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(54) **Improved blister pack secondary package and sleeve**

(57) A lockable container includes a lockable sleeve (114) and a secondary package (10;210). The secondary package (10;210) is configured as a slideable platform that can be stored in the lockable sleeve (114). The slideable platform includes at least one receiving flange (44a,44b) to hold a primary package (51). The lockable sleeve (114) and the slideable platform (210;10) can

each have one or more of the engaging mechanism (129) and a receiving mechanism (22), with reciprocal engaging mechanisms (154) and/or receiving mechanisms being included at the other elements. A release button (120) can be included in the locking assembly to disengage the engaging mechanism (129) from the receiving mechanism (22).

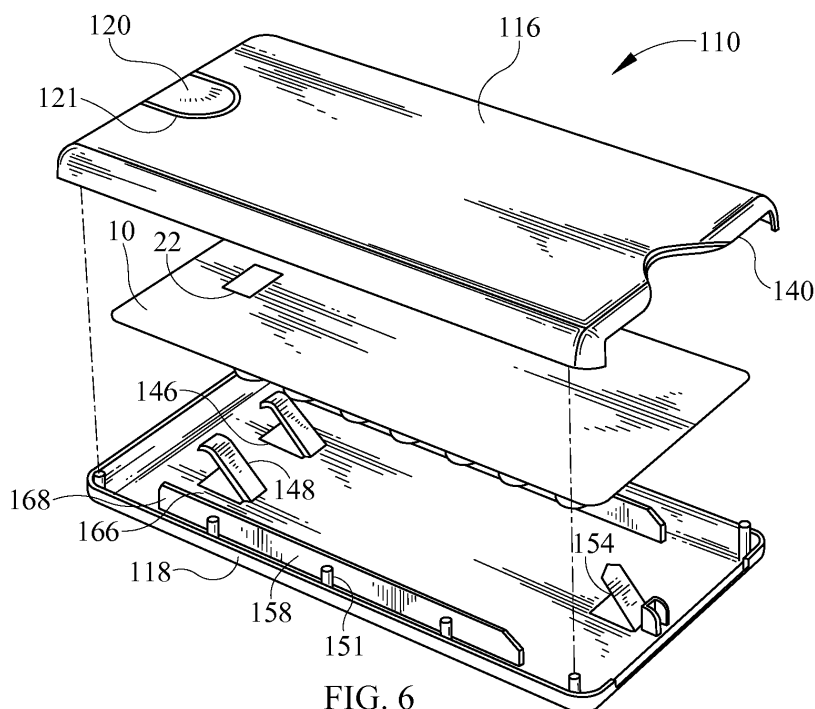


FIG. 6

Description

Technical Field

[0001] The present disclosure relates generally to child-resistant and/or lockable containers. More specifically, the present disclosure relates to an assembly and method of configuring and providing similar or mixed primary packages within a secondary package that can be stored in a lockable container.

Background

[0002] Child-resistant or lockable containers, wherein multiple movements are required to open the container, have many uses. One use for a lockable container is to control the dispensing of medicine and medicaments in the form of pills and tablets. For example, locking caps on medicine bottles are well known. The typical locking cap mechanism requires a coordinated alignment and tipping, or axial pressure, or inward radial squeezing while turning the cap to remove it from its container in order to access the medicaments.

[0003] By way of another example, medicines are packaged in convenient flat boxes, which are difficult to secure with child-resistant features. Many medicaments in the form of tablets are sold in blister packs - blisters formed on a sheet sealed by a barrier that is punctured when extracting a tablet from a blister. When a typical cardboard flat box holding one or more blister packs is opened the entire contents of the package is exposed, making all of the tablets immediately available. The dangers posed by children with access to a large quantity of tablets not intended for their consumption is self evident.

Summary of the Invention

[0004] A first aspect of the invention provides a container, comprising a sleeve comprising a plurality of walls that define a void for receiving a slideable secondary package and the slideable secondary package comprising a base panel and a top panel foldably attached to the base panel, the top panel including at least one receiving flange formed thereon, each receiving flange being configured to receive at least a portion of a primary package.

[0005] Preferably the primary package has at least one blister carrying an item, the base panel defining at least one gate, each gate corresponding to a respective blister.

[0006] Preferably, each gate either is an aperture or is defined by a perforation.

[0007] Preferably, the top panel defines a receiving aperture, the receiving aperture having an aperture perimeter, the aperture perimeter being large enough such that each gate is laterally located therewithin.

[0008] Preferably, the top panel has a pair of receiving flanges, each respective receiving flange being located on opposite sides of the receiving aperture.

[0009] Alternatively, the top panel defines a plurality

of receiving apertures, the receiving apertures each defining an aperture perimeter, the aperture perimeter being large enough such that a group of gates is laterally located therewithin, each receiving aperture having a pair of receiving flanges associated therewith, each respective receiving flange being located on opposite sides of the corresponding receiving aperture.

[0010] Alternatively, the sleeve defines a lockable container for retaining slideable secondary package.

[0011] Preferably, the sleeve comprises a detent having an engaging edge that is engageable with an aperture formed in the secondary package when the secondary package is fully inserted within the sleeve, whereby the secondary package is retainable within the sleeve to prevent outward movement thereof.

[0012] Preferably, the sleeve comprises a button that is operable to deform a portion of the secondary package away from and out of engagement with the engaging edge of the detent, thereby to allow the secondary package to be at least partially withdrawn from the sleeve.

[0013] Optionally, the sleeve comprises a detent that is engageable with an aperture formed in the secondary package when the secondary package is partially withdrawn from the sleeve, whereby the secondary package is retainable within the sleeve to prevent complete withdrawal thereof.

Brief Description of the Drawings

[0014]

FIG. 1 is a top view of an exemplary blank for forming a blister pack secondary package.

FIGs. 2 and 3 are perspective views showing a secondary package formed by the assembly of the blank of FIG. 1

FIG. 4 shows a blister pack being inserted into the secondary package of FIGs. 2 and 3.

FIG. 5 is an exploded view of a lockable container.

FIG. 6 is an exploded view of the lockable container of FIG. 5, from the opposite side.

FIG. 7 is a perspective view of the assembled lockable container of FIGs. 5 and 6.

FIG. 8 shows an alternative secondary package according to the present disclosure.

FIG. 9 shows the alternative secondary package of FIG. 8 and a lockable sleeve.

FIG. 10 shows a lockable container of the present disclosure.

Detailed Description

[0015] As required, detailed embodiments of the present disclosure are disclosed herein. It must be understood that the disclosed embodiments are merely exemplary of the disclosure that may be embodied in various and alternative forms, and combinations thereof. As used herein, the word "exemplary" is used expansively

to refer to embodiments that serve as an illustration, specimen, model or pattern. The figures are not necessarily to scale and some features may be exaggerated or minimized to show details of particular components. In other instances, well-known components, systems, materials or methods have not been described in detail in order to avoid obscuring the present disclosure. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present disclosure.

[0016] It is also contemplated that the present disclosure is not limited to the pharmaceutical-related goods referenced with the illustrated embodiments, but is applicable to any goods including small, delicate, sensitive, or portable items. Examples of such items include all manner of consumable products such as candy, food, vitamins, and the like; all manner of personal care products such as contact lens, birth control devices, smoking cessation patches, hearing aid batteries, and the like; and any item and that can fit within a lockable container. Further, the present disclosure is not limited to the blister packs referenced with the illustrated embodiments, but is applicable to any tray, card, rack, pack, pouch, and the like to which an item of any sort may be held, stored, attached, secured or otherwise associated with the item.

[0017] Further, the lockable container described herein can be configured to store and dispense items that are not packaged in a blister card but in any primary package that is then attached to a secondary package, such as a slidable platform. In such embodiments, the blister card packaging can be substituted with a tray, card, rack, pack, pouch, or the like. In general, the teaching provided herein are applicable to any structure that holds or stores an item, that provides a basis for attaching or securing an item thereto, or that is otherwise associated with an item. In describing the locking assembly, features and functions are described, though it will be appreciated that the locking assembly may not function as described unless the locking assembly is cooperatively assembled with a sleeve, an outer container, or other package component.

[0018] Referring now to the figures, wherein similar elements are designated with similar numbers, FIG. 1 illustrates an exemplary blank 10 for forming a secondary package, in this case an inner slide card configured to receive a primary package in the form of a blister pack. Further, the illustrated blanks are shown and described in terms of unitary blanks but it is contemplated that the present invention can be constructed and erected from discrete panels that are joined. As all the various embodiments of blister packs, including those with various types of backing such as paper and/or foil, and those made of various materials such as plastic, aluminum, and paper, are known to those skilled in the art, the structure or function of the blister packs referenced herein will not be further described.

[0019] In addition, the illustrated slide card is config-

ured to be releasably received by a lockable outer sleeve, such as those taught in various pending U.S. and foreign patent applications and patents related to the Shellpak™ brand family of products. Also the materials that comprise the substrate of the blank 10 can be selected from among any of the well-known materials or combinations of materials and will not be further taught herein.

[0020] Continuing with reference to FIG. 1, the illustrated secondary package 10 comprises a base panel 12 and a top panel 14 foldably attached to the base panel 12 along a fold line 16. The illustrated base panel 12 is defined by a leading edge 20 and a trailing edge 28, and includes an engaging element in the form of an engaging aperture 22. The illustrated top panel 14 including a matingly similar engaging aperture 22a, although in alternative embodiments there may be only a single engaging element on either the base panel 12 or top panel 14.

[0021] The top panel 14 further comprises a blister pack receiving aperture 30. The perimeter of the illustrated receiving aperture 30 is generally the same shape as the perimeter of the top panel 14, being defined by opposing side edges 32a, 32b, an end edge 34, and an insert edge 36. The insert edge 36 begins and terminates at opposing, outwardly turning - with respect to the void that is the receiving aperture 30 - radius cuts 38a, 38b. In the illustrated embodiment the perimeter of the receiving aperture 30 is slightly larger than the outside perimeter of a group of gates 40 located on the base panel 12. Here, as illustrated, each gate is defined by perforations and is removed before or in conjunction with removing an item from a respective blister. In other alternatives, the gates are apertures and do not further impede the removal of an item from a blister.

[0022] In erecting the illustrated blank 10 to form a slide card, the top panel 14 is connected to the base panel 12. In connecting the respective panels 12, 14 the areas on the top panel 14 between the respective side edges 32a, 32b and score lines 42a, 42b are not connected to the base panel 12, in order to create receiving flanges 44a, 44b as further described with reference to FIGs. 2-4. Here the top panel 14 is connected to the base panel 12 with two beads of cold adhesive. However, other connecting products are possible and are contemplated, including hot adhesive, epoxy, or combinations and the like, as well as mechanical connecting products such as staples, stitching, punches, rivets, or combinations and the like, as well as chemical/mechanical connecting products such as welding, single face or double face tape, or combinations and the like.

[0023] An exemplary method of folding and erecting the blank 10 to form a secondary package will now be illustrated with reference to FIGs. 2-4. Beginning with FIG. 2, the top panel 14 is folded along the fold line 16, as best shown in FIG. 3, and the top panel 14 is connected to the base panel 12 in a face-contacting orientation.

[0024] Turning now to FIG. 4, which shows a fully constructed but not yet fully erected secondary package, the reader will understand that connecting the top panel 14

to the base panel **12** creates a blister pack receiving pocket **50**, defined by the receiving flanges **42a**, **42b**, and those portions along the end edge **34** and insert edge **36** that are not attached to the base panel **12**. The insert edge **36** functions as the pocket opening **52**. FIG. 4 also shows a conventional blister pack **51**, both before and after being loaded into the fully constructed secondary package. To load the blister pack **51** into the receiving pocket **50**, the filler moves the blister pack leading flange **54** toward the pocket opening **52** in the direction of the arrow "A". More specifically, the filler slides the leading flange **54** over the insert edge **36** and under the radius cuts **38a**, **38b** to align and initiate the engaging of the blister pack side flanges **56a**, **56b** with the receiving flanges **44a**, **44b**. Once the blister pack side flanges **56a**, **56b** are correctly positioned under the radius cuts **38a**, **38b**, the filler fully inserts the blister pack **51** into the receiving pocket **50** by pushing the blister pack until the side flanges **56a**, **56b** are substantially, completely inserted within the receiving flanges **44a**, **44b** and blister pack leading edge **54** passes under the receiving aperture end edge **34**. The filler can then slide the blister pack trailing edge **58** back and under the insert edge **36**, such that the entire perimeter of the blister pack **51** is captured between the top panel **14** and base panel **12**. In various embodiments the blister packs may be loaded from the opposite end, and in various embodiments the blister pack may be further secured to the secondary package.

[0025] For some applications the constructing and filling process illustrated by FIGs 2-4 is completed by a single party at one location, such as a manufacturer/filler. For other applications, the constructing steps shown in FIGs. 2-4 are completed by one party at one location and the secondary package is then sent to a filler at another location who completes the filling steps shown in FIGs. 2-4.

[0026] Turning now to FIGs 5 and 6, there are shown exploded views of an exemplary lockable container **110**. As illustrated, the lockable container **110** holds a slideable element, for example, a secondary package **10** or "card" within a locking sleeve **114**. The locking sleeve **114** comprises a base **116** and a top **118**. A release button **120** is surrounded by a release button surround aperture **121** ("aperture"), except along a hinged **122** that connects the release button **120** to the base **116**. The inside edge of the free end **124** includes an extended rim **125**. Pushing inwardly on the free end **124**, *i.e.*, the end of the release button **120** adjacent the aperture **121**, of the release button **120** frees the card **10**, as explained in detail below. Gripping the exposed card end **126** through the recess **128** (best shown in FIG. 7) and pulling outwardly while depressing the release button **120** enables the secondary package **10** to be released and at least partially extended from the sleeve **114**.

[0027] The illustrated secondary package **10** includes blisters **130** arranged in two columns **132**. This particular arrangement permits the blisters **130** to avoid certain internal features of the illustrated embodiments when the

card **10** is translated inwardly or outwardly. The card **10** is constructed in the manner described above, and includes one or more apertures **22** for engaging internal features of the lockable container **10**. The illustrated card **10** has one aperture **22**, configured to act as both a detent receiver and a retainer receiver, which cooperatively engages the card **10** and prevents removal of the card **10** from the sleeve **114**. In the illustrated embodiments, this aperture **22** is positioned beyond the blisters **130** and cooperates with the detent **129** to prevent movement or translation of the card **10** until the card **10** is intentionally released by pressing or otherwise properly manipulating the release button **20**.

[0028] Openings **146** in the sleeve top **118** allow the forming of one or more springs **148** that press the card **10** so as to urge the aperture **22** into engagement with the retaining detent **129**. The springs can be substituted for, or complimented by, additional biasing mechanisms such as ribs, leaf springs, dagger springs, combinations thereof, or the like, to exert a compressive force on the card **10** to engage or remain engaged with the detent **129**. As will be understood, the biasing mechanism **148** does not have to be opposite the detent **129**, rather the biasing mechanism **148** and the detent **129** are merely configured to cooperatively engage the detent retainer **22** of the card **10**.

[0029] As best shown in FIGs. 5 and 6, cylinders **150** located proximate the side walls **152** of the base **116** receive pins **151** extending downwardly from the top **118**. It should be appreciated that other attachment mechanisms are possible, and that the cylinders **150** and the pins **151** can be located on either or both of the base **116** and the top **118**. Furthermore, the illustrated positioning is merely exemplary. A retainer **154**, such as the dagger spring centered in the top **118** near the open end **140** proximate the recess **128**, is captured by the retainer receiver as represented by the aperture **22**, to prevent complete removal of the card **10** from the container **110**. In the closed and locked configuration, the detent **129** projects through the detent retainer illustrated here as the aperture **22**, to lock the card **10** in the sleeve **114**. The inner ribs **158** inside the top **118** can help stabilize the card **10** as it is slideably extended and retracted.

[0030] With reference now to FIGs. 4-7, in operation, the free end **124** of the release button **120** is aligned between the ribs or springs **148** so that when the release button **120** is pushed, the rim **125** pushes the card **10** against the springs **148** and over the detent **129**. The guides **168**, located on the inside of the base **116**, facilitate sliding of the card **10**. When the release button **120** is pressed, the rim **125** lifts the card **10** until the detent receiver **22** is lifted over the detent **129**. Simultaneously, the card end **126** is grasped and pulled to access at least the first set of blisters **130**. The card **10** can continue to be extracted until the retainer receiver **22** engages the retainer **154**.

[0031] The detent **129** includes an engaging edge **176** that engages the aperture **22** when the card **10** is fully

inserted within the container **110**, and holds the card **10** to prevent outward movement until the release button **120** and rim **125** disengage the aperture **22** from the detent **129**. After an item is removed from the container **110**, the card **10** can be slid inwardly and returned to a position within the sleeve **114**. When reinserting the card **10**, the sloping upper face **178** of the detent **129** lifts and urges the aperture **22** to engage the detent **129** as the card **10** is fully reinserted into the container **110**. When the card **10** is fully inserted, the aperture **22** substantially surrounds and engages the detent **129**.

[0032] The foregoing description has described embodiments with a detent **129**, and a detent retainer **22**. It should be understood that the detent **129** is only an exemplary engaging mechanism. Accordingly, the concepts of this disclosure can include any engaging mechanism, for example, a latch, a lip, a leaf spring, a pin, a notch, a catch, a hook, an adhesive, a VELCRO® fastener, a magnet, a metallic surface, combinations thereof, or the like. Similarly, the detent retainer **22** is only an exemplary receiving mechanism for interacting with the engaging mechanism. Accordingly, the concepts of this disclosure can include any receiving mechanism, for example, an aperture, a catch, a latch, a hook, a lip, an adhesive, a VELCRO® fastener, a magnet, a metallic surface, combinations thereof, or the like.

[0033] Turning now to FIGs. 8 - 10, there is shown an alternative embodiment of the present disclosure. FIG. 8 shows a partially assembled secondary package **210** configured to receive and hold three primary packages in the form of blister packs **51**, each in a respective receiving pocket **50**. Alternative embodiments include more or less primary packages held by a respective number of receiving pockets. FIG. 9 shows the secondary package **210** with the last primary package being inserted and an exemplary outer sleeve **114**. Next, FIG. 10 shows a secondary package **210** being inserted into a lockable container **114** to form a lockable container according to the present disclosure. The illustrated secondary package **210** and outer sleeve **114** operate similarly to the embodiment described above with reference to FIGs. 1-7.

[0034] The law does not require and it is economically prohibitive to illustrate and teach every possible embodiment of the present claims. Hence, the above-described embodiments are merely exemplary illustrations of implementations set forth for a clear understanding of the principles of the disclosure. Variations, modifications, and combinations may be made to the above-described embodiments without departing from the scope of the claims. All such variations, modifications, and combinations are included herein by the scope of this disclosure and the following claims.

Claims

1. A container, comprising:

a sleeve (114) comprising a plurality of walls (116,118,152) that define a void for receiving a slideable secondary package (10;210); and the slideable secondary package comprising:

a base panel (12); and
a top panel (14) foldably attached to the base panel, the top panel including at least one receiving flange (44a,44b) formed thereon, each receiving flange being configured to receive at least a portion of a primary package (51).

2. The container of claim 1, wherein the primary package (51) has at least one blister carrying an item, the base panel (12) defining at least one gate (40), each gate corresponding to a respective blister.
3. The container of claim 2, wherein each gate (40) either is an aperture or is defined by a perforation.
4. The container of claim 2 or claim 3, wherein the top panel (14) defines a receiving aperture (30), the receiving aperture having an aperture perimeter, the aperture perimeter being large enough such that each gate (40) is laterally located therewithin.
5. The container of claim 4, wherein the top panel (14) has a pair of receiving flanges (44a,44b), each respective receiving flange being located on opposite sides of the receiving aperture (30).
6. The container of claim 2, wherein the top panel (14) defines a plurality of receiving apertures, the receiving apertures each defining an aperture perimeter, the aperture perimeter being large enough such that a group of gates is laterally located therewithin, each receiving aperture having a pair of receiving flanges associated therewith, each respective receiving flange being located on opposite sides of the corresponding receiving aperture.
7. The container of claim 1, wherein the sleeve (114) defines a lockable container for retaining slideable secondary package.
8. The container of any one of claims 1 to 7, wherein sleeve (114) comprises a detent (129) having an engaging edge (176) that is engageable with an aperture (22) formed in the secondary package (10;210) when the secondary package is fully inserted within the sleeve (114), whereby the secondary package (10;210) is retainable within the sleeve (114) to prevent outward movement thereof.
9. The container of any one of claims 8, wherein the sleeve (114) comprises a button (120) that is operable to deform a portion of the secondary package

(10;210) away from and out of engagement with the engaging edge (176) of the detent (129), thereby to allow the secondary package (10;210) to be at least partially withdrawn from the sleeve.

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- 10.** The container of any one of claims 1 to 9, wherein sleeve (114) comprises a detent (154) that is engageable with an aperture (22) formed in the secondary package (10;210) when the secondary package is partially withdrawn from the sleeve (114), whereby the secondary package (10;210) is retainable within the sleeve (114) to prevent complete withdrawal thereof.

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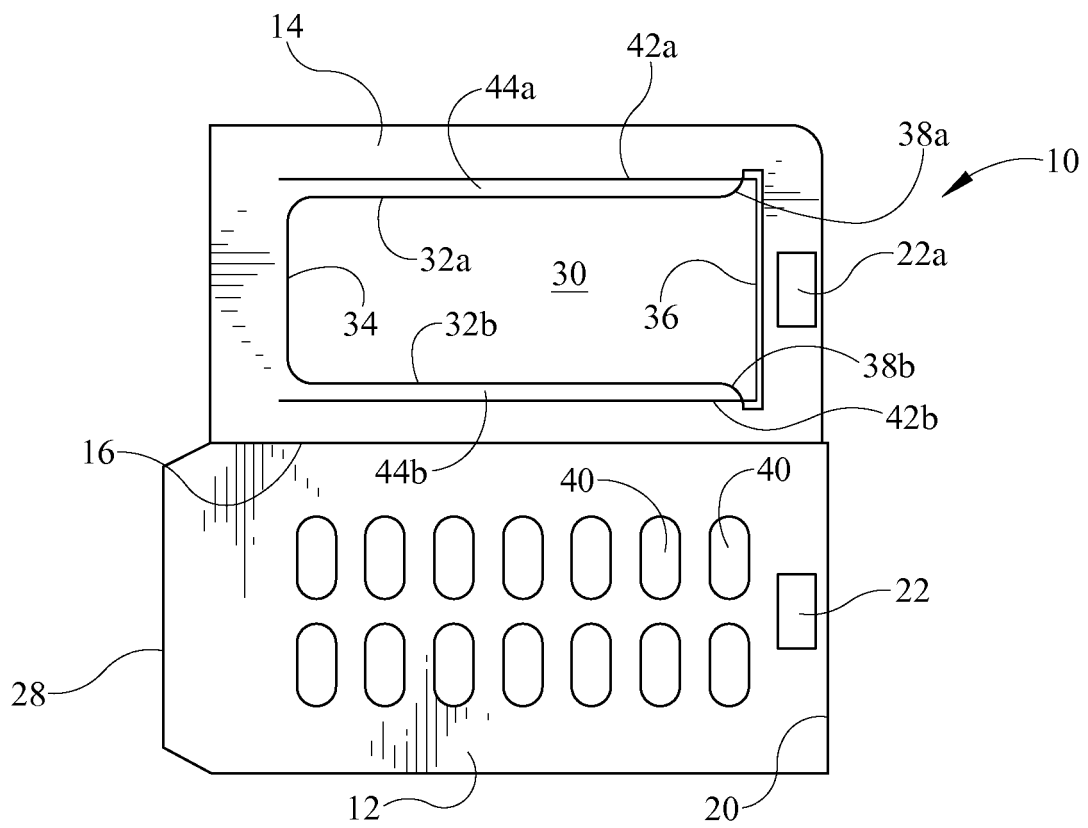


FIG. 1

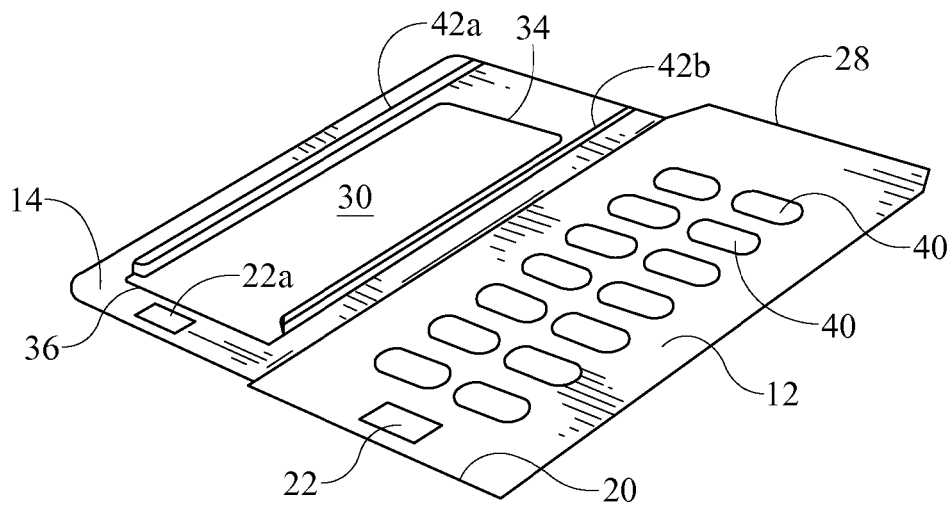


FIG. 2

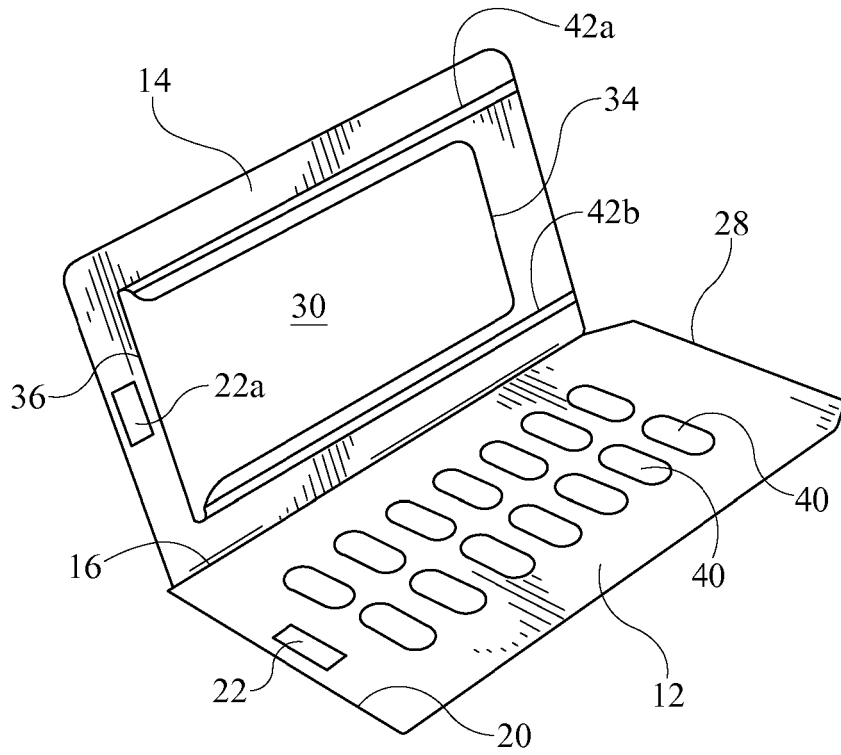


FIG. 3

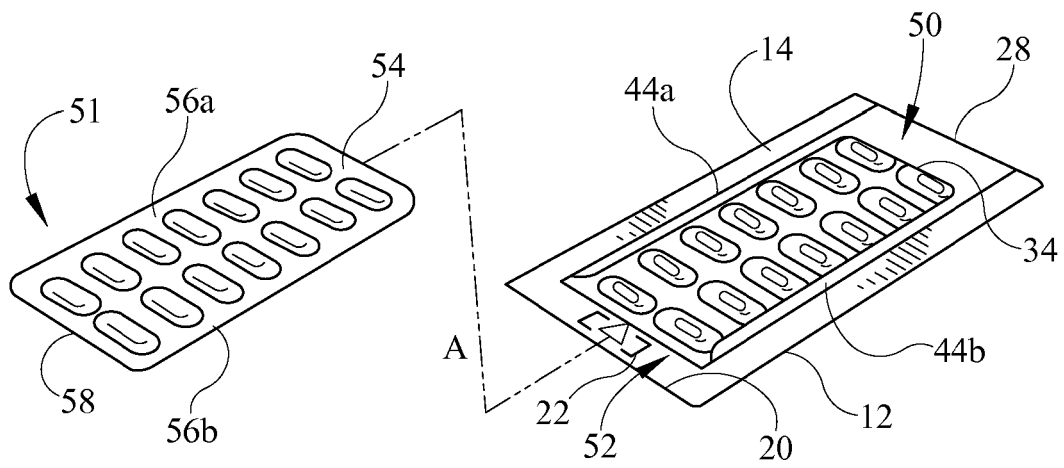


FIG. 4

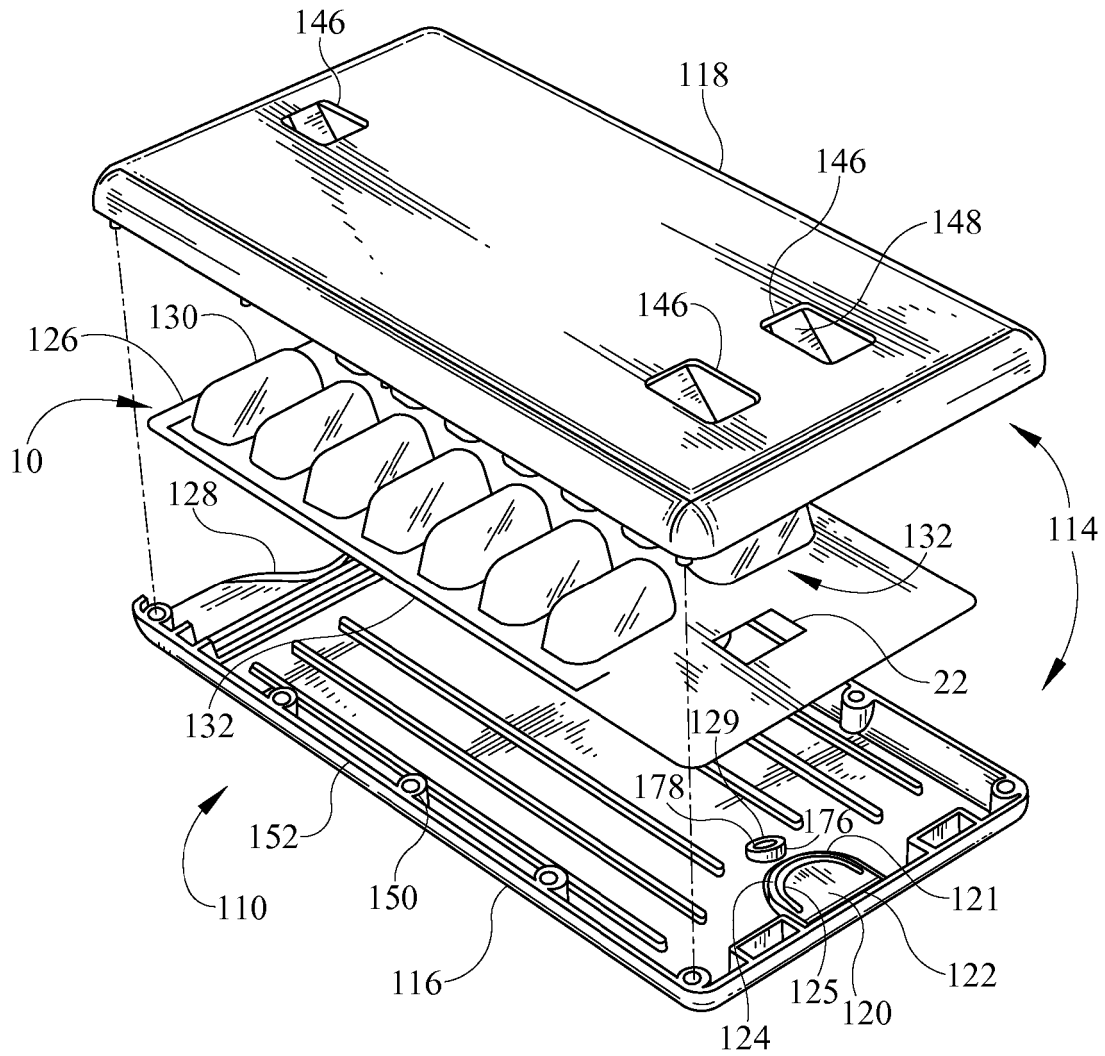


FIG. 5

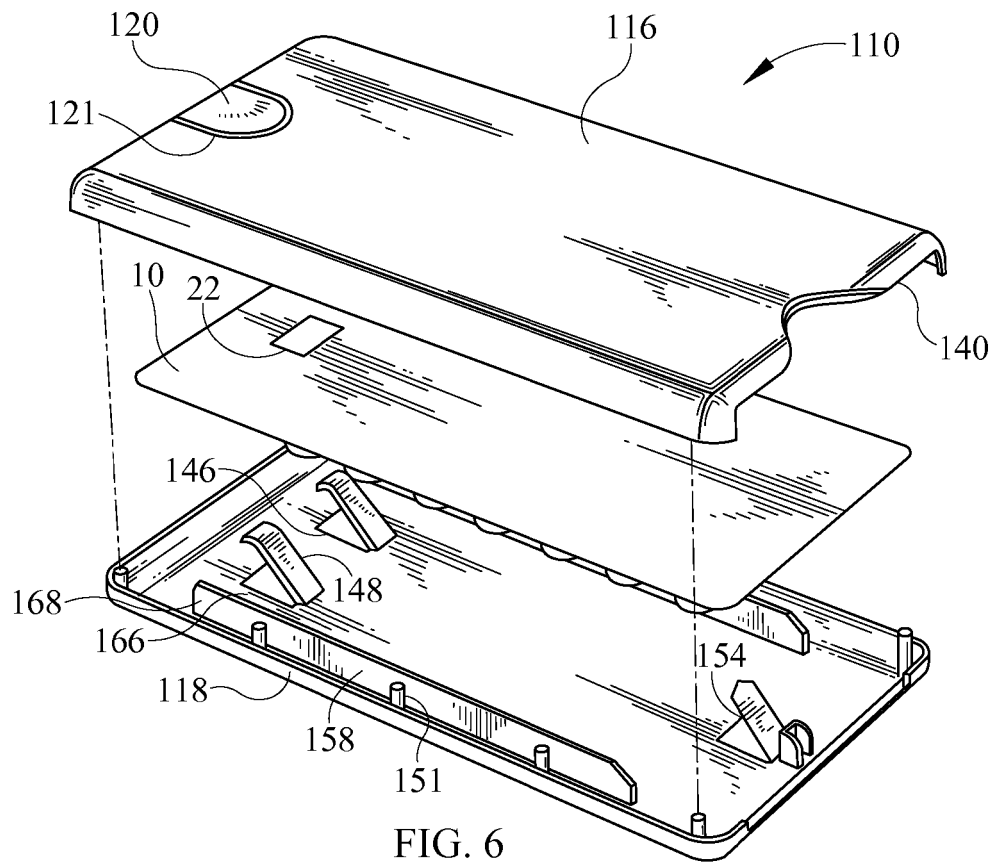


FIG. 6

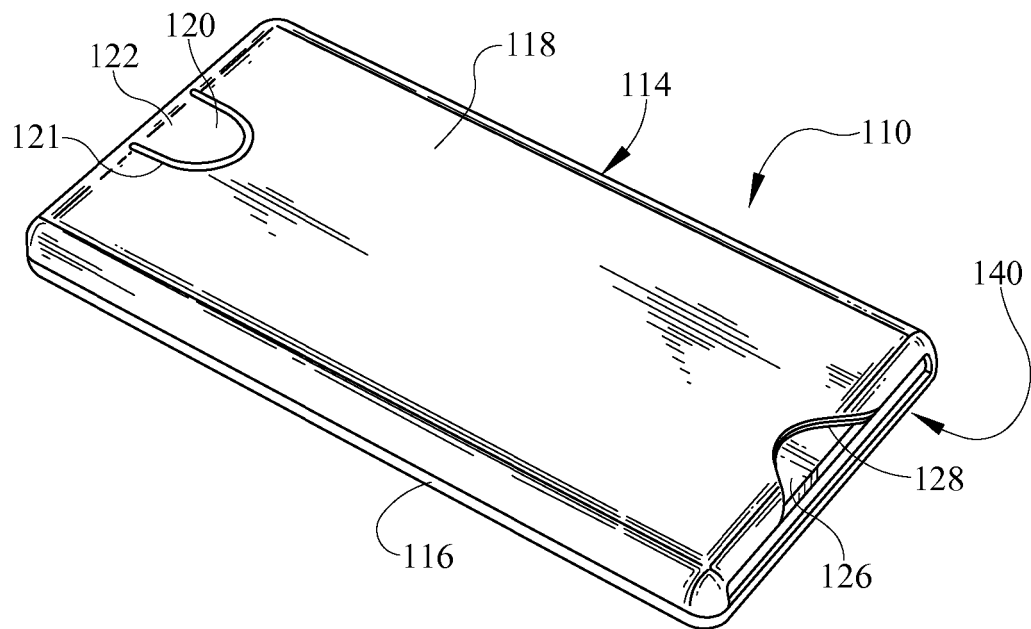
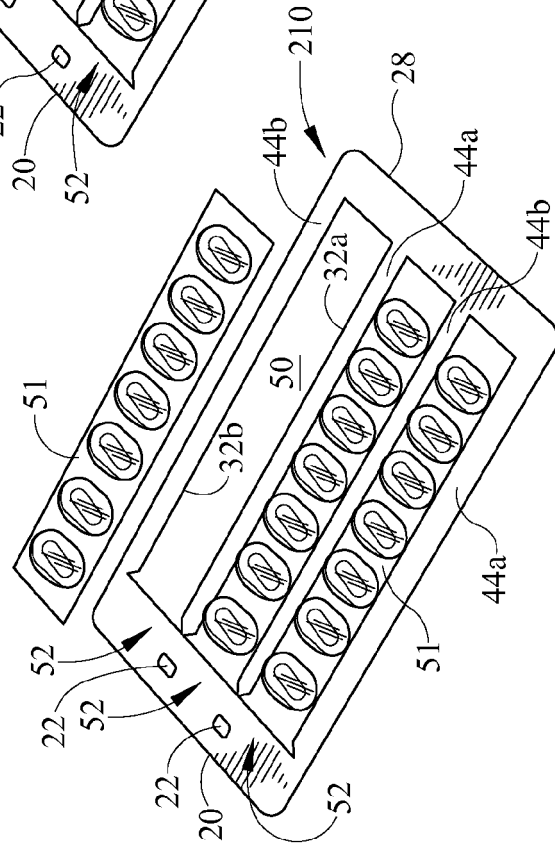
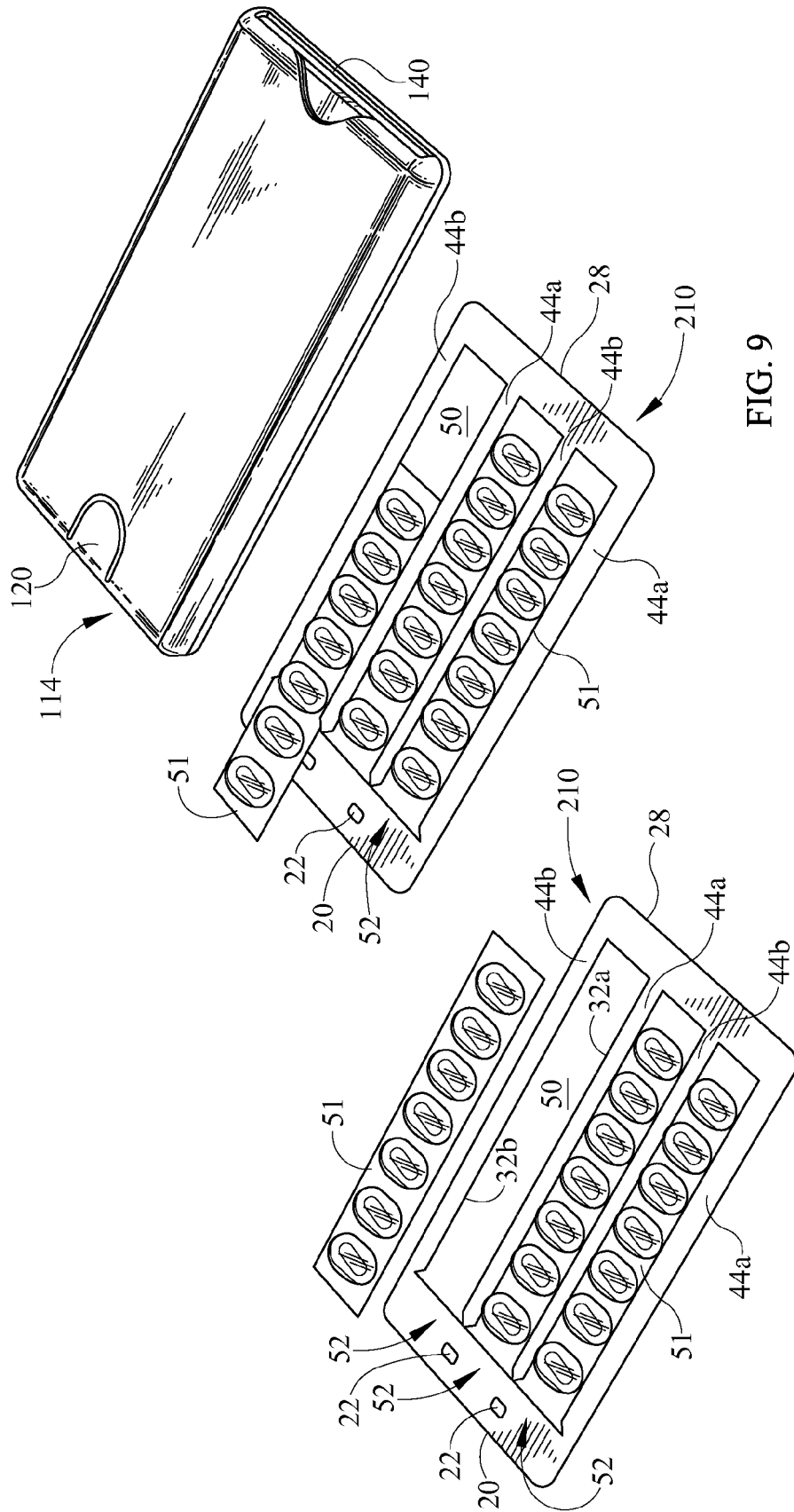


FIG. 7



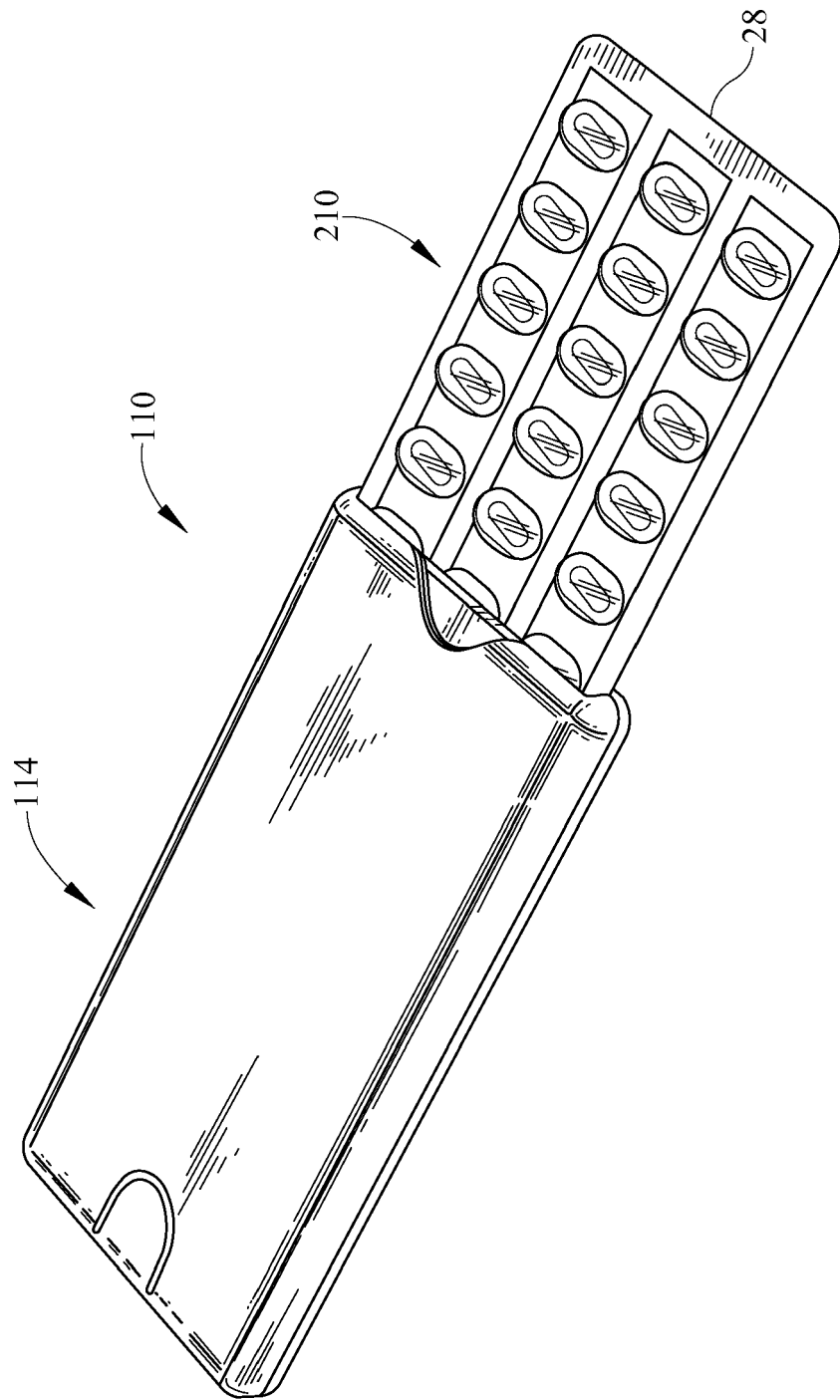


FIG. 10



EUROPEAN SEARCH REPORT

Application Number
EP 09 15 6950

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 09 15 6950

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The members are as contained in the European Patent Office EDP file on
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