# US Patent & Trademark Office
# Patent Public Search | Text View


| | |
|---|---|
| United States Patent Application Publication | 20250256896 |
| Kind Code | A1 |
| Publication Date | August 14, 2025 |
| Inventor(s) | Salemi; Michael |


## Child Resistant Storage Container


### Abstract

The present invention provides a child-resistant storage container having a base and a lid. The base comprises a base panel, and a base wall having a lower portion and an upper portion configuring a cavity to store items therein. The base has a plurality of protrusions arranged on the outer surface of an upper portion of the base wall and adapted to engage with an inward projection of the lid to securely attach the lid to the base. Further, the lid has a cutout portion arranged at the first end portion of the lid configuring a fulcrum. The lid is pivotable around a fulcrum upon applying a force on the lid to partially open the lid. Further, the user has to pull the lid in an upward direction from a second end portion of the lid to completely detach the lid. The storage container meets the federal standard for Child-resistance.



**Inventors:** **Salemi; Michael (Long Beach, CA)**

**Applicant:** **Salemi; Michael** (Long Beach, CA)



**Family ID:** **1000008166664**

**Appl. No.:** **18/903390**

**Filed:** **October 01, 2024**

### Related U.S. Application Data

us-provisional-application US 63551549 20240209

### Publication Classification

**Int. Cl.:** **B65D50/04** (20060101); **B65D1/34** (20060101); **B65D43/02** (20060101)

**U.S. Cl.:**

CPC **B65D50/045** (20130101); **B65D1/34** (20130101); **B65D43/0212** (20130101); B65D2215/02 (20130101); B65D2543/00194 (20130101); B65D2543/00537

(20130101); B65D2543/00629 (20130101); B65D2543/00694 (20130101); B65D2543/00731 (20130101); B65D2543/00805 (20130101); B65D2543/00916 (20130101)

---

## Background/Summary

TECHNICAL FIELD

[0001] The present invention relates to a storage container. More particularly, the present invention relates to a child-resistant storage container.

BACKGROUND

[0002] The statistics provided by the American Association of Poison Control Centres underscore the issue of accidental poisoning among children in the United States. Poison Control centres receive an average of 3.0 million calls annually. Each day 300 children between the ages of 0 and 19 seek treatment in emergency departments nationwide, and unfortunately, two of these cases result in fatalities due to poisoning. A crucial preventive measure involves adopting child-resistant packaging as per the amount of pressure needed to pass the federal code 16 CFR 1700.20 which makes it difficult for children to access potentially hazardous products. This type of packaging is subjected to regulatory oversight under the Poison Prevention Packaging Act, highlighting the recognition of its importance in safeguarding children from accidental poisonings.

[0003] Presently, traditional packaging containers which can be used to store sensitive items such as lotions, serums, foundations, and various pharmaceutical products pose significant risks to the safety of children. The standard packaging containers with their easy accessibility make them susceptible to unintended and potentially harmful interactions by young children. The simplicity of their openings poses a risk, allowing children to gain access easily and potentially exposing them to hazardous substances, particularly when it comes to products such as medications or chemicals stored within these containers. The design flaws such as sharp edges and detachable small parts, contribute to the likelihood of injuries and choking hazards, posing a serious threat to children's well-being. In essence, the lack of safety features in traditional packaging elevates the risk of accidental exposure and ingestion, underscoring the critical need for more secure and child-friendly packaging solutions to safeguard children.

[0004] Therefore, there is a need for a child-resistant storage container, which overcomes few or all drawbacks of the prior art.

STATEMENT OF THE INVENTION

[0005] According to the present aspect of the invention, there is provided a child-resistant storage container. The child-resistant storage container may include a base and a lid. The base may have a base panel, and a base wall extending transversely and peripherally from the base panel configuring a cavity to store articles. The base wall may include a ledge extending transversally and peripherally from the base wall configuring an upper portion and a lower portion of the base wall. The lid may be attachable to an upper portion of the base wall of the base.

[0006] The lid includes a panel and a lid wall transversely extending from the panel. The panel is provided with a pair of depressed portions extending towards the base and is adapted to rest on an edge of the upper portion of the base wall when configured in a closed position. The lid wall has a cutout portion arranged at one of the sides of the lid and is slanted towards the end of the side. The cutout portion configures a fulcrum for pivoting the lid upon application of the force on the lid from the cutout portion.

[0007] The upper portion of the base wall may have a plurality of protrusions to receive and hold the lid thereon. The plurality of protrusions may extend from the outer surface of the upper portion and may have curved edges that blend into the outer surface of the upper portion. The lid is adapted

to rest on the ledge of the base and has a cutout portion adapted to pivot the lid around a fulcrum, upon application of a force on the lid for detaching the lid from the plurality of protrusions. Further, the lid is completely detachable from the base upon pulling the lid from the opposite side of the cutout portion to access the articles stored in the base.

[0008] Specifically, the lid may have an inward projection adapted to engage with the plurality of protrusions of the base to hold the lid thereon. The plurality of protrusions may be adapted to hold the lid until a force greater than the retention force of the plurality of protrusions is applied to the cutout portion. Specifically, the plurality of protrusions is arranged on the upper portion of the base wall in such a way that the center of the plurality of protrusions lies in the same horizontal plane.

[0009] In another aspect, the lid may have a pair of depressed portions arranged on a panel of the lid and is positioned at approximately one-fourth of the total length away from one of the longitudinal ends of the lid. The pair of depressed portions may have a depressed surface adapted to rest on the edge of the upper portion providing a pivoting movement around the fulcrum upon application of a force on a portion of the lid. The lid may include a first end portion and a second end portion which is opposite to the first end portion. The pair of depressed portions may be arranged on the panel of the lid and positioned at approximately one-fourth of the total length away from the longitudinal end of the first end portion.

[0010] The plurality of protrusions may include a latch protrusion arranged on one of the sides of the base, near the edge of the upper portion of the base wall transversely away from the horizontal plane. The latch protrusion may be provided to receive the inward projection of the cutout portion of the lid to securely hold the lid in a closed position.

[0011] The lid may be held on the base configuring a closed position to securely store the articles. In the closed position, the cutout portion may configure a first gap between the ledge of the base and the inward projection of the lid.

[0012] Furthermore, upon applying the force on the lid from the cutout portion, the lid may pivot around a fulcrum resting the inward projection on the ledge of the base. Simultaneously, the inward projection from the opposite side of the cutout portion may be disengaged from one or more protrusions of the plurality of protrusions configuring a second gap therein. Moreover, upon pulling the lid from the opposite side of the cutout portion, the lid is completely disengaged from the plurality of protrusions providing access to the articles stored in the base.

[0013] In an aspect, the storage container may have a cylindrical shape with the base wall having an upper portion and a lower portion. The upper portion and the lower portion may be formed by a circular side and a flat side to configure a cavity within the base. The base may include a plurality of protrusions extending from the outer surface of the upper portion specifically, the flat side may have one protrusion and the circular side of the base may have two protrusions.

[0014] In another aspect, the base wall of the base may include a lower portion extending from the periphery of the base panel, and an upper portion extending from the lower portion. Especially, a portion near the base panel is the lower portion and a portion extending from the lower portion away from the base panel is the upper portion. Further, the base may have a ledge extending from the base wall separating the upper portion from the lower portion. In this aspect, the distance of the upper portion measured from the center of the base panel may be equal to the distance of the lower portion measured from the center of the base panel.

[0015] An object of the present invention is to provide a child-resistant storage container that provides child-resistant features to avoid accidental exposure and ingestion of the stored items which might be hazardous to children.

[0016] Another object of the present invention is to provide a child-resistant storage container as per the federal code 16 CFR 1700.20 which is adapted to provide the difficulty in opening the storage container for children and facilitate the easy detachment of the lid while being opened by adults.

[0017] Yet another object of the present invention is to provide a child-resistant storage container, which does not accidentally pop up so spillage of the contents of the storage container is avoided.

## Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] Other features and advantages of the invention will become apparent when reading the detailed description given below, purely by way of example and in a non-limitative manner, referring to the following figures:

[0019] FIG. **1** illustrates a perspective view of a child-resistant storage container in accordance with the present invention;

[0020] FIGS. **2***a*, and **2***b* illustrate a top view and a side view of the base of the child-resistant storage container in accordance with the present invention;

[0021] FIGS. **3***a*, and **3***b* illustrates a top view and a side view of the lid of the child-resistant storage container in accordance with the present invention;

[0022] FIG. **4** illustrates a side view of the child-resistant storage container in a closed position in accordance with the present invention;

[0023] FIG. **5** illustrates a side view of the child-resistant storage container in a partially open position in accordance with the present invention;

[0024] FIG. **6** illustrates a perspective view of a child-resistant storage container in accordance with the second embodiment of the present invention;

[0025] FIGS. **7***a* and **7***b* illustrate a top view and a side view of the lid of the child-resistant storage container in accordance with the second embodiment of the present invention shown in FIG. **6**;

[0026] FIGS. **8***a* and **8***b* illustrate a side view of the lid of the child-resistant storage container in a closed position and in a partially open position in accordance with the embodiment shown in FIG. **6**;

[0027] FIG. **9** illustrates a side view of the child-resistant storage container in a closed position in accordance with the third embodiment of the present invention;

[0028] FIGS. **10***a* and **10***b* illustrate a top view and a side view of the base of the child-resistant storage container in accordance with the embodiment shown in FIG. **9**;

[0029] FIGS. **11***a* and **11***b* illustrate a top view and a side view of the lid of the child-resistant storage container in accordance with the embodiment shown in FIG. **9**;

[0030] FIGS. **12***a* and **12***b* illustrate a side view of the lid of the child-resistant storage container in a closed position and in a partially open position in accordance with the embodiment shown in FIG. **9**;

[0031] FIGS. **13***a* and **13***b* illustrate a top view and a side view of the base of the child-resistant storage container in accordance with the fourth embodiment of the present invention; and

[0032] FIG. **13***c* illustrate a sectional view of a portion the base of the child-resistant storage container in accordance with the fourth embodiment of the present invention.

DETAILED DESCRIPTION

[0033] An embodiment of this invention, illustrating its features, will now be described in detail. The words “comprising, “having, “containing,” and “including,” and other forms thereof, are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items, or meant to be limited to only the listed item or items.

[0034] The present invention provides a child-resistant storage container. The storage container is adapted to store items such as lotions, serums, foundations, and various pharmaceutical products. Further, the child-resistant storage container is adapted to provide a child resistant feature which does not allow children to open the storage container and access the items stored therein which

might be harmful to them.
[0035] The terms “first,” “second,” and the like, herein do not denote any order, quantity, or importance, but rather are used to distinguish one element from another, and the terms “an” and “a” herein do not denote a limitation of quantity, but rather denote the presence of at least one of the referenced item. The disclosed embodiments are merely exemplary of the invention, which may be embodied in various forms.
[0036] Referring now to FIG. **1**, a child-resistant storage container in accordance with the present invention is illustrated. Hereinafter, “the child-resistant storage container” is referred to as “the storage container (**100**)”. The storage container (**100**) includes a base (**10**) and a lid (**20**). The base (**10**) and lid (**20**) are adapted to attach with each other in such a way that the attachment does not allow children to open the lid (**20**) of the storage container (**100**) thereby avoiding the exposure and ingestion of the content stored therein. The base (**10**) and the lid (**20**) may be fastened by a snap-fit arrangement. Specifically, the base (**10**) and the lid (**20**) may have elements that facilitate the snap-fit arrangement and provide the child-resistant feature simultaneously. In the present embodiment of the invention, the base (**10**) is having rectangular or square shape with two longitudinal sides and two transverse sides. It is obvious to a person skilled in the art to configure the base (**10**) in any other shape such as triangular, pentagonal, or hexagonal.
[0037] Referring now to FIGS. **1**, **2***a*, and **2***b*, the base (**10**) of the storage container (**100**) includes a base panel (**11**), and a base wall (**110**) extending transversely and peripherally from the base panel (**11**) configuring a cavity to store articles. Specifically, the base wall (**110**) includes a lower portion (**12**) extending from the periphery of the base panel (**11**), and an upper portion (**13**) extending peripherally from the lower portion (**12**). The lower portion (**12**) has a height (H**1**) extending from the base panel (**11**) to the ledge (**125**), and the upper portion (**13**) has a height (H**2**) extending from the ledge to the top edge. Further, the base (**10**) has a ledge (**125**) inwardly extending from an upper edge of the lower portion (**12**), and the upper portion (**13**) is transversely extending from an edge of the ledge (**125**). The ledge (**125**) separates the upper portion (**13**) from the lower portion (**12**). The ledge (**125**) has a width (W) spanned from the upper edge of the lower portion (**12**) to a lower edge of the upper portion (**13**) (shown in FIG. **2***a*). In an embodiment, the lower portion (**12**), the ledge (**125**) and the upper portion (**13**) are integrally formed from a single sheet of material. The lower portion (**12**) extends peripherally from the base panel (**11**) and projects upward to the height (H**1**), thereafter bending inwardly towards the center of the base panel (**11**) and extending in a transverse direction relative to the lower portion (**12**) by the width (W). Further, the sheet bends upwardly, extending transversely to the ledge (**125**) for the height (H**2**), thereby forming the base wall (**110**).
[0038] In an alternate embodiment, the base panel (**11**), the lower portion (**12**), the ledge (**125**) and the upper portion (**13**) are integrally formed from a single sheet of material.
[0039] The distance of the upper portion (**13**) measured from the center of the base panel (**11**) is smaller than the distance of the lower portion (**12**) measured from the center of the base panel (**11**). The upper portion (**13**) and the lower portion (**12**) are configured on the base wall (**110**), specifically, the base wall (**110**) has four sides, a first side (**101**), a second side (**102**) adjacent to the first side (**101**), a third side (**103**) adjacent to the second side (**102**), and a fourth side (**104**) adjacent to the third side (**103**) to configure the cavity within the base (**10**) to store sensitive items such as lotions, serums, foundations, and various pharmaceutical products. The base (**10**) is adapted to store any type of items such as liquids, solids, semi-solids and the like and is not limited to any state of matter.
[0040] Further, the base (**10**) includes a plurality of protrusions (**15**) extending from an outer surface of the upper portion (**13**). In the present embodiment of the invention, six protrusions (**15***a*, **15***b*, **15***c*, **15***d*, **15***e*, and **15***f*) are provided, specifically, the longitudinal sides of the base (**10**) that is the first side (**101**) has two protrusions (**15***b*, and **15***c*) and the third side (**103**) has two protrusions (**15***e*, and **15***f*), and the transverse sides that are the second side (**102**) have one protrusion (**15***d*) and the fourth side (**104**) has one protrusion (**15***a*). In the present embodiment of the invention, the

center of the five protrusions (**15***b*, **15***c*, **15***d*, **15***c*, and **15***f*) lies in a horizontal plane (P) while one protrusion is a latch protrusion (**15***a*) arranged on the fourth side (**104**) and positioned near the edge of the upper portion (**13**) transversely away from the horizontal plane (P). The latch protrusion (**15***a*) is adapted to securely receive a portion of the lid (**20**). In the present embodiment, the plurality of protrusions (**15**) has a pill-like shape and meets the federal standard specifically the federal code 16 CFR 1700.20 for Child-resistance. But it is obvious for a person skilled in the art to provide the plurality of protrusions (**15**) having any other shape adapted to facilitate the attaching and detaching of the lid (**20**) and meets the requirements of the federal code 16 CFR 1700.20 for Child-resistance.

[0041] The plurality of protrusions (**15**) extends from the outer surface of the upper portion (**13**) and has curved edges that blend into the outer surface of the upper portion (**13**) providing easiness in attaching and detaching the lid (**20**).

[0042] The plurality of protrusions (**15**) extends outwardly from the outer surface of the upper portion (**13**) for a thickness (T) (shown in FIG. **2***b*) and then curves towards the outer surface of the upper portion (**13**) to merge into the outer surface. The thickness (T) of the plurality of protrusions (**15**) is configured according to the force (N) required to open the lid (**20**).

[0043] The protrusions (**15***b*, **15***f*, **15***c*, **15***e*) of the plurality of protrusions (**15**) are positioned at a distance (D) from the transverse sides of the base (**10**). Specifically, the protrusions (**15***b*, **15***f*) are positioned at the distance (D) from the fourth side (**104**) and the protrusions (**15***c*, **15***e*) are positioned at the distance (D) from the first side (**104**) (shown in FIG. **2***a*). It may be obvious for a person skilled in the art to configure the distance (D) to position the plurality of protrusions (**15**) according to the force (N) that is required relative to the size of the storage container (**100**).

[0044] Further, it is obvious to a person skilled in the art to provide three protrusions, four protrusions, five protrusions, seven protrusions, eight protrusions or any number of protrusions that extend from the outer surface of the upper portion (**13**).

[0045] Referring now to FIGS. **1**, **3***a*, and **3***b*, the lid (**20**) of the storage container (**100**) is adapted to attach to the base (**10**) for securely closing the storage container (**100**). The lid (**20**) comprises a panel (**22**) and a lid wall (**24**) extending from the panel (**22**) peripherally. The panel (**22**) is a rectangular flat sheet of metal having dimensions adapted according to the dimensions of the base (**10**) to securely close the storage container (**100**). The lid wall (**24**) of the lid (**20**) is transversely extending from the edge of the panel (**22**) and adapted to engage with the plurality of protrusions (**15**) of the base (**10**) to attach the lid (**20**) to the base (**10**). Specifically, the lid wall (**24**) has an inward projection (**241**) that is adapted to snap-fit with the plurality of protrusions (**15**). In the present embodiment, the inward projection (**241**) is formed by turning or rolling the end of the lid wall (**24**) inwardly throughout the periphery of the lid (**20**) (shown in FIG. **3***b*).

[0046] In another embodiment (not shown), the inward projection (**241**) may extend transversely from the lid wall (**24**) without being formed by an inward rolling of the edge of the lid wall (**24**).

[0047] Further, the lid (**20**) has a first end portion (**20***a*) and a second end portion (**20***b*) which is opposite to the first end portion (**20***a*). The first end portion (**20***a*) includes a cutout portion (**25**). The cutout portion (**25**) is formed due to the edge of the lid wall (**24**) of the lid (**20**) being slanted towards the end of the first end portion (**20***a*) of the lid (**20**).

[0048] The lid (**20**) is attachable to the base (**10**) when the lid (**20**) is pressed against the base (**10**). Specifically, the inward projection (**241**) of the lid (**20**) engages with the plurality of protrusions (**15**) of the base (**10**) to securely attach the lid (**20**). While attaching the lid (**20**) to the base (**10**), the lid (**20**) is aligned in such a way that the inward projection (**241**) of the cutout portion (**25**) engages with the latch protrusion (**15***a*) of the base (**10**). In the attached position, the inward projection (**241**) except for the cutout portion (**25**) of the lid (**20**) rests on the ledge (**125**) of the base (**10**). The cutout portion (**25**) configures a first gap (**251**) between the inward projection (**241**) of the lid (**20**) and the ledge (**125**) of the base (**10**) to facilitate the movement of the lid (**20**) around the fulcrum (**27**).

[0049] To open the storage container (**100**), the user has to apply a downward force (N) near the first end portion (**20***a*) of the lid (**20**). The lid (**20**) is pivotable around the fulcrum (**27**) to partially open the lid (**20**) (shown in FIG. **5**) upon applying the downward force (N) on the lid (**20**). In the present embodiment of the invention, the snap-fit arrangement of the lid (**20**) and the base (**10**) is adapted to receive 60 Newtons of force on the lid (**20**) to overcome the retention force of the inward projection (**241**) and the plurality of protrusions (**15**). A person skilled in the art may modify the snap-fit arrangement of the lid (**20**) and the base (**10**) to adapt the storage container (**100**) for any other predefined downward force (N) required to partially open the lid (**20**). Specifically, the downward force (N) is comparatively more than the force that the average child can apply as per the federal code 16 CFR 1700.20.

[0050] Specifically, the plurality of protrusions (**15**) is configured with the thickness (T) and a position on the upper portion (**13**) of the base wall (**110**) according to the force (N) required to detach the lid (**20**). In this case, the thickness (T) of the plurality of protrusions (**15**) and the distance (D) of the plurality of protrusions (**15**) from the transverse sides of the base (**10**) are arranged for the force (N) of 60 newtons. However, it may be obvious for a person skilled in the art to change the thickness (T) of the plurality of protrusions (**15**) and/or the distance (D) between the plurality of protrusions (**15**) from the transverse sides of the base (**10**) to change the force (N) required to detach the lid (**20**).

[0051] The lid (**20**) is pivotable around the fulcrum (**27**), until the cutout portion (**25**) abuts the ledge (**125**) of the base (**10**), and simultaneously, the lid (**20**) detaches from the plurality of protrusions (**15**) that are arranged on the first side (**101**), the second side (**102**), and the third side (**103**) of the base (**10**) and the cutout portion (**25**) rests on the ledge (**125**) of the base (**10**) retaining the lid (**20**) on top of the base (**10**) to avoid the immediate popping of the lid (**20**).

[0052] Specifically, the lid (**20**) detaches from the protrusion (**15***d*) of the first side (**101**) and the protrusions (**15***c*, and **15***e*) of the third side (**103**) that are near the second side (**102**) of the base (**10**), and the lid (**20**) is still attached to the latch protrusion (**15***a*) and the protrusions (**15***b*, and **15***f*) of the first side (**101**) and the third side (**103**) that are near to the first side (**101**) of the base (**10**). The plurality of protrusions (**15**) is positioned on the upper portion (**13**) of the base wall (**110**) according to the force (N) required to open the lid (**20**). The force (N) required is relative to the size of the storage container (**100**) and the plurality of protrusions (**15**) can be positioned according to the required force. It may be obvious for a person skilled in the art to position the plurality of protrusions (**15**) in different places according to the force (N) required to open the storage container (**100**).

[0053] In the partial opening position of the lid (**20**), the inward projection (**241**) of the lid (**20**) moves away from the ledge (**125**) of the base (**10**) to form a second gap (**252**) therebetween. Specifically, the inward projection (**241**) from the opposite side of the cutout portion (**25**) that is the second end portion (**20***b*) of the lid (**20**) disengages from one or more protrusions (**15**) of the plurality of protrusions (**15**) to form the second gap (**252**). Thereafter, the user has to pull the lid (**20**) in an upward direction from the second end portion (**20***b*) of the lid (**20**) to completely detach the lid (**20**) by overcoming the retention force of the remaining protrusions (**15***a*, **15***b*, and **15***f*) of the base (**10**). The second gap (**252**) is utilised to completely detach the lid (**20**) from the base (**10**). Hence, the storage container (**100**) is opened by performing the two-step procedure, the first step of applying the downward force (N) on the first end portion (**20***a*) of the lid (**20**), and the second step of pulling the lid (**20**) from the second end portion (**20***b*) of the lid (**20**) by utilising the second gap (**252**). The two-step procedure to open the storage container (**100**) facilitates a child-proof feature and avoids the exposure and ingestion of the stored items.

[0054] Referring now to FIGS. **6**, **7***a*, **7***b*, and **8***a* **8***b*, in a second embodiment of the present invention, the lid (**20**) includes a first end portion (**20***a*) and a second end portion (**20***b*) which is opposite to the first end portion (**20***a*). The first end portion (**20***a*) includes a cutout portion (**25**) and a pair of depressed portions (**26**). The pair of depressed portions (**26**) are arranged on the panel (**22**)

of the lid (**20**) and are positioned at approximately one-fourth of the total length away from the longitudinal end of the first end portion (**20***a*). It may be obvious for a person skilled in the art to position the pair of depressed portions (**26**) at different lengths on the lid (**20**) according to the force (N) that is required relative to the size of the storage container (**100**).

[0055] In the present embodiment of the invention, the pair of depressed portions (**26**) have a semi-circular shape forming a depressed surface downward from the panel (**22**) as viewed in the side view (shown in FIG. **7***b*). The depressed surface is adapted to rest on the edge of the upper portion (**13**) providing a pivoting movement around the fulcrum (**27**) upon application of a force (N) on a portion of the lid (**20**). The pair of depressed portions (**26**) and the fulcrum (**27**) lie in the same vertical plane providing a pivoting moment around the fulcrum (**27**).

[0056] In another embodiment of the invention, the shape of the pair of depressed portions (**26**) is but not limited to rectangular, triangular or the like.

[0057] The pair of depressed portions (**26**) are arranged opposite to each other away from the center axis of the lid (**20**) and adapted to make contact with the edge of the upper portion (**13**) of the base (**10**) when the lid (**20**) is attached to the base (**10**) (shown in FIG. **8***a*). Specifically, the depressed surface of the pair of depressed portions (**26**) makes contact with the edge of the upper portion (**13**) of the base (**10**). The pair of depressed portions (**26**) and the cutout portion (**25**) are adapted to configure a fulcrum (**27**) around which the lid (**20**) is pivotable to facilitate the detachment of the lid (**20**) from the base (**10**) (shown in FIG. **8***b*).

[0058] In another embodiment of the invention (not shown), the panel (**22**) of the lid (**20**) has elements extending from the inner surface of the panel (**22**) replacing the pair of depressed portions (**26**).

[0059] Referring to FIGS. **9**, **10***a*, **10***b*, **11***a*, **11***b*, **12***a*, and **12***b* in the third embodiment of the present invention, the storage container (**100**) has a cylindrical shape. The storage container (**100**) includes a base (**10**) and a lid (**20**). The base (**10**) and the lid (**20**) are adapted to attach with each other in such a way that the attachment does not allow children to open the lid (**20**) of the storage container (**100**). The base (**10**) of the storage container (**100**) includes a base panel (**11**), and a base wall (**110**) having a lower portion (**12**) extending from the periphery of the base panel (**11**), and an upper portion (**13**) extending from the lower portion (**12**). Specifically, the base (**10**) has a ledge (**125**) inwardly extending from the upper edge of the lower portion (**12**), and the upper portion (**13**) is transversely extending from an edge of the ledge (**125**). The upper portion (**13**) and the lower portion (**12**) are formed by a circular side (**105**), and a flat side (**106**) to configure a cavity within the base (**10**) to store sensitive items such as lotion, serums, foundations, and various pharmaceutical products.

[0060] Further, the base (**10**) includes a plurality of protrusions (**15**) extending from the outer surface of the upper portion (**13**). In this embodiment of the invention, three protrusions (**15***a*, **15***b*, and **15***c*) are provided, specifically, the flat side (**106**) has one protrusion (**15***a*) and the circular side (**105**) of the base (**10**) has two protrusions (**15***b*, and **15***c*). The plurality of protrusions (**15**) is designed to meet the requirements of the federal standards specifically the federal code 16 CFR 1700.20 for Child-resistance.

[0061] The lid (**20**) of the storage container (**100**) is adapted to attach to the base (**10**) for securely closing the storage container (**100**). The lid (**20**) comprises a panel (**22**) and a lid wall (**24**) extending from the panel (**22**). The panel (**22**) is a flat sheet of metal having a shape adapted according to the shape of the base (**10**) to securely close the storage container (**100**). The lid wall (**24**) of the lid (**20**) is transversely extending from the edge of the panel (**22**) and adapted to engage with the plurality of protrusions (**15**) of the base (**10**). Specifically, the lid wall (**24**) has an inward projection (**241**) that is adapted to snap-fit with the plurality of protrusions (**15**). The inward projection (**241**) is formed by turning the end of the lid wall (**24**) inwardly throughout the periphery of the lid (**20**).

[0062] Further, the lid (**20**) has a first end portion (**20***a*) and a second end portion (**20***b*) which is

opposite to the first end portion (**20***a*). The first end portion (**20***a*) includes a cutout portion (**25**). The cutout portion (**25**) is adapted to configure a fulcrum (**27**) around which the lid (**20**) is pivotable to facilitate the detachment of the lid (**20**) from the base (**10**). While attaching the lid (**20**) to the base (**10**), the lid (**20**) is aligned in such a way that the first end portion (**20***a*) of the lid (**20**) is attached to the circular side (**105**) portion of the base (**10**) and the second end portion (**20***b*) of the lid (**20**) is attached to the flat side (**106**) portion of the base (**10**). In the attached position, the inward projection (**241**) except for the cutout portion (**25**) of the lid (**20**) rests on the ledge (**125**) of the base (**10**). The cutout portion (**25**) configures a first gap (**251**) between the inward projection (**241**) of the lid (**20**) and the ledge (**125**) of the base (**10**) to facilitate the movement of the lid (**20**) around the fulcrum (**27**).

[0063] To open the storage container (**100**), the user has to apply a downward force (N) near the first end portion (**20***a*) of the lid (**20**). The lid (**20**) is pivotable around the fulcrum (**27**) to partially open the lid (**20**) (shown in FIG. **12***b*). The lid (**20**) is pivotable around the fulcrum (**27**) until the cutout portion (**25**) makes contact with the ledge (**125**) of the base (**10**), and simultaneously, the lid (**20**) detaches from the protrusion (**15***a*) and the cutout portion (**25**) rests on the ledge (**125**) of the base (**10**) retaining the lid (**20**) on top of the base (**10**) to avoid the immediate popping of the lid (**20**).

[0064] In the partial opening position of the lid (**20**), a second gap (**252**) is formed between the inward projection (**241**) of the lid (**20**) and the ledge (**125**) of the base (**10**) at the flat side (**106**) of the base (**10**). The second gap (**252**) is utilised to completely detach the lid (**20**) from the base (**10**). Specifically, the user has to pull the lid (**20**) in an upward direction from the second end portion (**20***b*) of the lid (**20**) to completely detach the lid (**20**) by overcoming the retention force of the protrusions (**15***b*, and **15***c*) of the base (**10**).

[0065] Referring now to FIGS. **13***a*, and **13***b*, in a fourth embodiment of the present invention, the base (**10**) of the storage container (**100**) includes a base panel (**11**), a base wall (**110**) extending transversely and peripherally from the base panel (**11**) configuring a cavity to store articles. Specifically, the base wall (**110**) includes a lower portion (**12**) extending from the periphery of the base panel (**11**), and an upper portion (**13**) extending from the lower portion (**12**). The upper portion (**13**) and the lower portion (**12**) are part of the base wall (**110**), a portion near the base panel (**11**) is the lower portion (**12**) and a portion extending from the lower portion (**12**) away from the base panel (**11**) is the upper portion (**13**). Specifically, the base (**10**) has a ledge (**125**) extending from the base wall (**110**) separating the upper portion (**13**) from the lower portion (**12**). The distance of the upper portion (**13**) measured from the center of the base panel (**11**) is equal to the distance of the lower portion (**12**) measured from the center of the base panel (**11**).

[0066] Therefore, the present invention has the advantage of providing the storage container (**100**) to store various types of items. Specifically, the storage container (**100**) has child-resistant features such as a two-step procedure for detaching the lid (**20**) from the base (**10**) which makes the storage container (**100**) difficult to open for children. Further, the arrangement of the pair of depressed portions (**26**), the cutout portion (**25**), and the plurality of protrusions (**15**) are adapted to facilitate the partial opening of the lid (**20**) avoiding the sudden popping of the lid (**20**). The storage container (**100**) is engineered to meet the requirements of the federal standards specifically the federal code 16 CFR 1700.20 for Child-resistance. The lid (**20**) and the base (**10**) are adapted to provide difficulty while being opened by the children and facilitate the easy detachment of the lid (**20**) while being opened by the adults.

[0067] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the present invention to the precise forms disclosed, and obviously, many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to explain the principles of the present invention best and its practical application, to thereby enable others skilled in the art to best utilise the present invention and various

embodiments with various modifications as are suited to the particular use contemplated. It is understood that various omission and substitutions of equivalents are contemplated as circumstance may suggest or render expedient, but such are intended to cover the application or implementation without departing from the scope of the claims of the present invention.

## Claims

**1**. A child-resistant storage container (**100**), the storage container (**100**) comprising: a base (**10**), the base (**10**) having a base panel (**11**), and a base wall (**110**) extending transversely and peripherally from the base panel (**11**) configuring a cavity to store articles, the base wall (**110**) includes a ledge (**125**) extending transversally and peripherally from the base wall (**110**) configuring an upper portion (**13**) and a lower portion (**12**) of the base wall (**110**); and a lid (**20**) attachable to an upper portion (**13**) of the base wall (**110**) of the base (**10**); wherein, the upper portion (**13**) of the base wall (**110**) has a plurality of protrusions (**15**) to receive and hold the lid (**20**) thereon, wherein the lid (**20**) is adapted to rest on the ledge (**125**) of the base (**10**) and has a cutout portion (**25**) adapted to pivot the lid (**20**) around a fulcrum (**27**) upon application of a force (N) on a portion of the lid (**20**) for detaching the lid (**20**) from the plurality of protrusions (**15**), and the lid (**20**) is completely detachable from the base (**10**) upon pulling the lid (**20**) from opposite side of the cutout portion (**25**) to access the articles stored in the base (**10**).
**2**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the lid (**20**) has an inward projection (**241**) adapted to engage with the plurality of protrusions (**15**) of the base (**10**) to hold the lid (**20**) thereon, configuring a closed position to securely store the articles, wherein in the closed position, the cutout portion (**25**) configures a first gap (**251**) between the ledge (**125**) of the base (**10**) and the inward projection (**241**) of the lid (**20**).
**3**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the portion of the lid (**20**) is a first end portion (**20***a*) pivotable around the depressed portions (**26**) upon applying the force (N).
**4**. The child-resistant storage container (**100**) as claimed in claim 1, wherein upon applying the force (N) on the lid (**20**) from the cutout portion (**25**), the lid (**20**) pivots around a fulcrum (**27**), resting an inward projection (**241**) on the ledge (**125**) of the base (**10**), wherein the inward projection (**241**) from the opposite side of the cutout portion (**25**) is disengaged from one or more protrusions (**15**) of the plurality of protrusions (**15**) configuring a second gap (**252**).
**5**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the plurality of protrusions (**15**) is adapted to hold the lid (**20**) until the force (N) greater than the retention force of the plurality of protrusions (**15**) is applied on the cutout portion (**25**), wherein the plurality of protrusions (**15**) is positioned according to the force (N) required to detach the lid (**20**) from the base (**10**).
**6**. The child-resistant storage container (**100**) as claimed in claim 1, wherein upon pulling the lid (**20**) from the opposite side of the cutout portion (**25**), the lid (**20**) is completely disengaged from the plurality of protrusions (**15**) providing access to the articles stored in the base (**10**).
**7**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the plurality of protrusions (**15**) is arranged on the upper portion (**13**) of the base wall (**110**) in such a way that the center of the plurality of protrusions (**15**) lies in the same horizontal plane (P), wherein the plurality of protrusions (**15**) includes a latch protrusion (**15***a*) arranged on one of the sides of the base (**10**), near the edge of the upper portion (**13**) of the base wall (**110**) and positioned transversely away from the horizontal plane (P).
**8**. The child-resistant storage container (**100**) as claimed in claim 7, wherein the latch protrusion (**15***a*) is provided to receive an inward projection (**241**) of the cutout portion (**25**) of the lid (**20**) to securely hold the lid (**20**) in a closed position.
**9**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the lid (**20**) includes a

panel (**22**) and a lid wall (**24**) transversely extending from the panel (**22**), wherein the panel (**22**) is provided with a pair of depressed portions (**26**) extending towards the base (**10**) and are adapted to rest on an edge of the upper portion (**13**) of the base wall (**110**) when configured in a closed position.

**10**. The child-resistant storage container (**100**) as claimed in claim 9, wherein the lid wall (**24**) has a cutout portion (**25**) arranged at one of the sides of the lid (**20**) and is slanted towards the end of the side, the cutout portion (**25**) configures a fulcrum (**27**) for pivoting the lid (**20**) upon application of the force (N) on the lid (**20**) from the cutout portion (**25**).

**11**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the base wall (**110**) includes a lower portion (**12**) extending from the periphery of the base panel (**11**), and an upper portion (**13**) extending from the lower portion (**12**), wherein a portion near the base panel (**11**) is the lower portion (**12**) and a portion extending from the lower portion (**12**) away from the base panel (**11**) is the upper portion (**13**).

**12**. The child-resistant storage container (**100**) as claimed in claim 11, wherein the base (**10**) has a ledge (**125**) extending from the base wall (**110**) separating the upper portion (**13**) from the lower portion (**12**), wherein the distance of the upper portion (**13**) measured from the center of the base panel (**11**) is equal to the distance of the lower portion (**12**) measured from the center of the base panel (**11**).

**13**. The child-resistant storage container (**100**) as claimed in claim 1, wherein the storage container (**100**) has a cylindrical shape with the base wall (**10**) having an upper portion (**13**) and a lower portion (**12**), wherein the upper portion (**13**) and the lower portion (**12**) are formed by a circular side (**105**) and a flat side (**106**) to configure a cavity within the base (**10**).

**14**. The child-resistant storage container (**100**) as claimed in claim 13, wherein the base (**10**) includes a plurality of protrusions (**15**) extending from the outer surface of the upper portion (**13**), specifically, the flat side (**106**) has one protrusion (**15***a*) and the circular side (**105**) of the base (**10**) has two protrusions (**15***b*, and **15***c*).

**15**. A child-resistant storage container (**100**), the storage container (**100**) comprising: a base (**10**), the base (**10**) having a base panel (**11**), and a base wall (**110**) extending transversely and peripherally from the base panel (**11**) configuring a cavity to store articles, the base wall (**110**) includes a ledge (**125**) extending transversally and peripherally from the base wall (**110**) configuring an upper portion (**13**) and a lower portion (**12**) of the base wall (**110**); and a lid (**20**) attachable to an upper portion (**13**) of the base wall (**110**) of the base (**10**); wherein, the upper portion (**13**) of the base wall (**110**) has a plurality of protrusions (**15**) to receive and hold the lid (**20**) thereon, wherein the lid (**20**) is adapted to rest on the ledge (**125**) of the base (**10**) and has a cutout portion (**25**) adapted to pivot the lid (**20**) around a fulcrum (**27**) upon application of a force (N) on the lid (**20**) for detaching the lid (**20**) from the plurality of protrusions (**15**), and the lid (**20**) is completely detachable from the base (**10**) upon pulling the lid (**20**) from opposite side of the cutout portion (**25**) to access the articles stored in the base (**10**) wherein, the lid (**20**) has a pair of depressed portions (**26**) arranged on a panel (**22**) of the lid (**20**) and is positioned at approximately one-fourth of the total length away from one of the longitudinal ends of the lid (**20**), the pair of depressed portions (**26**) has a depressed surface adapted to rest on the edge of the upper portion (**13**) providing a pivoting movement around the fulcrum (**27**) upon application of a force (N) on a portion of the lid (**20**).

**16**. The child-resistant storage container (**100**) as claimed in claim 15, wherein the lid (**20**) includes a first end portion (**20***a*) and a second end portion (**20***b*) which is opposite to the first end portion (**20***a*), the pair of depressed portions (**26**) are arranged on the panel (**22**) of the lid (**20**) and are positioned at approximately one-fourth of the total length away from the longitudinal end of the first end portion (**20***a*).

**17**. The child-resistant storage container (**100**) as claimed in claim 15, wherein the portion of the lid (**20**) is a first end portion (**20***a*), pivotable around the depressed portions (**26**) upon applying the

force (N) on the first end portion (**20***a*).

**18**. A child-resistant storage container (**100**), the storage container (**100**) comprising: a base (**10**), the base (**10**) having a base panel (**11**), and a base wall (**110**) extending transversely and peripherally from the base panel (**11**) configuring a cavity to store articles, the base wall (**110**) includes a ledge (**125**) extending transversally and peripherally from the base wall (**110**) configuring an upper portion (**13**) and a lower portion (**12**) of the base wall (**110**); and a lid (**20**) attachable to an upper portion (**13**) of the base wall (**110**) of the base (**10**); wherein, the upper portion (**13**) of the base wall (**110**) has a plurality of protrusions (**15**) to receive and hold the lid (**20**) thereon, wherein the lid (**20**) is adapted to rest on the ledge (**125**) of the base (**10**) and has a cutout portion (**25**) adapted to pivot the lid (**20**) around a fulcrum (**27**) upon application of a force (N) on the lid (**20**) for detaching the lid (**20**) from the plurality of protrusions (**15**), and the lid (**20**) is completely detachable from the base (**10**) upon pulling the lid (**20**) from opposite side of the cutout portion (**25**) to access the articles stored in the base (**10**) wherein, the plurality of protrusions (**15**) extends from the outer surface of the upper portion (**13**) and has curved edges that blend into the outer surface of the upper portion (**13**).