (5) are provided with cooperating projecting means (6, 7) which cooperate when the lid is in the mounted position and enable the lid to slide in a direction at right angles to the centre line (8) of the opening, and are embodied such that the cooperation between these projecting means can be discontinued in a position located between the completely closed position of the lid and the completely extended position of the lid.

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2. Container assembly according to Claim 1, wherein the neck and the lid are provided with projecting means on the side which is situated in the direction of displacement of the lid.

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3. Container assembly according to Claim 2, wherein the projecting means on the neck comprise longitudinal protuberances (6), which projecting means on the lid can reach under said longitudinal protuberances and comprise at least one lip (7), wherein a gap (9) is provided between the longitudinal protuberances, whose length corresponds to the length of the at least one lip.

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4. Container assembly according to one of the preceding claims, wherein the interacting projecting means are designed such that the lid can be snapped on the container in any position.

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5. Container assembly according to one of the preceding claims, wherein stop means are present in order to define the outermost position of the lid relative to the container.

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6. Container assembly according to one of the preceding claims, wherein the container is provided with a widening under its neck, which in the fitted and completely closed position of the lid seals the peripheral edge of the lid in essentially the same plane.

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7. Container assembly according to one of the preceding claims, wherein the lid consists of a peripheral part provided with projecting means, and a sealing part (14) to engage with the opening of the neck.

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8. Container assembly according to Claim 7, wherein the form of the sealing part essentially corresponds to the neck opening (3) to be sealed and the sealing part is displaceable relative to the peripheral part in the direction of displacement.

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9. Container assembly according to Claim 7 or 8, wherein spring means (15) are present in order to move the sealing part into a central position relative to the peripheral part of the lid.

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10. Container assembly according to one of the preceding claims, wherein markings (11, 12) are present on the lid and the container for positioning the lid relative to the container.

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fig-1

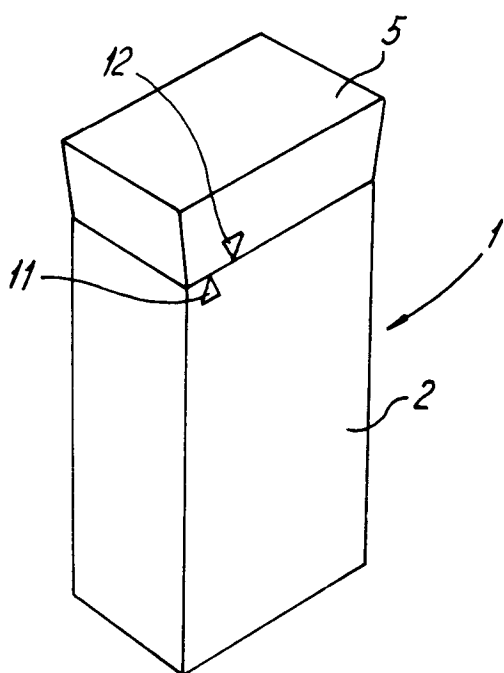


fig-4

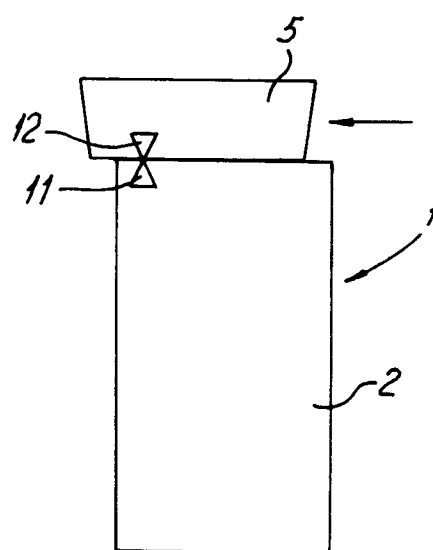


fig-5

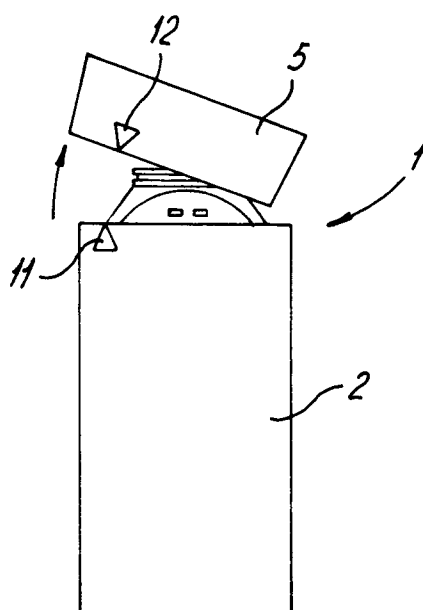


fig-2

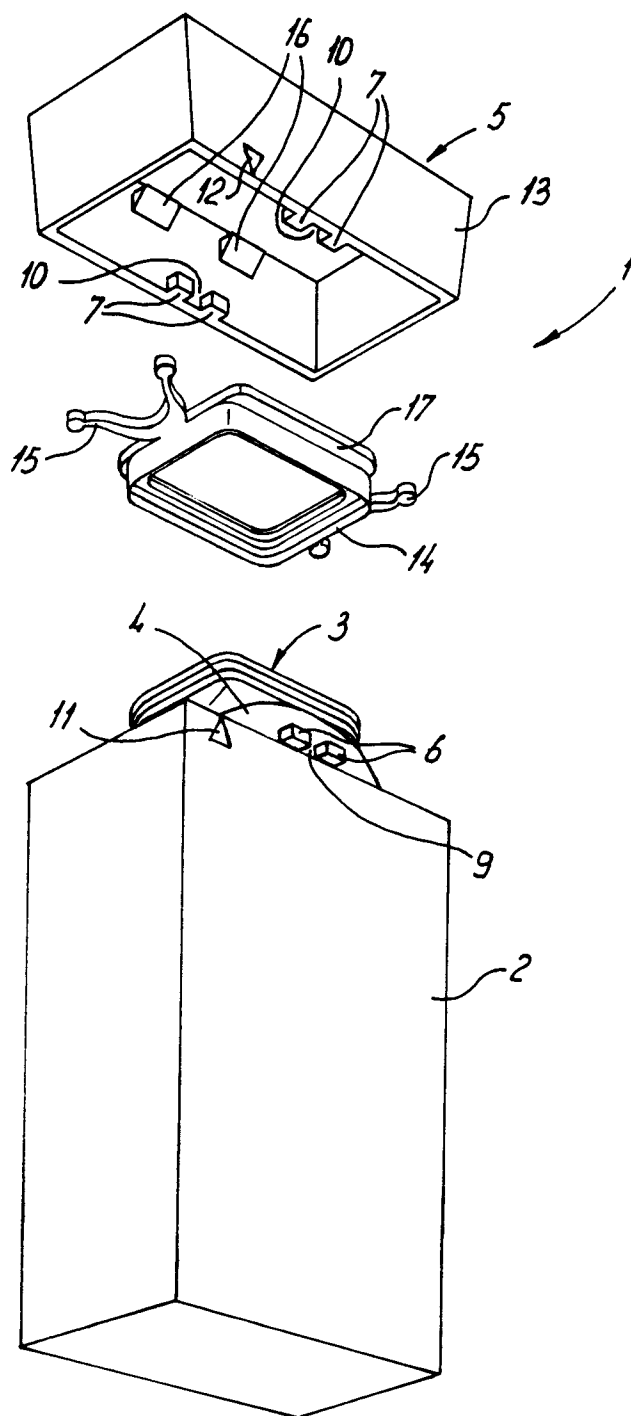


fig-3a

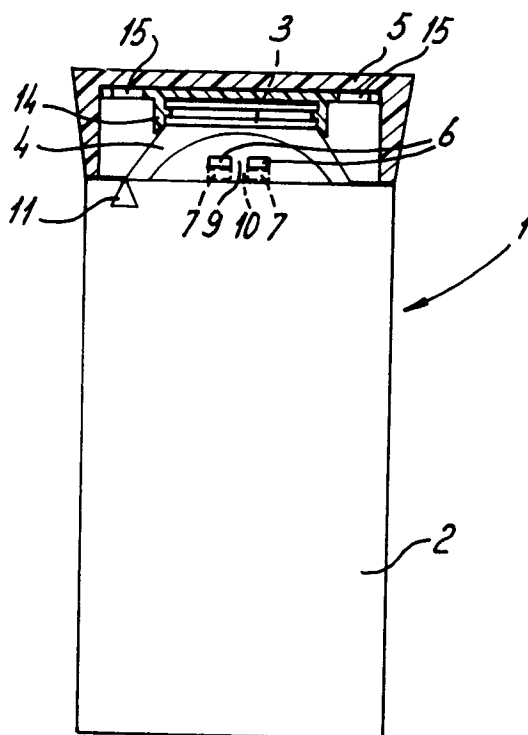
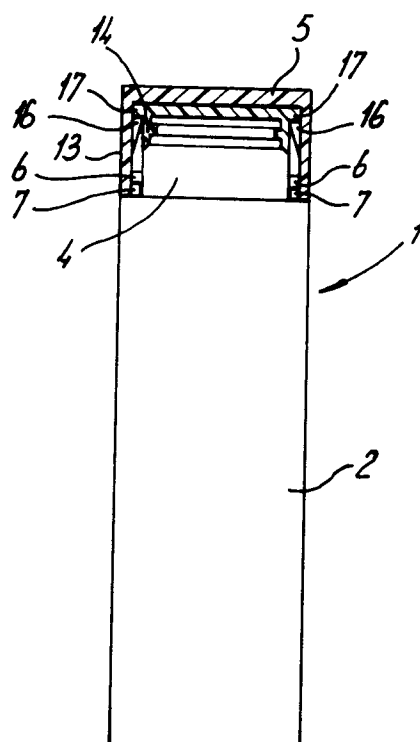


fig-3b





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 94 20 0293

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	US-A-4 095 718 (KONG) * the whole document * ---	1-4, 10	B65D50/06 B65D50/10 B65D50/04
A	US-A-4 511 051 (DESAI) * the whole document * ---	1-4, 10	
A	US-A-4 126 224 (LAAUWE ET AL.) * abstract; figures * ---	1	
A	US-A-3 942 630 (PHILLIPS) * abstract; figures * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 3 May 1994	Examiner Gino, C
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 I : document cited for other reasons & : member of the same patent family, corresponding document			

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