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(54) **CHILD-RESISTANT SENIOR-FRIENDLY PACKAGING**

(71) Applicant: **Lantz Packaging, LLC**, Erie, CO (US)

(72) Inventors: **Travis Lantz**, Erie, CO (US); **Brandon Lantz**, Erie, CO (US)

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(60) Provisional application No. 62/552,801, filed on Aug. 31, 2017, provisional application No. 62/595,720, filed on Dec. 7, 2017.

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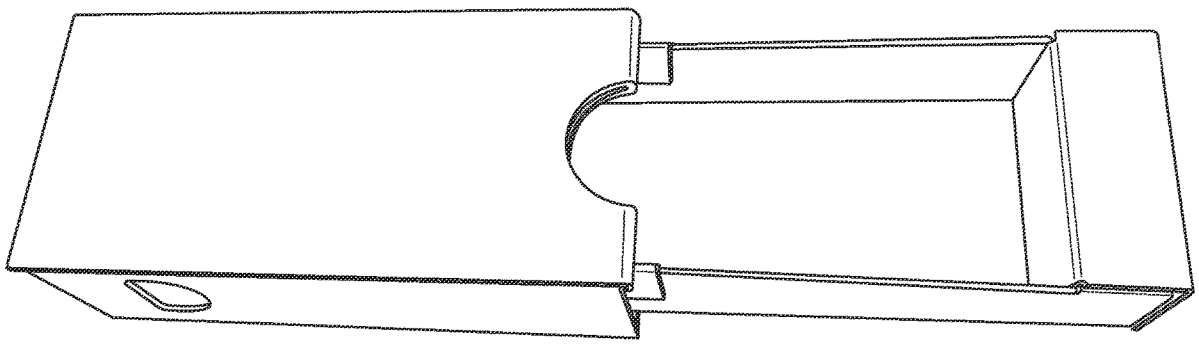
B65D 5/38	(2006.01)

(52) **U.S. Cl.**

CPC ***B65D 77/0433*** (2013.01); ***B65D 77/22*** (2013.01); *B65D 2215/02* (2013.01); ***B65D 5/38*** (2013.01); ***B65D 75/327*** (2013.01)

(57) **ABSTRACT**

A cardboard package has a cardboard container and a cardboard tray. The cardboard container has a proximal end, a distal end, and a first wall extending between the proximal and distal ends, the cardboard container further having a first recess in the first wall, the cardboard container further having a first protrusion on the first wall, the first protrusion extending inwardly from the first wall, the first protrusion positioned proximal of the first recess. The cardboard tray has a first wall and a first resilient member, the first resilient member being a tab, the tab having at least one of a shape or a position selected such that the tab cannot extend into the first recess when the package is in a closed position, the tab further shaped and positioned to engage the first protrusion in the cardboard container, whereby the cardboard tray is maintained in the closed position.



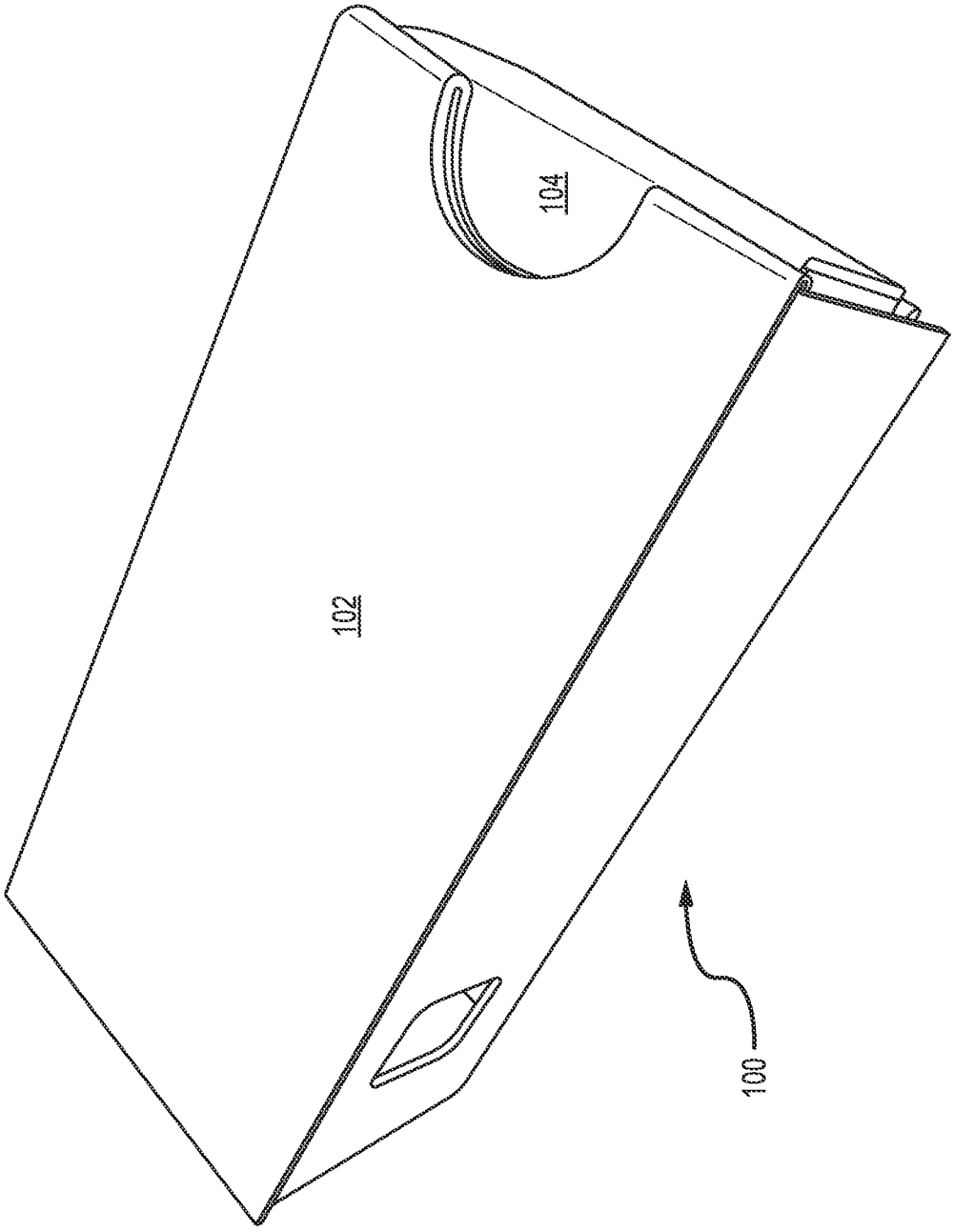


FIG. 1

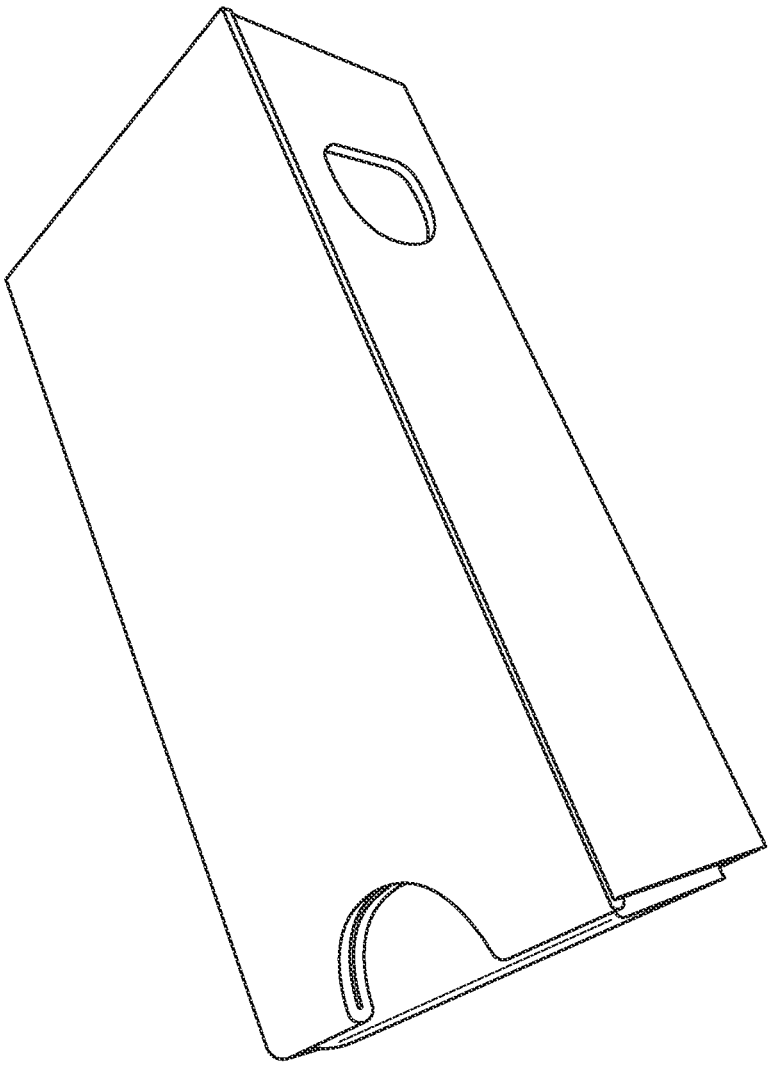


FIG. 2

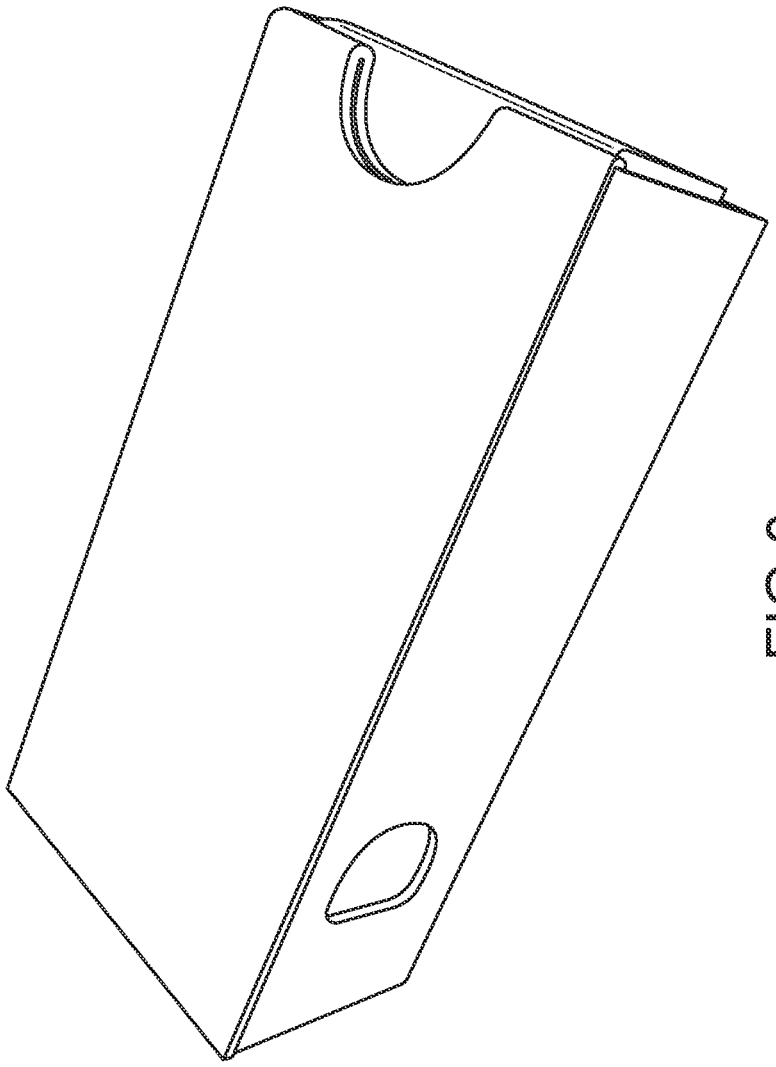


FIG.3

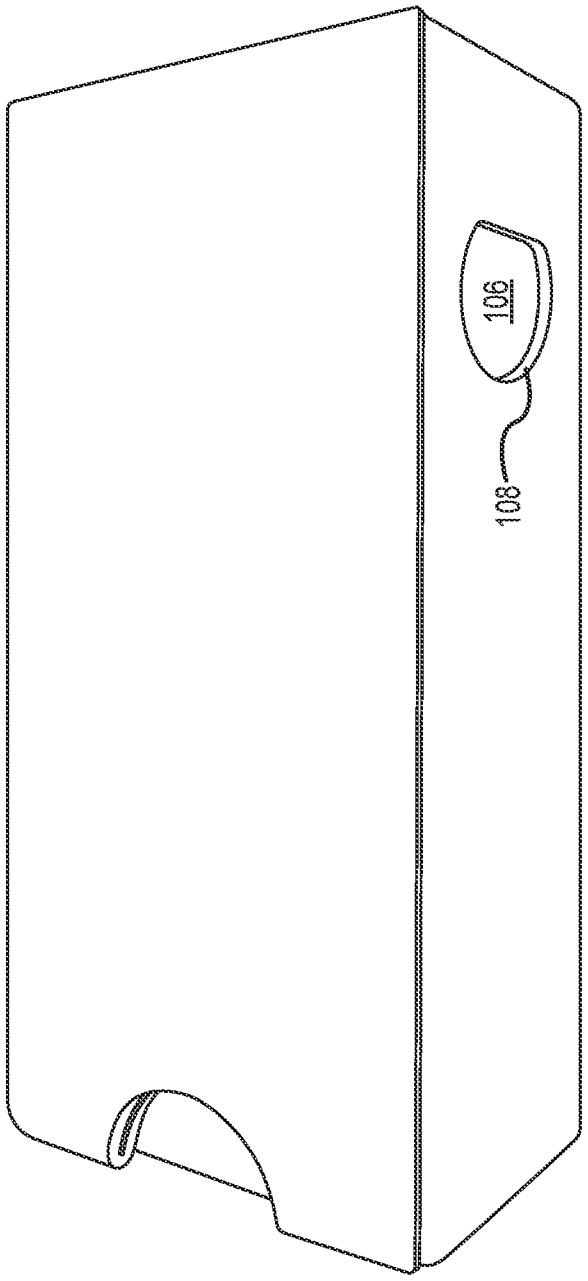


FIG.4

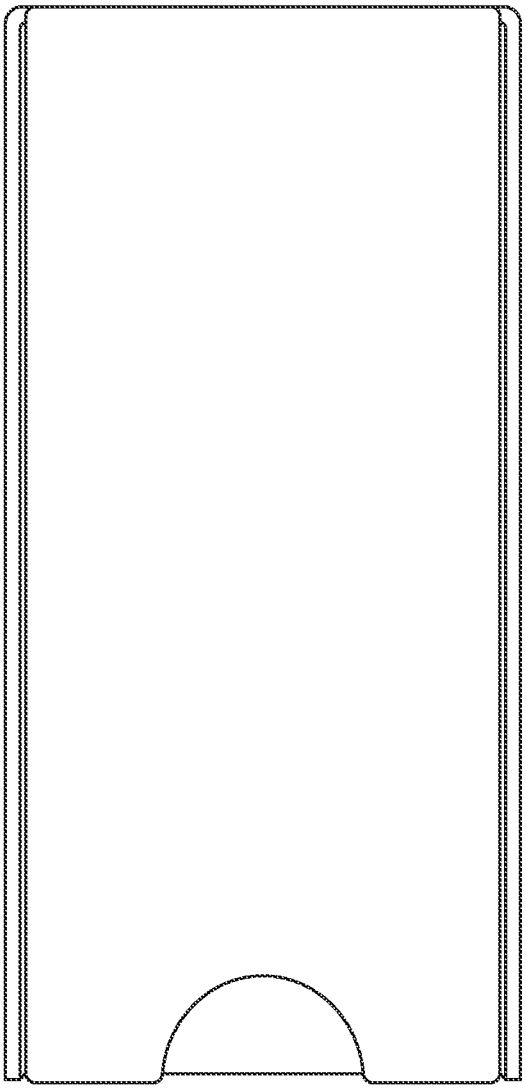


FIG.5

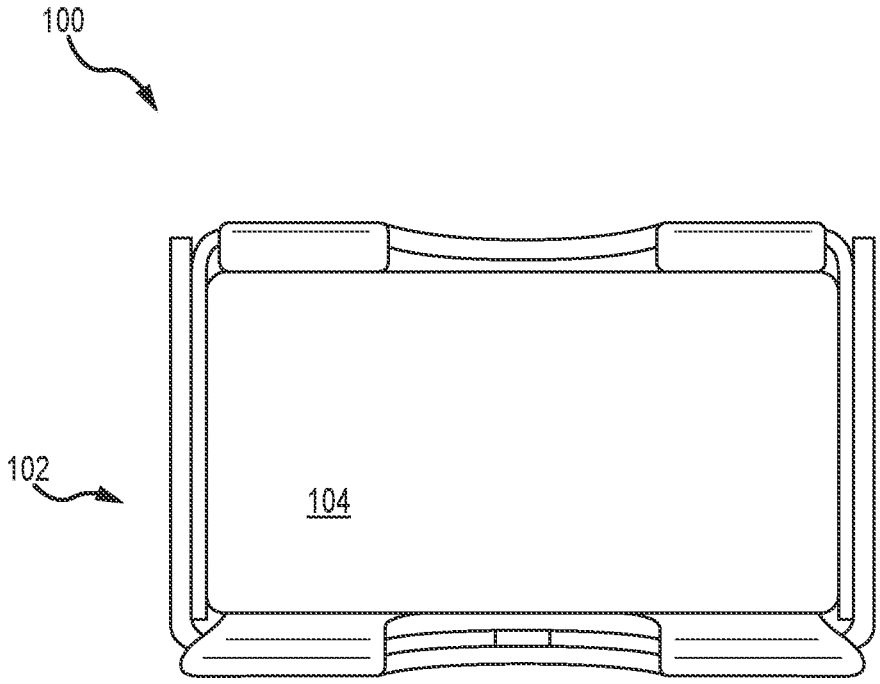


FIG.6

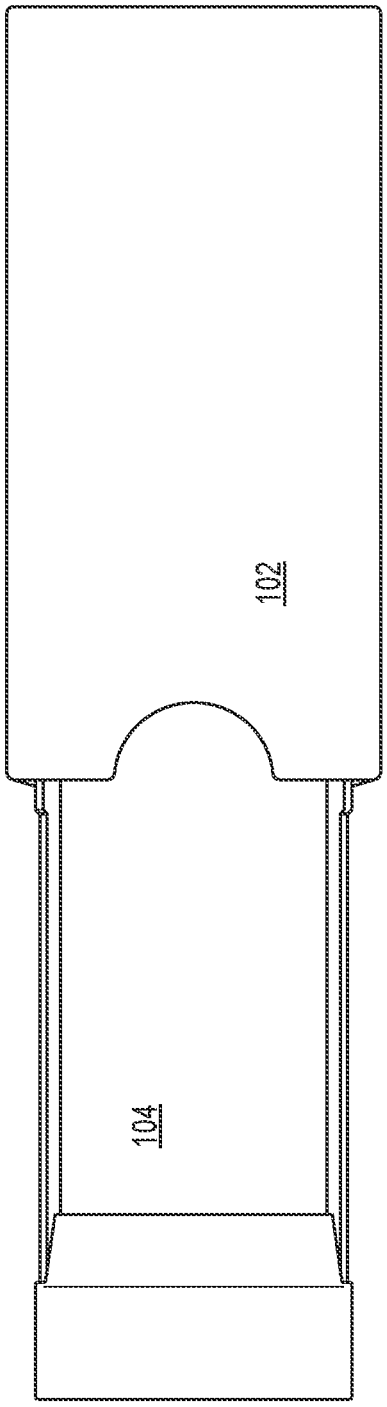


FIG.7

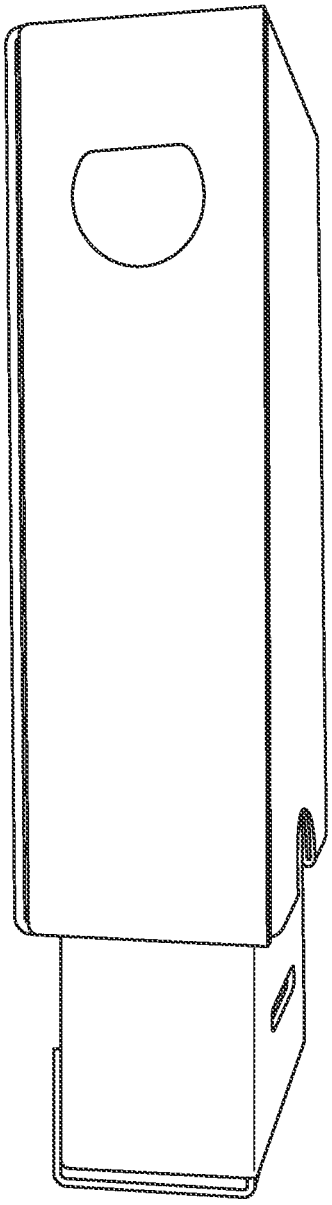


FIG. 8

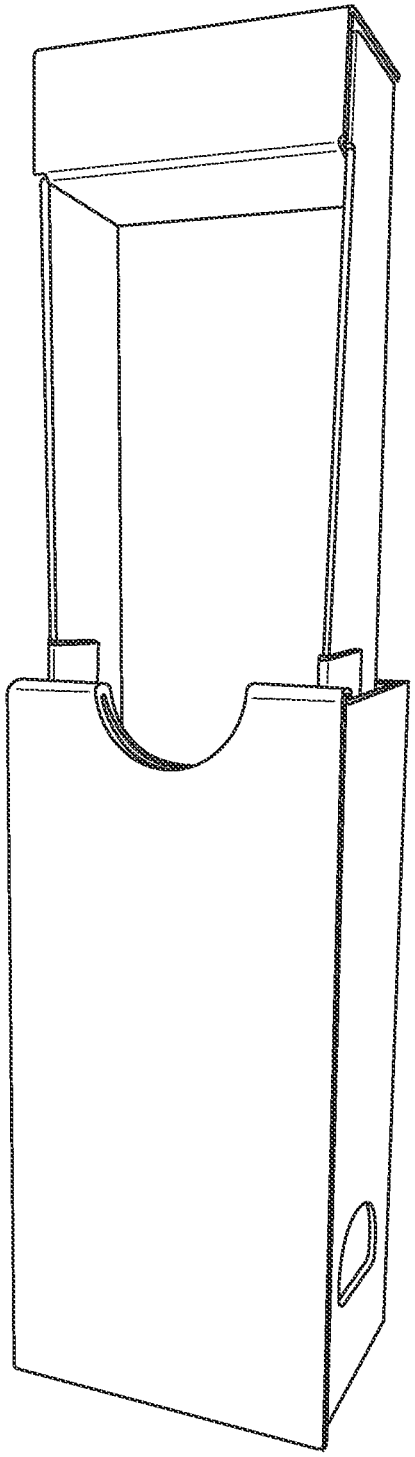


FIG. 9

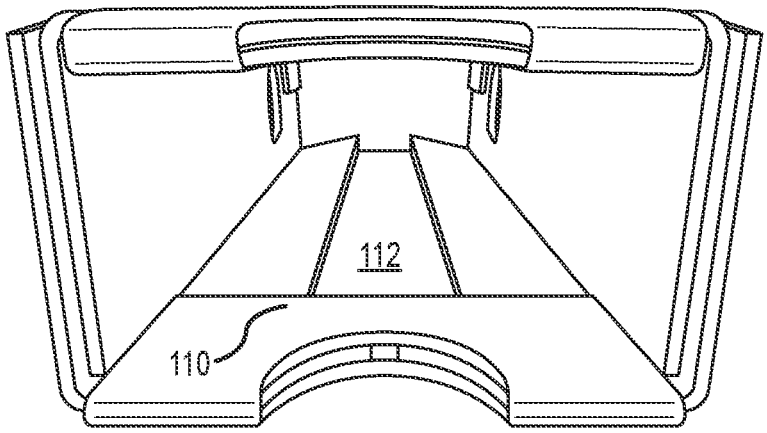


FIG. 10

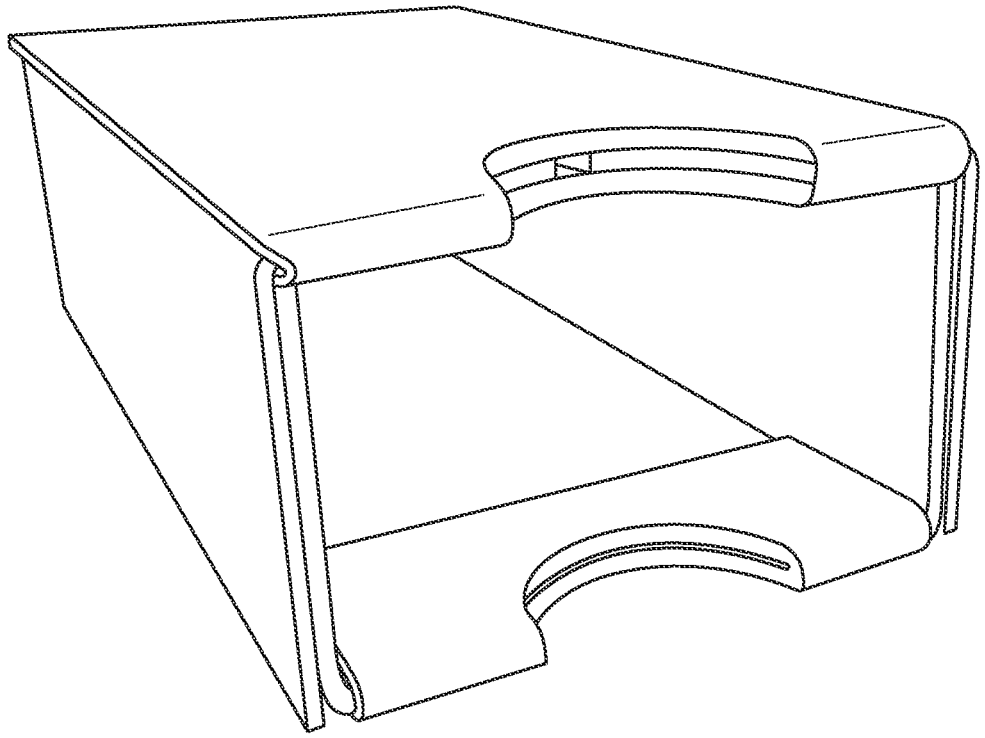


FIG. 11

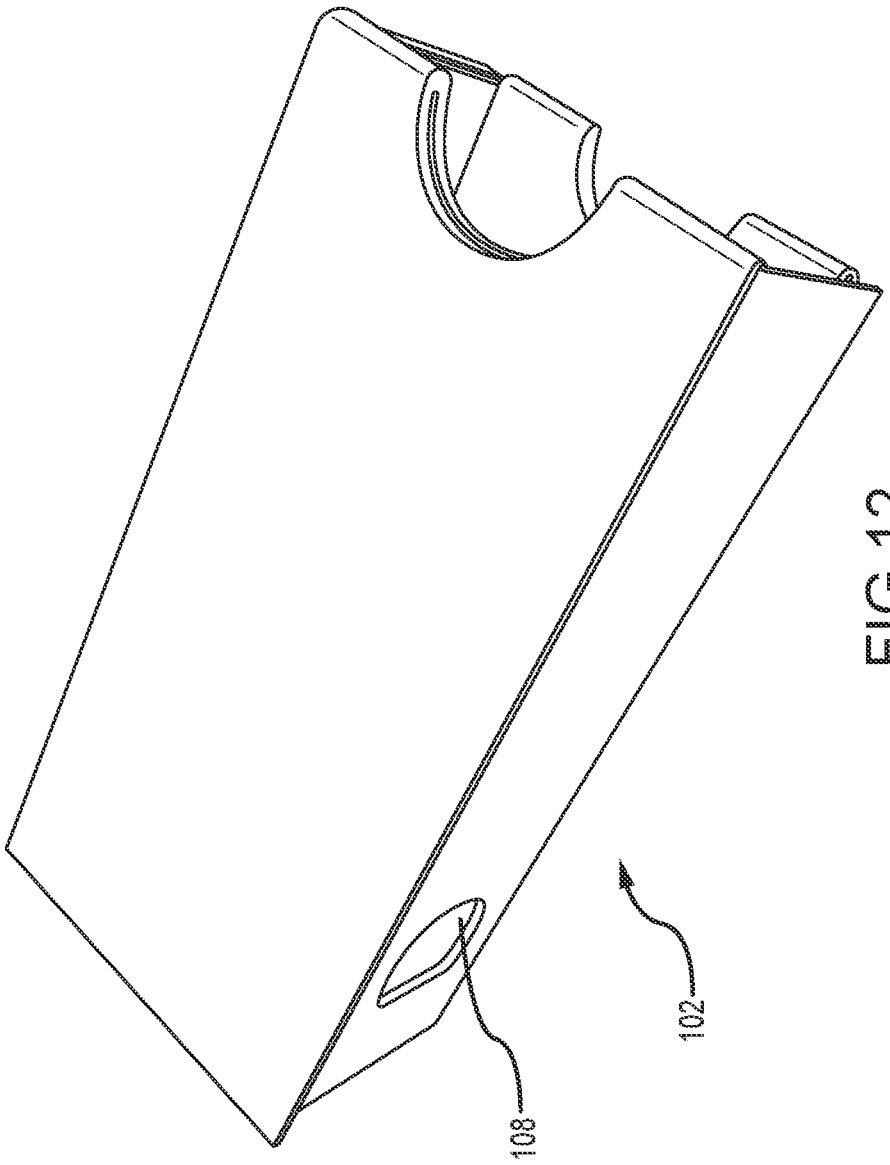


FIG. 12

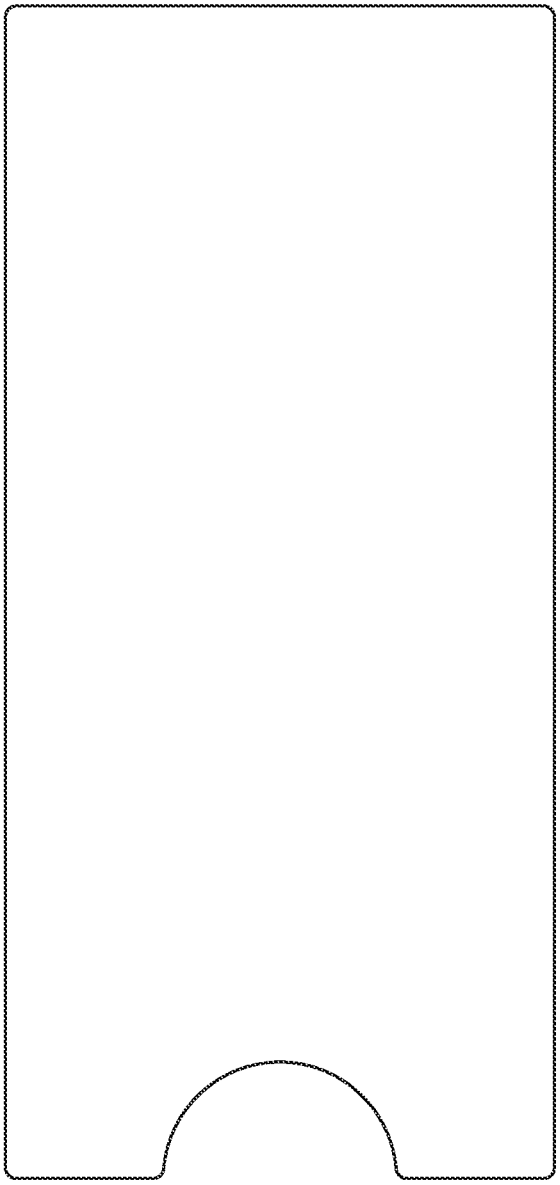


FIG.13

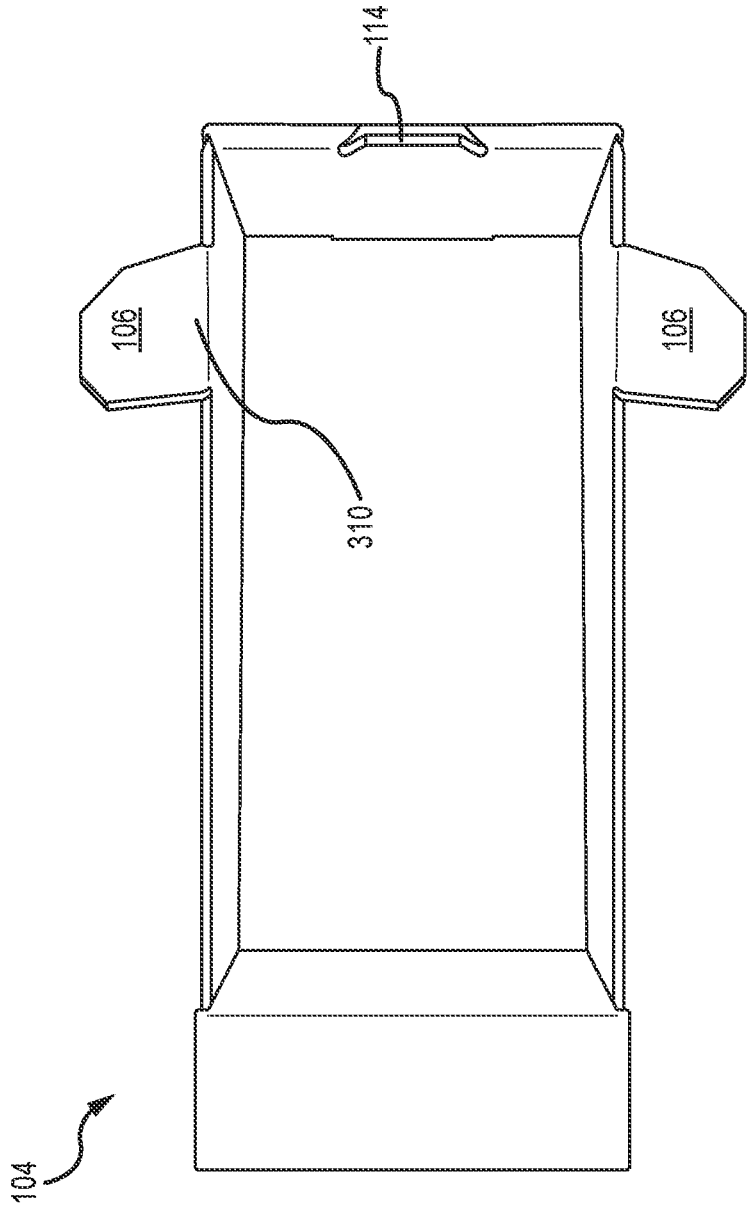


FIG. 14

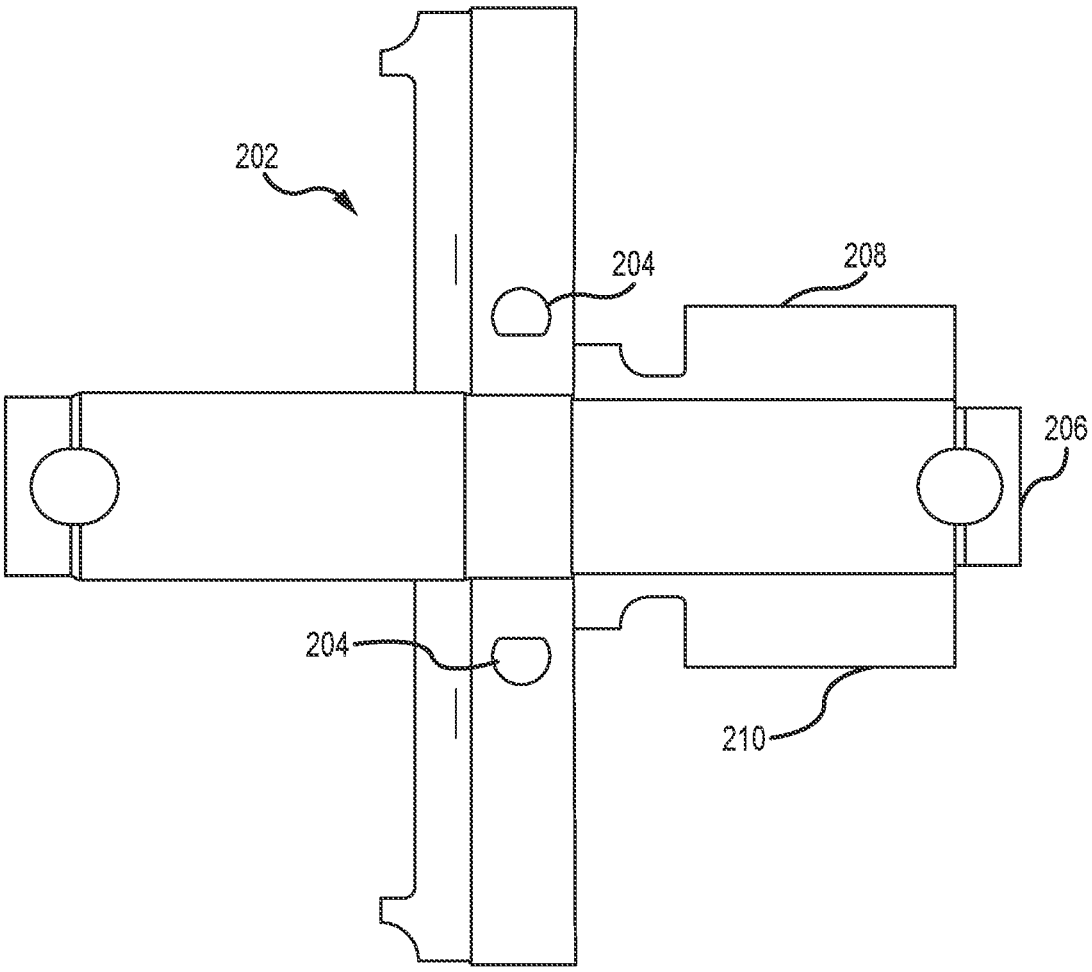


FIG.15

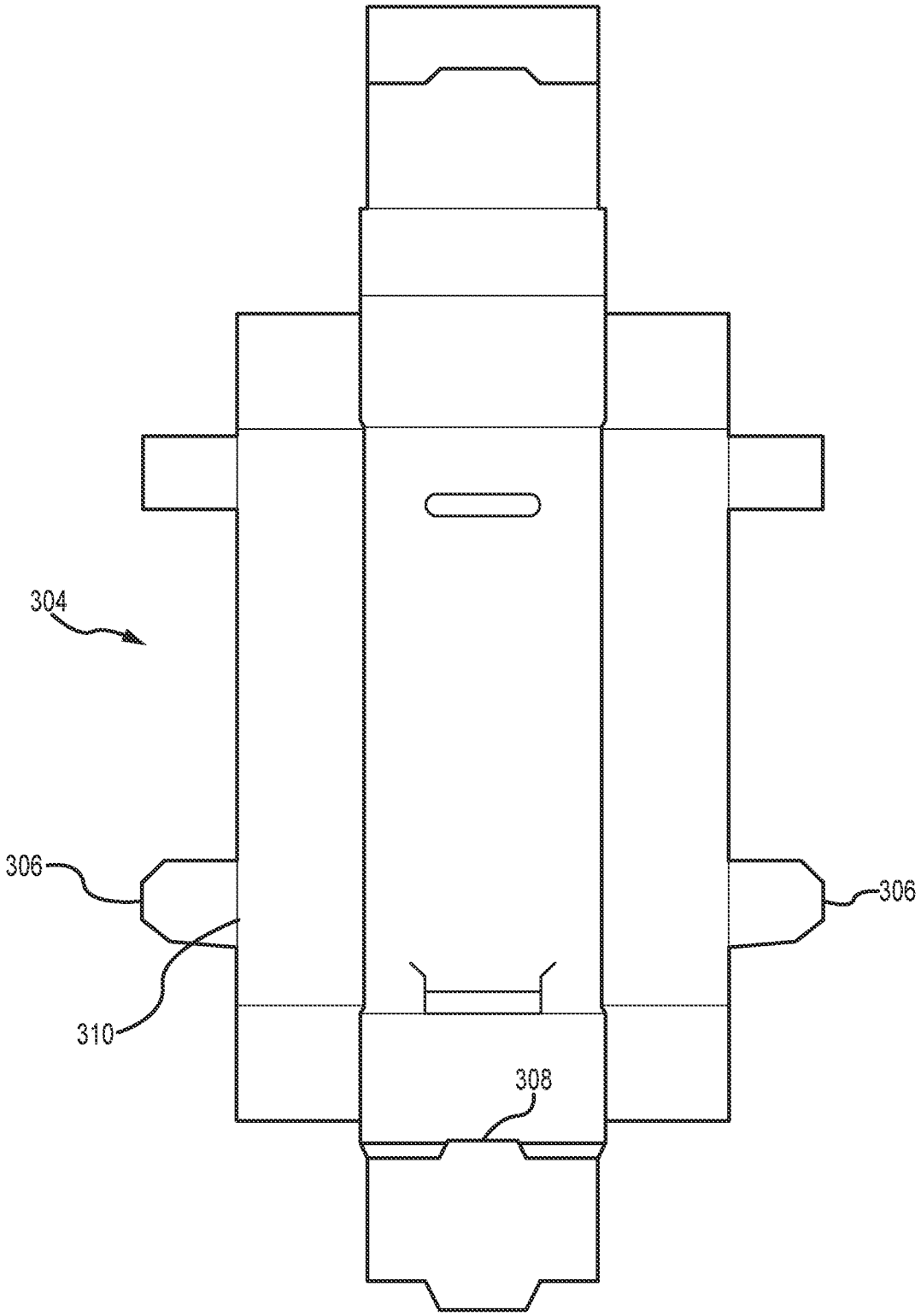


FIG.16

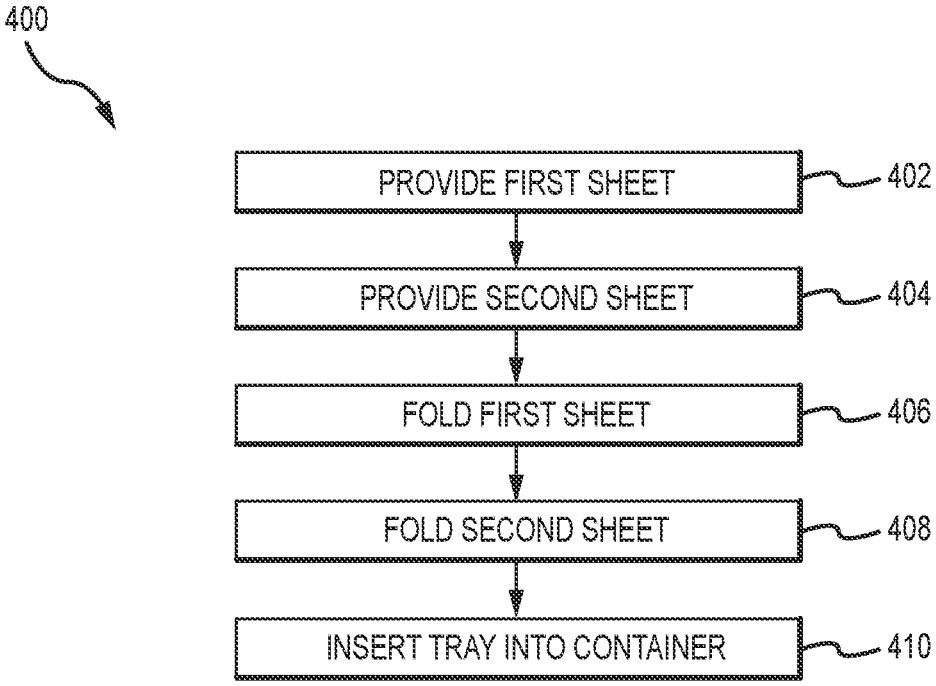

400
PROVIDE FIRST SHEET
402
PROVIDE SECOND SHEET
404
FOLD FIRST SHEET
406
FOLD SECOND SHEET
408
INSERT TRAY INTO CONTAINER
410

FIG.17

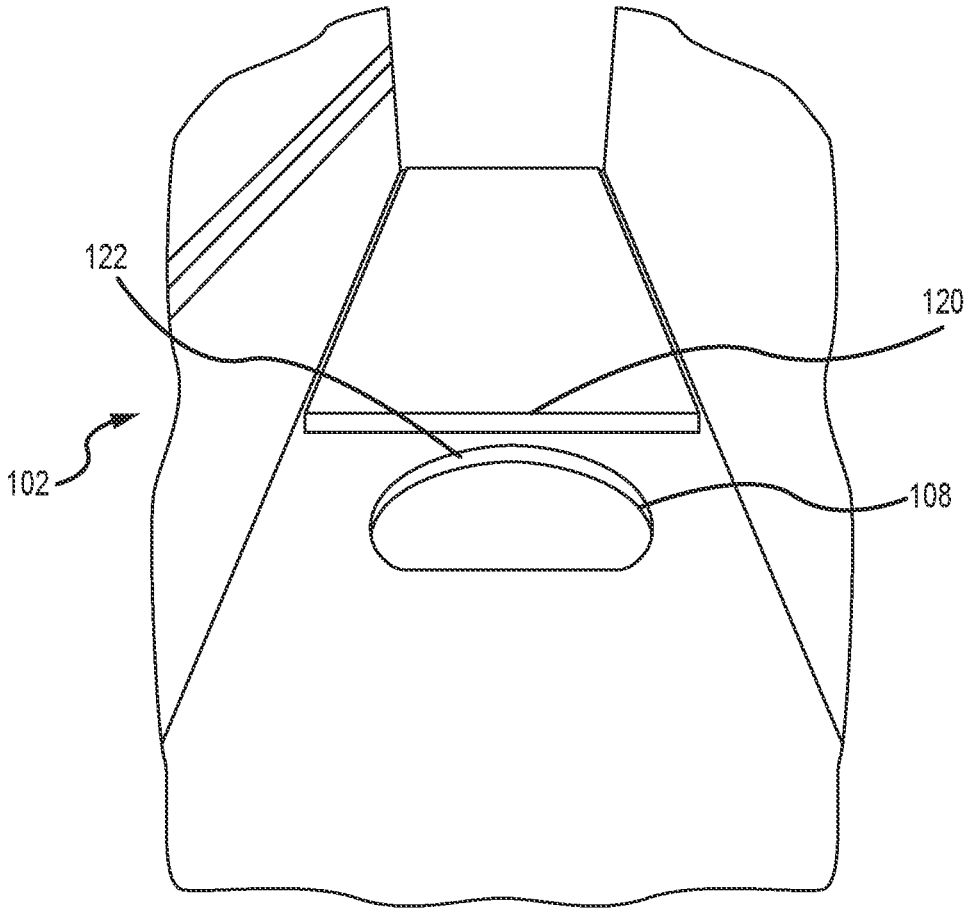


FIG.18

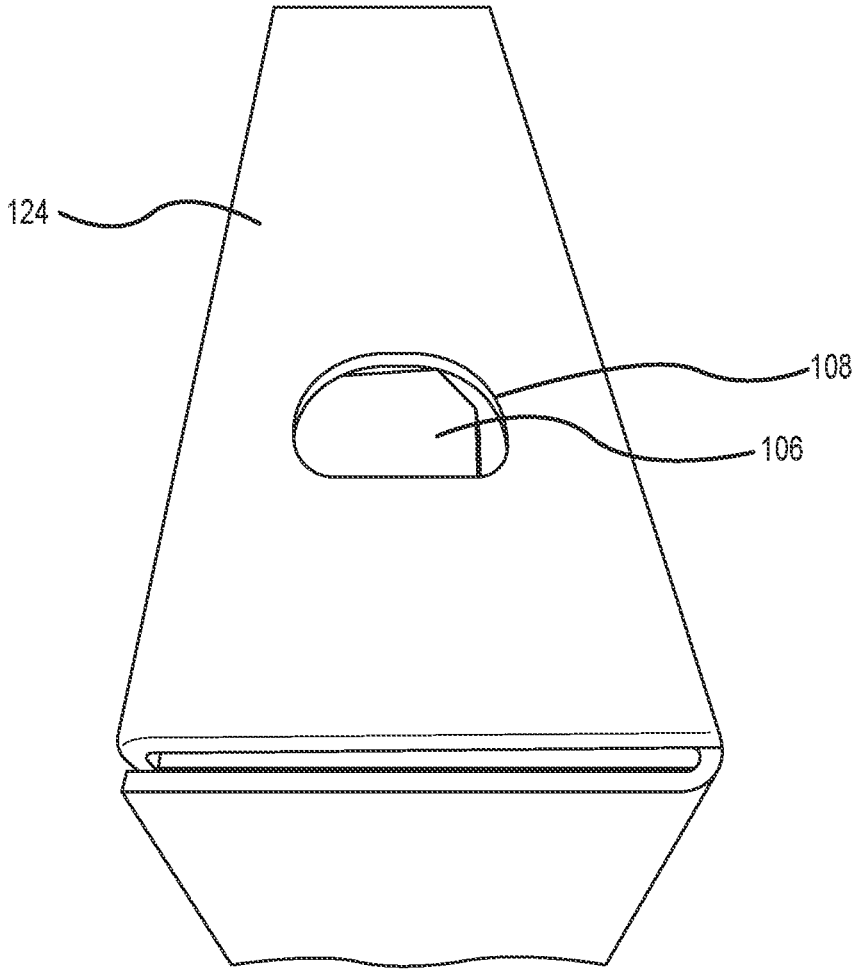


FIG.19

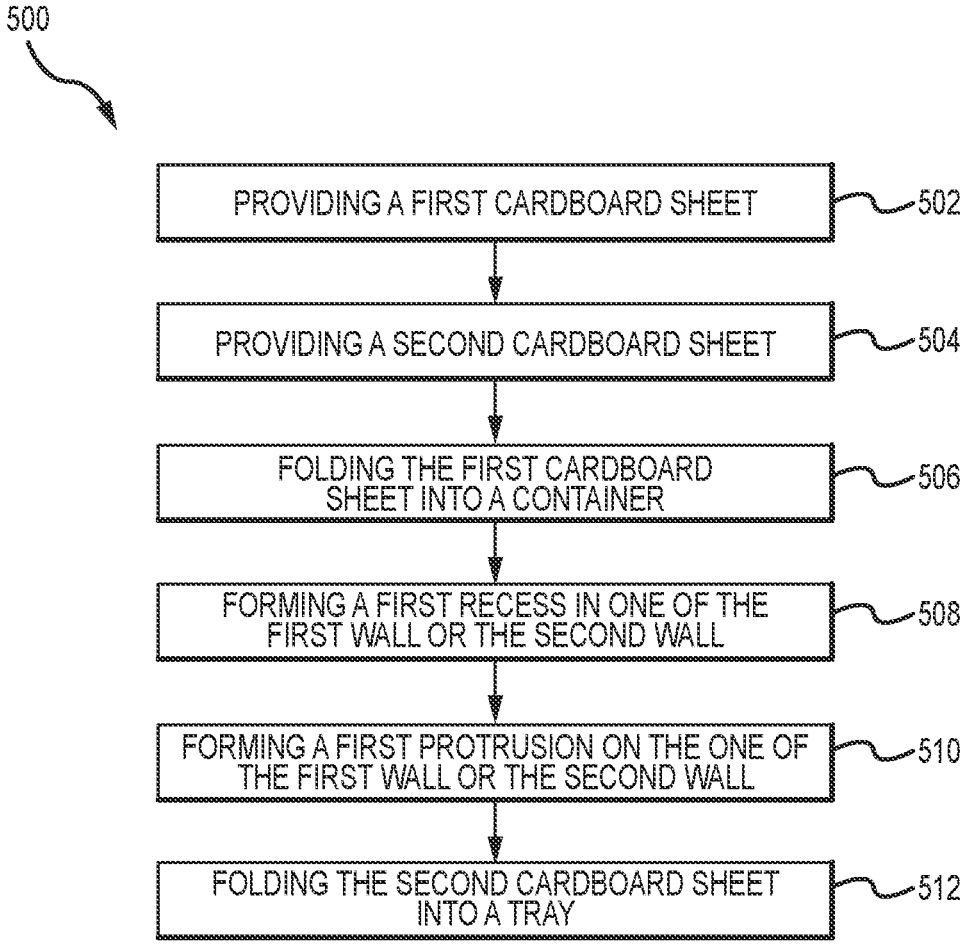

500
PROVIDING A FIRST CARDBOARD SHEET
502
PROVIDING A SECOND CARDBOARD SHEET
504
FOLDING THE FIRST CARDBOARD SHEET INTO A CONTAINER
506
FORMING A FIRST RECESS IN ONE OF THE FIRST WALL OR THE SECOND WALL
508
FORMING A FIRST PROTRUSION ON THE ONE OF THE FIRST WALL OR THE SECOND WALL
510
FOLDING THE SECOND CARDBOARD SHEET INTO A TRAY
512

FIG.20

CHILD-RESISTANT SENIOR-FRIENDLY PACKAGING

CLAIM OF PRIORITY

[0001] This application is a continuation of U.S. patent application Ser. No. 16/144,784, filed on Aug. 28, 2018 and entitled "Child-resistant Senior-friendly Packaging." This application claims priority to U.S. Prov. Appln. No. 62/552,801, filed on Aug. 31, 2017 and entitled "Child-Resistant Senior-friendly Packaging." This application claims priority to U.S. Prov. Appln. No. 62/595,720, filed on Dec. 7, 2017 and entitled "Child-Resistant Senior-friendly Packaging." The disclosures of all priority documents are incorporated herein by reference for all proper purposes.

FIELD

[0002] The present invention relates generally to child-resistant and senior-friendly packaging.

BACKGROUND

[0003] There is a need in the art for product packaging that is inexpensive, resistant to opening by children, and yet easy for seniors to use and open.

SUMMARY

[0004] An exemplary cardboard package has a cardboard container and a cardboard tray. The cardboard container has a proximal end, a distal end, and a first wall extending between the proximal and distal ends. The cardboard container further has a first recess in the first wall. The cardboard container further has a first protrusion on the first wall, the first protrusion extending inwardly from the first wall, the first protrusion positioned proximal of the first recess. The cardboard tray has a first wall and a first resilient member, the first resilient member being a tab, the tab having at least one of a shape or a position selected such that the tab cannot extend into the first recess when the package is in a closed position, the tab further shaped and positioned to engage the first protrusion in the cardboard container, whereby the cardboard tray is maintained in the closed position.

[0005] An exemplary method of making a cardboard package includes providing a first cardboard sheet and providing a second cardboard sheet. The method includes folding the first cardboard sheet into a container, the container having a proximal end, a distal end, and a first wall extending between the proximal and distal ends. The method includes forming a first recess in the first wall and providing a first protrusion on the first wall, the first protrusion extending inwardly from the first wall, the first protrusion positioned proximal of the first recess. The method includes folding the second cardboard sheet into a tray, the tray having a first resilient member a first wall, the first resilient member being a tab formed out of the second cardboard sheet, the tab having at least one of a shape or a position selected such that the tab cannot extend into the first recess when the package is in a closed position. The tab is further shaped and positioned to engage the first protrusion, whereby the tray is maintained in the closed position.

[0006] The exemplary package and method are further described herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIGS. **1-20** illustrate various views of child-resistant senior-friendly packaging and components therefor.

DETAILED DESCRIPTION

[0008] Those skilled in the art will recognize that, for packaging to be considered child-resistant, regulatory guidelines require multiple points of engagement or actuation, and/or a demonstration that a child cannot open the packaging within a certain period of time. However, a challenge is to provide a child-resistant package that is also senior-friendly, which presents an opposing requirement—ease of opening, particularly for those with weakened hands or fingers and/or those with poor motor control.

[0009] The Applicants have invented a package **100** and method, as illustrated in FIGS. **1-20**, that is both child-resistant (e.g. provides barriers to opening) and senior-friendly (e.g. provides ease of opening).

[0010] The package **100** may include a container **102** and a tray **104**. The tray **104** may be slidable relative to the container **102**. The tray **104** and/or the container **102** may have one or more resilient members **106** (see e.g. FIG. **14**) for selectively engaging one or more recesses **108** (see e.g. FIGS. **4**, **12**) in the other one of the tray **104** or container **102**. As illustrated in FIGS. **4**, **12**, and **14**, the tray **104** may include a plurality of resilient members **106** for engaging a plurality of recesses **108** in the container. The resilient members **106** may be opposing resilient members **106**, and may be positioned such that a user must grasp and press the resilient members **106** at the same time, to disengage the members **106** from the recesses **108**, to slide the tray **104** relative to the container **102**.

[0011] The container **102** and/or the tray **104** may be made of cardboard. The resilient members **106** may be made of cardboard. The entire package **100** may be made of cardboard.

[0012] Continuing with reference to the FIGS. **10** and **14**, in some embodiments, the container **102** may include a flange **110** and/or a track **112**. The flange **110** may be adapted to engage a tab **114** in the tray **104** so as to prevent unintentional removal of the tray **104** from the container **102**. Similarly, the track **112** may be adapted to engage a tab **114** in the tray **104** so as to limit movement of the tray **104** to substantially linear motion relative to the container **102**.

[0013] With reference now to FIG. **15**, in some embodiments, a first sheet **202** may be provided to make a container, such as the container **102** illustrated in FIGS. **1-14**. The first sheet **202** may be made of cardboard or another material that is formable and is adapted to at least temporarily retain a shape into which the sheet **202** is folded. The first sheet **202** may be shaped and adapted for folding into the shape of a container **102** such as that previously described herein. The first sheet **202** have a plurality of recesses **204** formed therein, the recesses **204** shaped and position to provide recesses **108** as previously described herein upon folding. The first sheet **202** may have a first tab **206** that is foldable into a position to form the flange **110** as previously described herein. The first sheet **202** may have a second tab **208** and a third tab **210** shaped and foldable into a position to form the track **112** as previously described herein.

[0014] With reference now to FIG. **16**, in some embodiments, a second sheet **304** may be provided to make a tray, such as the tray **104** illustrated in FIGS. **1-14**. The second

sheet **304** may include a first tab **308** formed therein to engage the flange **110** previously described herein. The second sheet **304** may include second and third tabs **306** shaped and positioned to form resilient members upon folding into shape. In some embodiments, at least a portion **310** of the second sheet **304** may be made of a cardboard that is at least 0.2 centimeters thick. The resilient member(s) may be formed by folding at the 0.2 centimeter thick portion. The cardboard may be corrugated. The cardboard may be double corrugated. The second and third tabs **306** may be shaped and positioned to engage the recesses **204**, **108** previously described herein.

[0015] A cardboard package as described herein may include a container formed from a first cardboard sheet, the container having a proximal end, a distal end, a first wall extending between the proximal and distal ends, and a second wall opposing the first wall and extending between the proximal and distal ends, and a first recess in one of the first wall or the second wall.

[0016] As illustrated in FIG. **18** and FIG. **19**, the container may have a first protrusion **120** extending inwardly from the one of the first wall or the second wall, the first protrusion positioned proximal of the first recess **108**. The first resilient member **106** may engage the protrusion **120** and/or the interior surface **122** of the wall instead of the recess **108**. Those skilled in the art will recognize that configuring the package **100** in this manner prevents the resilient member **106** from extending completely through the recess **108**, with the advantage that children cannot easily tear the resilient member(s) **106** off the tray. This advantage is most clearly seen in FIG. **19**.

[0017] The package may have a tray formed from a second cardboard sheet, the tray having a first resilient member in one of a first wall or a second wall, the first resilient member shaped and positioned to removably engage the first protrusion in the container, whereby the tray is maintained in a closed position.

[0018] The first resilient member **106** may be disengageable from the first protrusion **120** in response to an inward force applied to the first resilient member through the first recess.

[0019] The first resilient member may be a cardboard tab folded from the second cardboard sheet.

[0020] The first protrusion may include a cardboard strip coupled to an interior surface **122** of the one of the first wall or the second wall. The cardboard strip may be folded from the cardboard sheet or may be a separate strip coupled to the interior surface **122**.

[0021] The first resilient member may be shaped and positioned to engage an interior surface of the one of the first wall or the second wall when the tray is in the closed position, whereby the first resilient member does not protrude beyond an outward surface **124** of the one of the first wall or the second wall.

[0022] A cardboard package as described herein may include a container formed from a first cardboard sheet, the container having a first recess in a first wall and a second recess in a second wall opposing the first wall. The package may also have a tray formed from a second cardboard sheet, the tray having a first resilient member in a first wall and a second resilient member in a second wall opposing the first wall, the first and second resilient members shaped and positioned to removably engage the first and second recesses in the container.

[0023] The container may include a flange, and the tray may have a tab, the tab shaped and positioned to engage the flange to prevent unintentional removal of the tray from the container.

[0024] The first and second resilient members may include cardboard tabs folded from the second cardboard sheet.

[0025] The container comprises a track, and the tray may have a tab, wherein the track is shaped and positioned to engage the tab and limit motion of the tray to substantially linear motion relative to the container.

[0026] Turning now to FIG. **17**, a method **400** of making a package is described. The method **400** may include providing **402** a first sheet. The first sheet may have the features of the first sheet **202** previously described herein.

[0027] The method **400** may include providing **404** a second sheet. The second sheet may have the features of the second sheet **304** previously described herein.

[0028] The method **400** may include folding **406** the first sheet into a container, such as the container **102** previously described herein.

[0029] The method **400** may include folding **408** the second sheet into a tray, such as the tray **104** previously described herein.

[0030] The method **400** may include inserting **410** the try into the container to form a child-resistant senior-friendly package, such as the package previously described herein.

[0031] A method of making a package may include providing a first cardboard sheet; providing a second cardboard sheet; folding the first cardboard sheet into a container, the container having a first recess in a first wall and a second recess in a second wall opposing the first wall; and folding the second cardboard sheet into a tray, the tray having a first resilient member in a first wall and a second resilient member in a second wall opposing the first wall, the first and second resilient members shaped and positioned to removably engage the first and second recesses in the container.

[0032] Folding the first cardboard sheet may include forming a flange. Folding the second cardboard sheet may include forming a tab, the tab shaped and positioned to engage the flange to prevent unintentional removal of the tray from the container.

[0033] The method may include sliding the tray into the container.

[0034] Folding the second cardboard sheet may include folding a plurality of tabs to form the first and second resilient members.

[0035] The method may include sliding the tray into the container and allowing the first and second resilient members to removably engage the first and second recesses.

[0036] Folding the first cardboard sheet may include forming a track. Folding the second cardboard sheet may include forming a tab; wherein the track is shaped and positioned to engage the tab and limit motion of the tray to substantially linear motion relative to the container.

[0037] Turning now to FIG. **20**, a method **500** of making a package is described. The method **500** includes providing **502** a first cardboard sheet and providing **504** a second cardboard sheet. The method **500** includes folding **506** the first cardboard sheet into a container, the container having a proximal end, a distal end, a first wall extending between the proximal and distal ends, and a second wall opposing the first wall and extending between the proximal and distal ends. The method includes forming **508** a first recess in one of the first wall or the second wall. The method **500** includes

forming **510** a first protrusion on the one of the first wall or the second wall, the first protrusion extending inwardly from the one of the first wall or the second wall towards the other one of the first wall or the second wall, the first protrusion position proximal of the first recess. The method **500** includes folding **512** the second cardboard sheet into a tray, the tray having a first resilient member in one of a first wall or a second wall, the first resilient member shaped and positioned to removably engage the first protrusion in the container, whereby the tray is maintained in a closed position.

[0038] The first resilient member may be disengageable from the first protrusion in response to an inward force applied to the first resilient member through the first recess.

[0039] The method **500** may include folding the second cardboard sheet comprises folding a cardboard tab in the second cardboard sheet to form the first resilient member.

[0040] The method **500** may include folding the second cardboard sheet comprises folding a plurality of tabs to form the first resilient member and a second resilient member.

[0041] The method **500** may include sliding the tray into the container and allowing the first resilient member to removably engage the first protrusion.

[0042] The method **500** may include folding the first cardboard sheet to form a track; and folding the second cardboard sheet further to form a tab, wherein the track is shaped and positioned to engage the tab and limit motion of the tray to substantially linear motion relative to the container.

[0043] The method **500** may include coupling a cardboard strip to an interior surface of the one of the first wall or the second wall to form the first protrusion. The strip may be a folded portion of the cardboard sheet or a separate component.

[0044] The method may include shaping and positioning the first resilient member such that the first resilient member is shaped and positioned to engage an interior surface of the one of the first wall or the second wall when the tray is in the closed position, whereby the first resilient member does not protrude beyond an outward surface of the one of the first wall or the second wall.

[0045] At least a portion of the second cardboard sheet may be corrugated and have a thickness of at least 0.2 centimeters, and the method may include folding the second cardboard sheet at the portion having the thickness of at least 0.2 centimeters to form the first resilient member.

[0046] A method of using a cardboard package is disclosed herein.

[0047] A method of using a cardboard package may include providing a cardboard package having a container and a tray, and inserting a finger into a first recess in a first wall of the container; inserting a thumb into a second recess in a second wall opposing the first wall of the container. The method may also include using the finger and the thumb to compress a first resilient member in a first wall of the tray and a second resilient member in a second wall opposing the first wall of the tray. The method may also include disengaging the first and second resilient members from the first and second recesses in the container. Compressing may cause the disengaging.

[0048] The method may also include pulling the tray partially out of the container and causing a tab in the tray to engage a flange in the container to prevent unintentional removal of the tray from the container.

[0049] The first and second resilient members may include cardboard tabs folded from a cardboard sheet.

[0050] A method of using a cardboard package may include providing a cardboard package having a container and a tray, the container formed from a first cardboard sheet, the container having a proximal end, a distal end, a first wall extending between the proximal and distal ends, and a second wall opposing the first wall and extending between the proximal and distal ends, a first recess in one of the first wall or the second wall, and a first protrusion extending inwardly from the one of the first wall or the second wall, the first protrusion positioned proximal of the first recess, the tray formed from a second cardboard sheet, the tray having a first resilient member in one of a first wall or a second wall, the first resilient member shaped and positioned to removably engage the first protrusion in the container, whereby the tray is maintained in a closed position. The method may include compressing the first resilient member inwardly towards the other one of the first wall or the second wall, whereby the first resilient member is disengaged from the first protrusion.

[0051] The method of using may include pulling the tray partially out of the container and causing a tab in the tray to engage a flange in the container to prevent unintentional removal of the tray from the container.

[0052] In some embodiments, at least a portion of the second cardboard sheet is corrugated and has a thickness of at least 0.2 centimeters, and the second cardboard sheet is folded at the portion having the thickness of at least 0.2 centimeters to form the first resilient member.

[0053] The method of using may include disengaging the first resilient member from the interior surface of the one of the first wall or the second wall.

[0054] Embodiments of the invention can be embodied in a variety of ways. In addition, each of the various elements of the invention and claims may also be achieved in a variety of manners. This disclosure should be understood to encompass each such variation, be it a variation of an embodiment of any apparatus embodiment, a method or process embodiment, or even merely a variation of any element of these. Particularly, it should be understood that as the disclosure relates to elements of the invention, the words for each element may be expressed by equivalent apparatus terms or method terms—even if only the function or result is the same. As but one example, it should be understood that all action may be expressed as a means for taking that action or as an element which causes that action. Similarly, each physical element disclosed should be understood to encompass a disclosure of the action which that physical element facilitates. Regarding this last aspect, the disclosure of a "resilient member" should be understood to encompass disclosure of the act of "resilient engaging"—whether explicitly discussed or not—and, conversely, were there only disclosure of the act of "resilient engaging", such a disclosure should be understood to encompass disclosure of a "resilient mechanism". Such changes and alternative terms are to be understood to be explicitly included in the description.

[0055] In conclusion, the present invention provides, among other things, a system and method for using a child-resistant senior-friendly package. Those skilled in the art can readily recognize that numerous variations and substitutions may be made in the invention, its use and its configuration to achieve substantially the same results as

achieved by the embodiments described herein. Accordingly, there is no intention to limit the invention to the disclosed exemplary forms. Many variations, modifications and alternative constructions fall within the scope and spirit of the disclosed invention as expressed in the claims.

What is claimed is:

1. A cardboard package, comprising:

a cardboard container, the cardboard container having a proximal end, a distal end, and a first wall extending between the proximal and distal ends, the cardboard container further having a first recess in the first wall, the cardboard container further having a first protrusion on the first wall, the first protrusion extending inwardly from the first wall, the first protrusion positioned proximal of the first recess; and

a cardboard tray, the cardboard tray having a first wall and a first resilient member, the first resilient member being a tab, the tab having at least one of a shape or a position selected such that the tab cannot extend into the first recess when the package is in a closed position, the tab further shaped and positioned to engage the first protrusion in the cardboard container, whereby the cardboard tray is maintained in the closed position.

2. The package of claim **1**, wherein:

the first resilient member is disengageable from the first protrusion in response to an inward force applied to the first resilient member through the first recess.

3. The package of claim **1**, wherein:

the first resilient member is shaped and positioned to engage an interior surface of the first wall and the first protrusion, whereby the cardboard tray is maintained in the closed position.

4. The package of claim **1**, wherein:

folding the second cardboard sheet comprises forming the first resilient member and a second resilient member, the second resilient member being a second tab.

5. The package of claim **1**, wherein:

the cardboard container further comprises a track; and

the cardboard tray further comprises a second tab; wherein the track is shaped and positioned to engage the second tab and limit motion of the cardboard tray to substantially linear motion relative to the cardboard container.

6. The package of claim **1**, wherein:

at least a portion of the cardboard tray is corrugated and has a thickness of at least 0.2 centimeters; and

the cardboard tray is formed by folding a cardboard sheet at the portion having the thickness of at least 0.2 centimeters to form the first resilient member.

7. A method of making a cardboard package, the method comprising:

providing a first cardboard sheet;

providing a second cardboard sheet;

folding the first cardboard sheet into a container, the container having a proximal end, a distal end, and a first wall extending between the proximal and distal ends;

forming a first recess in the first wall;

providing a first protrusion on the first wall, the first protrusion extending inwardly from the first wall, the first protrusion positioned proximal of the first recess; and

folding the second cardboard sheet into a tray, the tray having a first resilient member a first wall, the first resilient member being a tab formed out of the second cardboard sheet, the tab having at least one of a shape or a position selected such that the tab cannot extend into the first recess when the package is in a closed position,

the tab further shaped and positioned to engage the first protrusion, whereby the tray is maintained in the closed position.

8. The method of claim **1**, wherein:

the first resilient member is disengageable from the first protrusion in response to an inward force applied to the first resilient member through the first recess.

9. The method of claim **1**, wherein:

the first resilient member is shaped and positioned to engage an interior surface of the first wall and the first protrusion, whereby the tray is maintained in the closed position.

10. The method of claim **1**, wherein:

folding the second cardboard sheet comprises forming the first resilient member and a second resilient member, the second resilient member being a second tab.

11. The method of claim **1**, further comprising:

sliding the tray into the container and allowing the first resilient member to removably engage the first protrusion.

12. The method of claim **1**, wherein:

folding the first cardboard sheet further comprises forming a track; and

folding the second cardboard sheet further comprises forming a second tab; wherein

the track is shaped and positioned to engage the second tab and limit motion of the tray to substantially linear motion relative to the container.

13. The method of claim **1**, further comprising:

coupling a cardboard strip to an interior surface of the first wall to form the first protrusion.

14. The method of claim **1**, wherein:

at least a portion of the second cardboard sheet is corrugated and has a thickness of at least 0.2 centimeters, the method further comprising:

folding the second cardboard sheet at the portion having the thickness of at least 0.2 centimeters to form the first resilient member.

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