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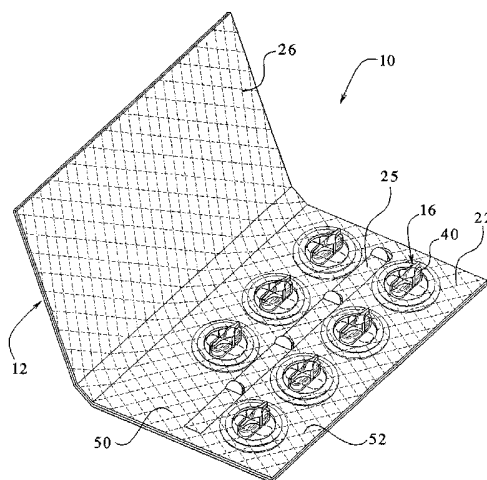
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(54) Title: CHILDPROOF, SENIOR FRIENDLY BLISTER PACK



(57) Abstract: A blister pack (10) for dispensing pills (34) that includes a substantially tear resistant housing (12) that encloses one or more blisters (16) contained on a blister sheet (14). In one embodiment, the cavities (38) of the blisters (16) are positioned such that the pills (34) are aligned at an angle with respect to the corresponding dispensing slots (27) on the housing (12) in their normal position. The blisters (16) are detachably attached to a zipper strip (17) on the blister sheet (14) to prevent undesired rotation of the blisters (16). Upon removal of the zipper strip (17), the blisters (16) may be twisted until their pills (34) are substantially aligned with their respective dispensing slot (27) to allow for the pill to be dispensed. Another embodiment comprises a clamshell package for (500) displaying and housing products that includes a substantially tear-resistant housing (506) that encloses a substantially transparent or substantially opaque display chamber (502, 600) by criss-cross grain material (560) to provide cut or tear resistance in multiple directions.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**CHILDPROOF, SENIOR-FRIENDLY BLISTER PACK**

10           This application claims priority to U. S. Provisional Patent Application Serial No. 60/406,776, filed on August 29, 2002 and PCT Application Serial No. PCT/US 2002/31224, filed on October 1, 2002.

**TECHNICAL FIELD**

15           This invention relates in general to packaging, and more particularly to packaging that inhibits pilfering, and still more particularly to packaging that is constructed of a substantially tear-proof card material. This invention also relates to a blister pack that is childproof while also being senior-friendly, and more particularly to a blister pack that is constructed of a substantially tear-proof card material, and still  
20 more particularly to a blister pack that requires multiple senior-friendly steps to be performed in order to dispense the pills or other objects.

**BACKGROUND ART**

          Heretofore, it has been well known to use blister packs for, among other  
25 things, the housing of pharmaceutical pills and liquids. Typically, blister packs consist of a series of blisters formed into a sheet of substantially impermeable clear plastic. The open end of the blister is generally covered with a thin metal foil or peel-off film that may be punctured or removed to access the pill inside the blister.

          While the known blister packs work in many respects, problems have arisen in  
30 their use. First, known blister packs, similar to the use of a bottle of pills, do not provide for an easy way for consumers to track whether they have taken the necessary

medication. Accordingly, if consumers cannot remember if they took the necessary medication, they will either have to forego taking a pill and risk the possibility of not taking the medication, or take another pill and risk the possibility of taking too much of the medication.

5           Second, because of the nature of the contents of many blister packs, especially pills, there is a need to make the blister packs substantially childproof. In that regard, in blister packs that include separate individual-pill blister packs that are kiss-cut to each other, it is known to have a protective layer over the foil to prevent the pills from being dispensed prior to the removal of the protective layer. The protective layer may  
10           generally be removed by using a fingernail to try and peel back the protective layer or by breaking off a removable corner piece of the blister pack and then peeling off the layer. Alternatively, the blister may be protected by a protective layer that includes a perforation in the middle of one of the sides that is designed to facilitate the tearing of the protective layer to access the pill. Such known embodiments are often very  
15           difficult to open by hand and often result in jagged or sharp edges. Because a large market for blister packs is senior citizens, who may experience diminished manual dexterity or hand pain from arthritis or the like, a manufacturer must take into account that it should be easy to operate and open, especially for senior citizens. Therefore, there is a need to develop a blister pack that is substantially tamper and tear proof,  
20           childproof and senior-friendly.

          A popular design of blister packs for labeling and housing products is known as a clamshell. Clamshells are generally comprised of a housing and a chamber for storing products and may be reusable or permanently sealed. Permanently sealed clamshells are generally formed from a clear plastic housing that is sealed together  
25           through radio frequency (RF), sonic vibrations or electrical resistance. As the housing is generally made from clear plastic, inserts made of cardboard and other materials are often inserted into the clamshell packaging to describe or label the goods.

          While permanently sealed clamshells offer increased protection from pilfering, there are several drawbacks associated with the use of such clamshells. In particular,  
30           the processes for inserting an insert and for sealing the clamshell together are generally expensive and time consuming. Moreover, in order to hold the larger quantities of products in the "institutional" or "value" packages normally sold in warehouse clubs and the like, and/or to make such packages harder to shoplift, such large all-plastic clamshells tend to take up a greater amount of shelf space than

necessary, use up more packaging material than necessary to make the package, and result in a greater amount of wasted packaging material. Such sealed all-plastic clamshells also tend to be harder to open by the consumer (after purchase) than other sorts of packaging. Additionally, such plastic packaging is typically slippery, 5 whereby a knife or scissors being used to open the package by penetrating the plastic clamshell can bounce or slip off the package and cut or otherwise wound the user. Furthermore, when cut open, the plastic housing often has sharp edges that can pose a risk to the user and/or young children.

Another common type of container incorporates an opaque box to store goods 10 or products so that they are not visible to the consumers or others. Such boxes are typically made from a cardboard or heavy stock paper having sides comprised of flaps. In order to seal the boxes, the flaps of the box are adhered to one another. The box is, therefore, opened by pulling one flap apart from the other flaps of the box. While these boxes may, in many respects, work, problems have arisen with respect to 15 their use. In particular, because of the way that the boxes are opened and closed, the edges of the flaps are not perfectly flush with the box. Accordingly, the edges may be torn and/or inadvertently opened if the packaging is contacted against a sharp surface or other object. Having opened or partially opened boxes may result in additional costs and expenses to the storeowner or seller because consumers are less likely to 20 buy goods that appear to have been tampered with or damaged. Additionally, because these boxes may be readily opened by opening a flap along their exposed seams, the products are susceptible to pilfering and such pilfering is not always immediately detectable. The potential problem with pilfering of products, such as razorblades, has forced many stores to remove the products from the general store shelves and instead 25 place such products behind the counters. Accordingly, both the customers and employees are inconvenienced by the fact that the products must be specifically requested by the customers and retrieved by an employee in order to purchase them.

Therefore, there is a need to produce a substantially pilfer-proof blister pack or other packaging container that allows for a retailer to describe or label the product, 30 while being economical, easy to manufacture and sized to take up a minimum amount of shelf space.

### **DISCLOSURE OF THE INVENTION**

The present invention is an improvement over the prior product packaging in that layers of the card material for the housing are overlapped so as to criss-cross the grain of the overlapped layers used. Accordingly, the housing is resistant to tearing in two directions instead of only one. The housing is preferably printable to allow for advertising, promotional or other information to be displayed and includes one or more holes to accommodate one or more chambers for storing the product. Each of the chambers preferably has a rim that extends around the bottom of the chamber so that when the chamber is inserted through the opening in the housing, the rim abuts with the underside of the top layer or sheet or the housing to prevent the chamber from being pulled through the opening.

The product display chambers may be, among other things, substantially transparent or substantially opaque. In the case of the substantially transparent chamber, the chamber may be, among other things, a single large plastic compartment or multiple bubble-like plastic compartments, and is preferably secured within the housing by the overlapping layers of the card portion. Thus, once in place, the products are securely contained within and visible through the chamber.

The embodiment having the substantially opaque chamber is preferably made from a substantially tear-resistant material. In order to further protect against theft, the chamber is preferably seamless with reinforced corners. A security device such as a sensor may also be placed within the product packaging to inhibit anyone from stealing the whole package.

Likewise, in a pharmaceutical dispensing, substantially, childproof version, the way that products contained therein are removed is unique and comprises an improvement over the prior art. In particular, the housing of the blister pack is preferably made from a substantially tear-resistant material to inhibit pilfering or undesired tearing of the card portion and encloses a blister sheet having a plurality of blisters. A preferred material comprises an SPS board coated on one side with a uni-directional laminate, such that when two housing sheets are placed on top of one another, the grains of the sheets substantially criss-cross to make the housing resistant to cutting or tearing in two directions instead of only one.

In one embodiment, the cavities underneath the blisters are initially aligned such that the pills or other objects housed inside the cavities are substantially perpendicular to the dispensing slots on the bottom sheet of the housing. In order to

prevent the blisters from being turned to dispense the pills, a zipper strip is kiss-cut or otherwise attached in perforated-cut fashion to the blisters. Other detachable attachment methods should be contemplated as being within the scope of the present invention. Upon removal or disengagement of the strip, the released blister may be  
5 turned until the blister's pill is aligned with its respective dispensing slot, thereby allowing the blister to be depressed so as to push the pill or capsule through the film covering the dispensing slot, in order to enable removal of the pill. While the example shown in this application describes the longitudinal axis of the dispensing slot as initially aligned at 90 degrees from the longitudinal axis of the blister and the  
10 pill contained therein, other angles from that axis should be considered as being within the scope of this invention. In another embodiment, the blisters need to be released and moved or slid into alignment with a slot to permit release of the pill contained therein.

An alternative embodiment of a childproof, senior-friendly blister pack  
15 comprises a pair of plastic sheets housed within the substantially tear-proof housing. One of the sheets includes a plurality of blisters that are preferably arranged in a series of rows and/or columns for housing a plurality of pills or other objects, which are retained within the blisters by a thin foil sheet. The second sheet comprises a series of channels that align with the series of rows and/or columns of blisters such  
20 that depressing the blister pushes the pill from the blister into the respective channel. The pill may then travel down the channel and into a second channel that traverses the series of channels. Once in the second channel, the pill may then proceed to a pill dispensing area that preferably comprises a dispensing slot that is initially displaced from the second channel or is otherwise covered to prevent the pill from being  
25 dispensed without further action.

In operation, the pill may be dispensed in a number of ways including through the use of a cover member that slides between a closed position (i.e., covering the dispensing slot) and an open position (i.e., uncovering the dispensing slot). A twistable or turnable blister may also be used wherein a flange of the blister may  
30 initially cover a dispensing slot when in the storage mode. Alternatively, the dispensing slot may be a part of the blister. Rotation of the blister thereby allows the dispensing slot to be uncovered or moved into alignment with the second channel to permit the pill to be dispensed. A zipper strip may also be employed to initially prevent movement of the turnable blister or sliding cover member.

It is therefore an object of the present invention to provide a new and improved blister pack that is substantially childproof, yet senior-friendly.

A further object of the present invention is to provide a blister pack wherein the housing is manufactured from a printable, substantially tear-resistant material.

5 Yet another object of the present invention is to provide a new and improved blister pack that requires a blister to be released so as to allow the blister to be moved, for example, turned or slid, in order to enable a pill to be dispensed, so as to prevent undesired dispensing of medication by children.

10 A still further object of the present invention is to provide a blister pack that facilitates the tracking of pill consumption.

Another object of the present invention is to provide a packaging container for displaying products or product information that is substantially tear-resistant.

Yet another object of the present invention is to provide a packaging container that inhibits theft and the inadvertent opening of the packaging.

15 A further object of the present invention is to provide a packaging container that is easy and economical to manufacture.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheets of drawings, wherein like reference numerals refer to like parts.

20

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a perspective view of an embodiment of a childproof pharmaceutical dispensing blister pack showing the zipper strips of the blister sheet and housing top sheet still attached and the blisters in their normal non-dispensing position; the slots in  
25 the housing bottom sheet perpendicular to the blister cavities and in phantom; and a cover in the open position to access the blisters.

Fig. 2 is an exploded view of the childproof pharmaceutical dispensing blister pack of Fig. 1 showing the housing top sheet unfolded and rotated away from the housing bottom sheet, the blister sheet having a plurality of blisters removably  
30 attached to a removable zipper strip, a plurality of pills, and a foil layer.

Fig. 3 is a vertical plan view of an unfolded single housing sheet showing a series of scored lines used to form the housing top sheet, housing bottom sheet, and cover for the childproof pharmaceutical dispensing blister pack.

Fig. 4 is an exploded view illustrating a blister sheet of a childproof pharmaceutical dispensing blister pack before the blisters and zipper strip are cut away, and a thin film or foil sheet for placing over the pill dispensing slots to retain the pills within the cavities of the blisters.

5        Fig. 5 is a partial perspective view of the childproof pharmaceutical dispensing blister pack of Fig. 1 showing the zipper strips partially removed from the housing top sheet and blister sheet and away from the first pair of blisters.

10       Fig. 6 is a partial perspective view of the childproof pharmaceutical dispensing blister pack of Fig. 1 illustrating a single blister being rotated 90 degrees to allow a pill to be dispensed.

Fig. 7 is a perspective view of a blister sheet showing the blisters arranged in rows with a plurality of zipper strips attaching the bases of adjacent blisters.

15       Fig. 8 is an exploded view of the childproof pharmaceutical dispensing blister pack shown in Fig. 7 showing the housing top sheet unfolded and rotated away from the housing bottom sheet; the blister sheet having a plurality of blisters arranged in two rows wherein the blisters are removably attached zipper strips to adjacent blisters; a plurality of pills, and a foil layer.

Fig. 9 is a perspective view of an embodiment of the blister pack providing criss-cross grain card material surrounding a plurality of blisters.

20       Fig. 10 is a perspective view of an embodiment of the childproof pharmaceutical dispensing blister wherein a clock dial is simulated about each blister and the dispensing slots are aligned so as to correlate and graphically illustrate when the pills should be taken.

25       Fig. 11 is a perspective view of a slidable blisters embodiment of a childproof pharmaceutical dispensing blister pack showing the zipper strips of the blister sheet and housing still attached and the blisters in their normal position distal from the dispensing slots.

30       Fig. 12 is a perspective view of the slidable blisters embodiment of Fig. 11 showing a zipper strip partially removed from the housing and blister sheet to release a blister to allow it to move from its normal position to a position over the corresponding dispensing slot, as shown in phantom, to dispense the pill.

Fig. 13 is a perspective view of another embodiment of a childproof, senior-friendly pharmaceutical dispensing blister pack showing a plurality of blisters and a pill dispensing area.

Fig. 14 is an exploded view of the blister pack of FIG. 13 showing a first plastic sheet having a plurality of blisters for storing pills and a second plastic sheet having a plurality of channels for transporting the pills to the pill dispensing area.

Fig. 15 is a perspective view of an embodiment of a turnable blister that may be temporarily locked in either an open or closed position.

Fig. 16 is a perspective view of another embodiment of a childproof, senior-friendly blister pack showing a slidable cover member to selectively cover the dispensing slot.

Fig. 17 is a perspective view of an embodiment of a clamshell package having a central, single rectangular display chamber.

Fig. 18 is an exploded view of the clamshell package from Fig. 17 showing the housing bottom sheet rotated away from the housing top sheet and the central, single rectangular display chamber having a rim to be securely retained between the top and bottom sheets when attached.

Fig. 19 is a perspective view of a substantially opaque chamber for a clamshell package.

#### **DETAILED DESCRIPTION OF THE INVENTION**

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail several specific embodiments, with the understanding that the present disclosure is to be considered merely an exemplification of the principles of the invention and the application is limited only to the appended claims.

Referring now to the drawings, and particularly to FIGS. 1 and 2, the improved childproof pharmaceutical dispensing blister pack of the present invention, generally designated by the numeral 10, is illustrated having a housing 12; a blister sheet 14 containing a plurality of blisters 16 and a zipper strip 17; and a thin film or foil sheet 18.

The housing 12 includes a top sheet 22, a bottom sheet 24 and a cover 26. Although the housing is shown in the figures as being constructed from a single sheet of material, it is appreciated that the housing may be comprised of multiple sheets or parts that are attached or initially separate pieces with respect to one another and not depart from the scope of the present invention. Furthermore, it is appreciated that the

blister sheet may be used without a cover and not depart from the scope of the present invention.

5 The top sheet 22 of the housing includes a series of holes 23 shaped to receive the plurality of blisters 16. A zipper strip 25 may also be included on the top sheet 22 that may be removed in conjunction with, or beforehand, to allow the removal of the zipper strip 17 on the blister sheet 14. It is appreciated that the zipper strip 25 may be a uniform strip or may be comprised of a series of distinct strips that are individually located adjacent to a single blister or between a pair of blisters. Furthermore, it is appreciated that the zipper strips may be of a variety of sizes and/or shapes and not  
10 depart from the scope of the present invention.

As shown in FIGS. 1 to 3, it is preferred that when multiple zipper strips are utilized, the zipper strips 25 be separated by spaces or holes 29 to allow for the ends 31 of the zipper strips 17, as explained in more detail below, to extend through the holes 29. Having the ends of the strips extend through the holes facilitates the  
15 removal of the zipper strips from the housing and blister sheet to release a pair of blisters. It is further appreciated that the ends of the zipper strips may include a raised surface or node to facilitate the grabbing of the zipper strip. While a zipper strip 25 is shown, it is appreciated that the top sheet 22 may instead include a slot or other opening for accessing the zipper strip 17 of the blister sheet 14. As shown in FIGS. 1  
20 to 5, the housing bottom sheet 24 has a series of dispensing slots 27 that are sized to allow the pills contained within the blisters 16 to be easily dispensed.

In order to facilitate the manufacture of the blister pack, the single sheet 20 of material may be scored as shown in FIG. 3. In particular, the housing 12 may include a first scored line 28 between the top sheet 22 and the bottom sheet 24 to allow the top  
25 and bottom sheets 22 and 24 to be folded on top of one another. The housing 12 may also include additional scored lines 30 and 32 to allow for the cover 26 to be folded over the blisters 16 when in use. It is appreciated that instructions or other information may be printed on the inside or outside surface of the cover.

The housing is preferably made from a SPS board coated on one side with a  
30 uni-directional laminate material. Such material is easier to cut or tear in the direction of the grain, than against it. Hence, when two housing sheets are folded or otherwise placed on top of one another, instead of the uni-directional grain of the materials all going in the same direction or being parallel, (as it would in a single sheet of material which is less resistant to tearing or cutting in the direction of the grain) the grains

50,52 of the overlapped sheets serve to overlap. The criss-crossing grains of the overlapped material adds strength to the housing and protects against undesired tearing or cutting in two directions. An example of a suitable uni-directional laminated material is a specialty film produced by Valeron Strength Films under the trademark VALERON<sup>TM</sup>. While Valeron is made from a polyethylene material, other such coatings, such as, but not limited to, polypropylene or polyester may be used. While a SPS board coated with a laminated material is used, it is appreciated that other materials having sufficient strength to resist tearing, including, but not limited to, cloth films, cloth and plastic films, and heat sealable boards and other coatings may also be used and not depart from the scope of the present invention. Examples of cloth films and cloth and plastic films include those films known by the names SCRIMM and CLAFF. It is further appreciated that the housing may be made from any other materials that are known to be used in blister packs such as, but not limited to, standard board stock, and not depart from the scope of the present invention.

Referring now to FIG. 2, the blister sheet 14 includes a plurality of blisters 16 for housing pills 34 and a zipper strip 17. Each blister 16 includes a base 36 and a cavity 38 for containing a pill 34. The cavity 38 is preferably shaped and positioned such that when the blister 16 contains a pill 34, the pill 34 extends substantially perpendicular to the dispensing slot 27 on the bottom sheet 22 of the housing 12 to prevent its removal from the blister pack. However, it is appreciated that the cavities and the pills therewithin may be positioned in any direction as long as they are neither substantially parallel to nor aligned with the dispensing slot when in the normal position. Hence other angles between the longitudinal axis of the slot and the longitudinal axis of the blister or pill may be used. In order to facilitate the turning of the blister 16, the blister may include a tab, bulge, protrusion or indentations 40 on the top or side of the blister. It is appreciated that the blister may be of various sizes and shapes and not depart from the scope of the present invention, with the understanding that the blister and the housing need to cooperate to enable rotation of the blister when released, while still securely holding the blister within the housing.

Preferably, the blister sheet is molded from a substantially tear-resistant material, such as a 10 mil PVC, which is substantially transparent to enable the pills to be visible when contained within their respective cavities. However, it is appreciated that the blister sheet may be made from a variety of materials that are opaque, transparent or otherwise and not depart from the scope of the present

invention. As shown in Fig. 4, the blister sheet 14 is preferably molded into a sheet that includes a plurality of blisters 16 and tabs for the ends 31 of the zipper strips 17. The blisters 16 and zipper strip 17 may then be cut away in a known way to form the blister sheet 14 shown in FIG. 2 for use with the present invention. Similarly, a foil sheet or thin film 18 is placed over the open end of the blisters 16 to maintain the pills 34 within the blisters 16. It is appreciated that the foil sheet or thin film may also be placed over the housing bottom sheet such that when the blister sheet is contained within the housing, the pills are contained within the cavities of the blisters. The foil sheet or thin film allows for the pills to be pushed through the film to dispense the pills. Although it is preferred that a thin film or foil sheet be used, it is appreciated that the dispensing slot may be uncovered or covered by another means including a removable cover.

Referring again to FIG. 2, the zipper strips 17 extends between two columns of blisters 16. In order to prevent the blisters from being twisted, rotated or turned, each zipper strip 17 is removably attached to the bases 36 of the blisters 16. While one zipper strip is shown as cooperating with two blisters or two rows of blisters, each blister or row of blisters can be provided with its own zipper strip. Furthermore, while the zipper strips are preferably kiss-cut or perforation-cut to the blisters, it is appreciated that they may be detachably attached to the blisters by other means and not depart from the scope of the present invention.

As shown in FIG. 1, the ends 31 of the zipper strips 17 extend through holes 29 in the housing top sheet 22 to enable the zipper strips 17 to be readily engaged by the user. A tab or similar device may be attached to the end 31 of the zipper strip 17 to facilitate the gripping and removal of the zipper strip. While a zipper strip is shown and described, it is appreciated that the blisters may be retained using other sorts of retaining members and not depart from the scope of the present invention.

In order to make the blister pack, a blister sheet 14 having a number of blisters 16 as shown in FIG. 4 is molded from a 10 mil PVC sheet. Pills, capsules or other objects 34 are then inserted into the cavities 38 of the blisters 16. With the pills inside the cavities of the blisters, a foil sheet or thin film 18 is attached to the bottom of the blister sheet 14 to seal off the cavities 38, thereby retaining the pills 34 in the cavities 38. The blister sheet 14 is then cut into a matrix having a plurality of blisters 16 kiss-cut, scored or perforation-cut to a zipper strip 17 and inserted into the housing 12 such that the blisters 16 extend through corresponding holes 23 in the top sheet 22 of the

housing 12. In order to form the housing, the housing sheet is folded along a scored line 28 separating the top sheet 22 and the bottom sheet 24. The top and bottom sheets are then fixedly attached to one another using a heat-activated or other type of adhesive, or any known method such as, but not limited to, staples or other fasteners to securely retain the sheets together and prevent tampering of the blister pack. Once assembled, the blisters stick through the openings of the housing and are preferably retained by a peripheral flange of the base that is adjacent to and abuts against the underside of the top sheet of the housing. Additionally, the housing 12 also may be folded along additional scored lines 30 and 32 to provide a cover 26 for the blister pack 14. It is appreciated that the foregoing description represents a preferred method of making a blister pack of the present invention and that the invention is not limited to this particular method.

In order to remove the pills 34, the end 31 of on the zipper strip 17, as shown in FIGS. 5 and 6, is pulled to remove the zipper strips 17 and 25 from the top sheet 22 of the housing 12 and the blister sheet 14. Removal of the zipper strip 17 from the blister sheet 14 disengages the strip 17 from the blisters 16 to which it was connected, thereby releasing the blisters 16 contained on the blister sheet 14 to allow the blisters 16 to be rotated or twisted 90 degrees (in this example) to align the pills 34 in the cavities 38 of the blisters 16 with the corresponding dispensing slots 27 on the bottom sheet 24 of the housing 12. The blisters 16 may then be pushed so as to drive and expel the pills 34 from the blister pack 10 through the film 18.

It is the two-step zipper strip pulling and blister twisting operation that makes the package substantially childproof because children are not likely to figure out how to release the blister for rotation and alignment with the dispensing slot, yet substantially senior-friendly because seniors should be able to perform these operations with a minimum of manual dexterity or with arthritis pain. Single, double or multiple dose versions of this embodiment should also be considered as part of the invention. Likewise, as indicated above, other blister sheets having any number of blisters, such as, but not limited to, 14 or 30 blisters, should be considered as being within the scope of the invention.

While a blister pack having seven blisters is shown in the figures, it is appreciated that the blister sheet may have any number of blisters and not depart from the scope of the present invention. Additionally, although a blister sheet having an even number of columns of blisters is shown so that a pair of blisters may be released

at the same time, it is appreciated that the blisters on the blister pack may be arranged in any configuration, including in a single column or otherwise. For example, FIGS. 7 and 8 illustrate an alternate embodiment of a blister sheet for use in the type of housing shown and disclosed above, wherein the blisters 102 are arranged in two rows and each blister 102 includes a base 104 and a cavity 106 for housing a pill 107. As disclosed above, it is appreciated that the blister sheet may be made from a PVC sheet or other known materials.

Each of the adjacent blisters 102 in a row is attached at the base 104 to each of the adjacent blisters 102 by a zipper strip 108. In order to prevent the last blister in a row from being released with the penultimate blister, a zipper strip 108 is also preferably attached to the side of the last blister 102 in the row. The top sheet 110 of the housing 111 may also have a removable strip 112 to cover part of the zipper strip 108. A hole 114 in the top sheet 110 of the housing 111 of the blister pack 100 is preferably sized such that the end 116 of the zipper strip 108 extends into the hole 114 to allow for it to be grabbed to facilitate its removal. In order to facilitate the grasping of the zipper strip 108 and to prevent the last blister 102 from being rotated prior to removal of the zipper strip 108, the end 116 of the zipper strip 108 may also have a node 118 or other projection.

In operation, the pills 107 are arranged in the cavities 104 of the blisters 102 such that the pills 107 are not aligned with the dispensing slot 120 of the bottom sheet 122 of the housing 111. Removal of the zipper strip 108 and removable strip 112 releases one of the blisters 102. The blister 102 may then be rotated until the cavity 106 of the blister 102 aligns with the dispensing slot 120 of the bottom sheet 122 of the housing 111. The blister 102 may then be depressed to push the pill 107 through the foil sheet 124 covering the dispensing slot 120 to dispense the pill 107. Although it is preferred that a thin film or foil sheet be used, it is appreciated that the dispensing slot may be uncovered or covered by another means including a removable cover.

While two rows of four blisters are shown and disclosed, it is appreciated that any number of blisters may be used and arranged in any number of rows and columns. Additionally, it is appreciated that the zipper strips may be attached to one blister or to any number of blisters and not depart from the scope of the present invention.

Turning to Fig. 9, another embodiment of a pill or other object dispensing blister pack 190 is shown. A criss-cross grain double layer card 191 includes a top sheet 193 and a bottom sheet 194 that surround and retain a plurality of blisters 192.

While the blister pack is shown as having ten substantially round blisters, it is appreciated that the blister pack may have any number of blisters of varying shapes and not depart from the scope of the present invention. A plurality of dispensing slots are formed on the bottom of the card 191 and are covered with film or foil so that the pills contained in blisters 192 can be pushed through a thin film or foil sheet.

In the preferred embodiment, the housing is made from a SPS board coated on one side with a uni-directional laminated material so that when two housing sheets having grains 195 and 196 that extend in different directions are placed on top of one another such that the grains overlap, the criss-crossing grains of the materials add strength to the housing and protect against tearing or tampering in two directions. A suitable coating is manufactured under the trademark VALERON™ by Valeron Strength Films. While Valeron is made from a polyethylene material, other such coatings such as, but not limited to, polypropylene or polyester may be used. The material used also is preferably printable to allow for advertising, promotional or other information to be displayed on the housing. While a SPS board with a cross-laminated coating is preferred, it is appreciated that other materials having sufficient strength to resist tearing, including, but not limited to, cloth films, cloth and plastic films, heat sealable boards and other coatings, also may be used and not depart from the scope of the present invention. Examples of cloth films and cloth and plastic films include those films known by the names SCRIMM and CLAFF.

As shown in Fig. 10, any of the blister pack 10a shown and disclosed herewithin may also include a simulated clock dial 200 about the periphery of each of the blisters 16a. As shown by the differing alignments of dispensing slots 27a, the alignment of the blisters 16a can be used to simulate or correlate to the times when the pills should be taken. For instance, when a pill should be taken every three hours, the cavities 40a of the blisters 16a can be aligned at 3 o'clock, 6 o'clock, 9 o'clock and 12 o'clock etc. so as to serve as a visual reminder or prompt of when and/or how often to take the medication. Alternatively, dispensing slots 27a could be aligned at 3 o'clock, 6 o'clock, 9 o'clock and 12 o'clock etc. so as to serve as a visual reminder or prompt of when and/or how often to take the a pill as well as a visual record of when a pill was last taken. While a simulated clock face is shown and disclosed, it is appreciated that any number of symbols, simulated dials or other information may be included among the periphery of the blisters to relay information concerning the pill or other contents of the blister to the customer.

Referring to Figs. 11 and 12, an alternative embodiment 300 of a blister pack having sliding blisters is shown. The blister pack 300 includes a housing 302 having a top sheet 304 and a bottom sheet 306 that enclose a blister sheet having a plurality of blisters 310 and a zipper strip 312 removably attached to the blisters 310. As disclosed above, the housing is preferably made from an SPS board coated on one side with a uni-directional laminate, but may be made from other known materials and/or coatings and not depart from the scope of the present invention. The top sheet 304 of the housing 302 includes a series of slots or channels 314 shaped to receive the blisters 310 and allow the blisters 310 to move within the housing 302. A plurality of dispensing slots 316 are preferably located within the channels 314 distal from the normal position of the blisters 310 so as to prevent dispersal of a pill or other object 318 without releasing the blister 310. The dispensing slots 316 are preferably covered by a thin film or foil sheet 320 so as to maintain the pills within the blister while allowing the pill to be pushed through to permit removal of the pill. Although it is preferred that a thin film or foil sheet be used, it is appreciated that the dispensing slot may be uncovered or covered by other means including a removable cover. A zipper strip 322 also may be included on the top sheet 304, whereby the zipper strip 322 may be removed in conjunction with, or before, the removal of the zipper strip 312 on the blister sheet. While each blister 310 has a zipper strip 312 and a zipper strip 322 individually associated with it, it is appreciated that a pair of blisters 310 could share the zipper strips 312, 322 positioned between them.

In order to facilitate the removal of the zipper strips 312, 322, a tab 324 at the end of the blister sheet zipper strip 312 extends through a hole on the top sheet 304 to allow the tab 324 to be grasped to remove the zipper strip 312 so as to release the blister 310. Once released, the blister 310 can be slid along the channel 314 from position A and into vertical alignment with the corresponding dispensing slot 316 in position B. The pill 318 within the blister 310 can then be pushed through the film 320 covering the slot 316. While four sliding blisters 310 are illustrated, other arrangements having one or more blisters 310 and channels 314 should be contemplated as being within the scope of the invention. It is the two-step zipper strip pulling and blister sliding operation that makes the package substantially childproof, yet senior-friendly because seniors should be able to perform these operations with a minimum of manual dexterity or with arthritis pain. It is further appreciated that the pill may initially be misaligned with the dispensing slot. Accordingly, in order to

dispense the pill 318 through the dispensing slot 316, the blister 310 must be slid and rotated within the channel 314 until the pill 318 is aligned with the dispensing slot 316.

Referring to FIGS. 13 & 14, another embodiment of a blister pack is shown.

5 The blister pack, generally designated by the number 400 is illustrated having a housing 402, a blister sheet 404 containing a plurality of blisters 406 for housing pills 408 and a twistable or turnable blister 410 associated therewith; and a second blister sheet 412 having a plurality of channels 414 for moving the pills from their blisters to the turnable blister 410 for dispensing.

10 The housing includes a top sheet 420, a bottom sheet 422 and a cover 424. Although the housing is shown as being constructed from a single sheet of material, it is appreciated that the housing may be comprised of multiple sheets that are attached to one another and not depart from the scope of the invention. Furthermore, while the housing preferably includes a cover, it is appreciated that the blister pack may forego  
15 a cover and not depart from the scope of the present invention.

The top sheet 420 of the housing 402 includes a dispensing slot 426 and a plurality of holes 428 sized and shaped to receive the blisters 406 and the turnable blister 410. It is appreciated that the dispensing slot 426 may initially be covered in a known way such as, but not limited to, a pull-away zipper strip.

20 The bottom sheet 422 of the housing 402 preferably includes a hole 430 sized and shaped to accommodate all of the channels 414 of the second blister sheet 412. While a large hole is shown and disclosed, it is appreciated that there may be multiple holes to accommodate the various channels or the housing may be of sufficient depth such that the channels may be entirely contained within the housing so that the bottom  
25 sheet may be a uniform sheet without any holes.

The housing is preferably made from a SPS board coated on one side with a uni-directional laminate material. Such material is easier to cut or tear in the direction of the grain, than against it. Hence, when two housing sheets are folded or otherwise placed on top of one another, instead of the uni-directional grain of the materials all  
30 going in the same direction or being parallel, (as it would in a single sheet of material which is less resistant to tearing or cutting in the direction of the grain) the grains of the overlapped sheets serve to overlap. The criss-crossing grains of the overlapped material add strength to the housing and protects against undesired tearing or cutting in two directions. An example of a suitable uni-directional laminated material is a

specialty film produced by Valeron Strength Films under the trademark VALERON<sup>TM</sup>. While Valeron is made from a polyethylene material, other such coatings including, but not limited to, polypropylene or polyester may be used.

While a SPS board coated with a laminated material is used, it is appreciated  
5 that other materials having sufficient strength to resist tearing, including, but not limited to, cloth films, cloth and plastic films, heat sealable boards and other coatings, may also be used and not depart from the scope of the present invention. Examples of cloth films and cloth and plastic films include those films known by the names SCRIMM and CLAFF. It is further appreciated that the housing may be made from  
10 any other materials that are known to be used in blister packs such as, but not limited to, standard board stock, and not depart from the scope of the present invention.

Referring again to FIG. 14, the blister sheet 404 includes a plurality of blisters 406 having cavities 407 for housing pills, and a twistable or turnable blister 410 attached to or associated with a flange 434. While a blister sheet having seven  
15 columns of between one and five pills is shown, it is appreciated that the blister sheet may have any number of blisters arranged in any number of columns and/or rows and not depart from the scope of the invention. It is further appreciated that the individual columns or rows may represent the particular pills that must be taken in a specific time period (e.g., one day) to facilitate the process of taking the necessary pills.

20 The second blister sheet 412 includes a plurality of first channels 414 that correspond to the columns or rows of blisters from the blister sheet 404. The channels 414 extend into a second channel 436 that traverses the plurality of the channels 414. While it is preferred that a second channel be used, it is appreciated that the blister pack may use one or more first channels that are each preferably associated with an  
25 individual dispensing mechanism and not depart from the scope of the present invention. Furthermore, while the pills may be dispensed through the dispensing slot 426, it is appreciated that the end of the second channel 436 may include a dispensing slot that may initially be covered by a thin film of other covering. Removal of the covering will thus allow the pills to be dispensed through the slot.

30 In order to make the blister pack, the blister sheet is molded from a substantially tear-resistant material, such as a 10 mil PVC, which is substantially transparent to enable the pills to be visible when contained within their respective cavities. However, it is appreciated that the blister sheet may be made from a variety of opaque, transparent or other known materials and not depart from the scope of the

present invention. In particular, the first blister sheet 404 and second blister sheet 412 are preferably molded and constructed such that the first blister sheet has a plurality of blisters aligned in one or more columns or rows and a turnable blister associated therewith, and the second blister sheet has one or more first channels extending in the same direction as the columns or rows from the blister sheet and a second channel running transversely to the one or more first channels. Each of the blisters includes a cavity for housing a pill.

It is appreciated that the twistable or rotatable blister is preferably a separate element so that it may be rotated in relation to the first blister sheet. While a rotatable blister having a pill-shaped cavity to facilitate the grasping and rotation of the blister is shown and disclosed, it is appreciated that the blister also may comprise bulges comprising grasping surfaces of different sizes and shapes. Additionally, it is appreciated that the blister may be turned using any known means including, but not limited to, a slot for insertion of an object such as, but not limited to, a coin or key-like object, whereby the coin or other object may be turned, twisted or pushed after it is placed within the slot to turn the blister.

Once the blister sheets are molded, the pills may then be placed in the cavity of the blister. With the pills inside the cavity of the blister, a foil sheet 440 or other cover is attached to the bottom of the blister sheet 404. Although it is preferred that a thin film or foil sheet be used, it is appreciated that the dispensing slot may be uncovered or covered by other means. After the pills are inserted into the cavities and covered by the foil cover, the blister sheet may then be attached to the second blister sheet in a known way including, but not limited to, adhesive, tape and/or staples and the like.

In order to form the housing, the housing sheet is folded along a scored line 442 separating the top sheet 420 and the bottom sheet 422. With the blister sheets arranged in between the top and bottom sheets 420, 422, the top and bottom sheets may then be fixedly attached to one another using a heat-activated or other type of adhesive or any known method such as, but not limited to, tape, staples and/or other fasteners to securely retain the sheets together and prevent tampering of the blister pack. The housing also may be folded along additional scored lines 444, 446 to provide a cover 424 for the blister pack. It is appreciated that the foregoing description represents a preferred method of making the blister pack of the present invention and that the invention is not limited to this particular method.

In order to remove the pills, the cavity 407 of the blister 406 is depressed to push a pill 408 through the foil sheet and into the respective first channel. The blister pack may then be tilted or moved to allow the pill 408 to travel down the first channel 414 and into the second channel 436. In the preferred embodiment, the turnable or rotatable blister 410 includes a flange 434 that initially blocks passage of the pill 408 to the dispensing slot 426 prior to activation. In the preferred embodiment, the flange includes a hole or gap 439 that is sized to allow for the pill 408 to travel through the dispensing slot 426 to be dispensed. In operation, rotation of the blister 410 moves the flange 434 away from the slot 426, thereby aligning the hole 439 with the dispensing slot 426 to allow the pill 408 to be dispensed from the blister pack.

It is further appreciated that the rotatable blister may be temporarily locked into a closed or open position. While it is appreciated that the blister may be locked into position in one of a variety of known ways, one embodiment comprises a push and turn blister. As shown in FIG. 15, the rotatable blister, generally designated by the numeral 410 includes at least one retaining member 450 that extends downwardly from the rotatable blister 410. In a preferred embodiment, the retaining member has a body 456 and a retaining end 458. The second blister sheet preferably includes a substantially circular or semi-circular member 459 that is substantially the same size as the center section 452 of the rotatable blister 410, but it is appreciated that it may be of other shapes and sizes. The circular member 459 preferably includes a plurality of recesses or holes 454 for accepting the retaining end 458 of the retaining member 450. When not in use, the retaining end 458 of the retaining member 450 is preferably positioned in one of the recesses 454 such that the dispensing slot 426 is covered by the flange 434 and the blister 410 is prevented from being rotated. Pushing on the blister 410 displaces the retaining end 458 of the retaining member 450 from the recess 454 and allows the blister 410 to be rotated. In order to allow the blister to be rotated, the second blister sheet 412 preferably includes a groove or channel 457 that is sized to permit the retaining end 458 to move between the two recesses. Once rotation begins, the blister 410 preferably no longer needs to be pushed. Rotation of the blister will continue until the retaining end of the retaining member passes over and falls into the next recess, whereby the flange will be removed from the traverse second channel to allow the pill to proceed to the dispensing slot to be dispensed.

Furthermore, it is appreciated that the traverse second channel or dispensing slot may be temporarily blocked in any number of ways including, but not limited to, a slidable panel or wall that may selectively block passage of the pill. It is appreciated that in order to block passage of the pills to the respective dispensing slot, the second  
5 channel 436 of the second blister sheet 412 may include a slot or hole in its sidewall 455 to allow a wall or other member to be inserted into the second channel 436 to block passage of the pill to the dispensing slot 426.

FIG. 16 shows another embodiment of a substantially childproof and senior-friendly pill dispensing mechanism for use with the blister packs of the type shown in  
10 FIGS. 13 and 14. The pill dispensing mechanism, generally identified by the reference number 460, comprises a cover member 462 that is slidably housed within a cover member channel 464 to permit the cover member 462 to be slid to reveal the dispensing slot 466 for dispensing the pill.

In the preferred embodiment, when in a first position designated by reference  
15 letter A, the cover member 462 covers the dispensing slot 466, thereby preventing the housed pill from being dispensed. By moving or sliding the cover member 462 within the cover member channel 464 to a second position generally designated by the letter B (shown in phantom), the dispensing slot 466 is uncovered, thereby allowing the pill to be dispensed through the slot. The cover member 462 may thereafter be pushed  
20 back into position A to prevent further dispensement of any pills. While the embodiment shown and disclosed requires the cover member to be manually moved between position A and position B, it is appreciated that the cover member may be automatically returned to position A through a known way such as, but not limited to, springs, rubber bands, or other elastic-like elements serving to bias the cover to a  
25 closed position. It is further appreciated that the cover member may initially be prevented from movement within the cover member channel through the use of a zipper strip 468 that is initially removably attached to the cover member in a known way such as, but not limited to, kiss-cut or other detachable methods. Removal of the strip thereby releases the cover member and allows it to be moved or to slide within  
30 the cover member channel to prevent pills from being dispensed.

While blister packs for dispensing pills are shown and described, it is also appreciated that the tear and cut resistant material disclosed above may be used for other blister packs, such as clamshells, other pill dispensers and the like. Referring

now to the drawings, and particularly to FIGS. 17 and 18, the improved product packaging of the present invention, generally designated by the numeral 500, is shown having a housing 506 and a display chamber 502. While a clamshell embodiment having a box-shaped chamber is shown and disclosed, it is appreciated that the present invention may be used with any number of chambers of any known size and shape and with any number of different types of packaging for products and not depart from the scope of the invention.

The housing is preferably made from a SPS board coated on one side with a uni-directional laminated material so that when two housing sheets having grains 540 and 550 are placed on top of one another such that the grains overlap, the criss-crossing grains 560 of the materials adds strength to the housing and protects against tearing or tampering in two directions. A suitable coating is manufactured under the trademark VALERON™ by Valeron Strength Films. While Valeron is made from a polyethylene material, other such coatings such as, but not limited to, polypropylene or polyester may be used. The material used also is preferably printable to allow for advertising, promotional or other information to be displayed on the housing. While a SPS board with a cross-laminated coating is preferred, it is appreciated that other materials having sufficient strength to resist tearing including, but not limited to, cloth films, cloth and plastic films, heat sealable boards and other coatings, also may be used and not depart from the scope of the present invention. Examples of cloth films and cloth and plastic films include those films sold under the names SCRIMM and CLAFF.

As shown in FIG. 18, the housing 506 is preferably made from a single sheet of material having a scored line 508 to facilitate the folding of the top half 510 onto the bottom half 512 of the sheet to form the blister pack 500. While the housing is shown as being formed from a single sheet, it is appreciated that it may be formed from two or more sheets that are then laminated, affixed or otherwise secured or placed together. The top sheet 510 of the housing of the blister pack includes an opening 514 sized to accommodate a display chamber 502 for displaying products or other materials such as labels (not shown) or the like. The opening may be of any shape or size to accommodate a suitable display chamber. Furthermore, it is appreciated that the housing may have any number of openings to accommodate a number of chambers and not depart from the scope of the present invention.

The display chamber 502 preferably extends outward from the housing sheet in order to house the product or label and is preferably made of a substantially transparent material such as a PVC to enable the contents inside the display chamber to be viewed, but may be made of other known materials and not depart from the scope of the present invention. To prevent objects from tampering with or damaging the blister pack, it is preferred that the display chamber be sized to fit snugly within the opening so that the tamper-resistant sheet of the housing substantially surrounds the perimeter of the open end of the display chamber. In order to secure the display chamber within the housing, a rim 516 may extend around the bottom or open end 518 of the display chamber 502 such that when the display chamber 502 is inserted through the opening 514, the rim 516 abuts with the underside 520 of the top half 510 of the sheet to prevent the display chamber 502 from being pulled through the opening 514. While a contiguous rim is shown in the figures, it is appreciated that the display chamber may be retained by a non-contiguous rim, a series of tabs or other suitable means such as adhesives and/or staples and the like.

With the display chamber inserted into the opening, a product or label may be placed within the display chamber in the proper orientation for display. The two housing halves or portions are then closed together about the scored line and securely affixed. The two halves are preferably affixed together using a heat-sealed adhesive, although it is appreciated that other types of adhesives or attaching means may be utilized and not depart from the scope of the present invention.

The packaging 500 may also include a hole or slot 504 at the upper end of the packaging or elsewhere that is sized to enable the packaging to be placed onto a rod or peg board (not shown) at the point of sale for sale or display. Because of the cross sectional characteristics of the housing, the hole is reinforced to prevent tearing or manipulation.

While the embodiment of the housing of the product packaging is shown and disclosed as having a display chamber that is transparent or substantially transparent, it is appreciated that the chamber may be made of a material or coated with a material that is opaque or substantially opaque, whereby the items contained within the chamber would be substantially hidden. This opaque display chamber would be well suited for a product that is either small, unattractive or otherwise unsuitable for display. Attractive graphics and/or product information could thus be used on the display chamber as well.

An example of an opaque chamber is shown in FIG. 19. In the preferred embodiment, the chamber 600 may be used with a housing of the kind shown in FIGS. 17 and 18. While the chamber is preferably substantially box-shaped with a top 602 and four walls 604, it is appreciated that the chamber may be of any known shape and size and not depart from the scope of the present invention. It is further appreciated that the chamber may be sized and shaped to facilitate the stacking of multiple yet to be used chambers during the manufacturing process. For example, it is appreciated that angles may be incorporated into the walls 604 of the chamber 600 or other features incorporated therein, to permit multiple chambers to be nested.

While the material for the chamber may be made from a wide variety of materials, it is preferred that the material be of the type known to protect against tearing or tampering. An example of such a material is a SPS board coated on both sides with a uni-directional material such as VALERON™ such that the grains criss-cross to add strength to the chamber. It is also appreciated that the chamber may comprise two layers of SPS board that are coated with a uni-directional laminated material so that when the two layers are placed on top of one another such that the grains 612, 614 overlap, the criss-cross grains of the material add strength to the chamber and protect against tearing or tampering in two directions.

While Valeron is made from a polyethylene material, other such coatings may include, but are not limited to, polypropylene or polyester. The material used also is preferably printable to allow for advertising, promotional or other information to be displayed on the housing. While a SPS board with a cross-laminated coating is preferred, it is appreciated that other materials having sufficient strength to resist tearing, including, but not limited to, cloth films, plastic and cloth films, heat sealable boards and other coatings, also may be used and not depart from the scope of the present invention. Examples of cloth films and cloth and plastic films include those films sold under the names SCRIMM and CLAFF. The chamber thereby acts to prevent consumers from seeing the product, as well as preventing undesired removal of the product from the package prior to purchase.

In order to further assist in the prevention of theft of the blister pack and its contents, the interconnection between the walls of the chamber are preferably substantially seamless. Accordingly, unlike the known product packages, the walls will not tend to separate or be easily separated by the consumer to facilitate the unwanted opening of the chamber before purchase of the product. Additionally, the

corners and/or sides of the chamber are preferably reinforced to further prevent any tampering of the chamber. Examples of chambers having reinforced corners and sides include, but are not limited to, chambers having their edges reinforced with fiber-reinforced tape or a fiber laminate, similar to a set-up box.

5           It is further appreciated that the chamber may also contain a security device such as, but not limited to, a product sensor/transmitter that will set off an alarm to indicate that a consumer or customer may be passing a security sensor and thereby leaving the store with an unpurchased product.

10           To prevent objects from being inserted to tamper with or damage the blister pack, it is preferred that the chamber 600 be sized to fit snugly within the opening 514 so that the tamper-resistant sheet of the housing 510, 512 surrounds substantially the perimeter of the chamber 600. In order to secure the chamber 600 within the housing 510, 512, a lip or rim 608 may extend from one or more of the bottoms 610 of the walls 604 of the chamber 600 such that when the chamber is inserted through  
15           the opening 514, the lip 608 abuts with the underside 520 of the top half 510 of the sheet to prevent the chamber 600 from being pulled through the opening 514. While separate lips are shown, it is appreciated that the chamber may be retained by a contiguous lip, a series of tabs, or any other suitable means such as adhesives and/or staples and the like.

20           In order to gain access to the product or information contained within the display chamber, it is understood that the housing may be cut with scissors or a knife. Because of the material used for the housing, the resulting cut surfaces will be substantially free of sharp edges, thereby making the product package safer to use.

25           It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention, but it is understood that this application is limited only by the scope of the appended claims.

**CHILDPROOF, SENIOR FRIENDLY BLISTER PACK****Claims**

- 5           1.       A childproof and senior-friendly blister pack for dispensing objects wherein the blister pack comprises:
- one or more blisters, wherein each blister includes a cavity for housing one or more of said objects and wherein each cavity has a longitudinal axis;
- a card comprising a first face and a second face;
- 10           at least one blister being movably retained by said card about said first face, so as to enable movement of the blister from a storage position to a dispensing position;
- said second face having a dispensing opening formed therein; and
- said longitudinal axis of the cavity being substantially aligned with said dispensing opening when said blister is moved to said dispensing position, so as to
- 15           enable dispensing of said object through the dispensing opening.
2.       The invention according to Claim 1 wherein said blister pack further comprises:
- retaining means having first and second positions;
- 20           said retaining means operably associated with said blister for preventing movement of said blister when said retaining means is in the first position; and
- said retaining means enabling movement of said blister when said retaining means is in the second position.
- 25           3.       The invention according to Claim 1 wherein said object comprises a substantially pill-shaped object.
4.       The invention according to Claim 1 wherein said dispensing opening comprises a substantially slot-shaped opening, sized to enable said object to pass
- 30           therethrough when said blister is in said dispensing position.
5.       The blister pack of claim 1 which further comprises means for covering the dispensing opening.

6. The blister pack of claim 1 wherein the blisters further include means to facilitate the turning of the blisters.

7. The blister pack of claim 1 wherein the card further includes a cover  
5 operably associated therewith.

8. The blister pack of claim 1 wherein the card is made from a single sheet.

9. The blister pack of claim 1 wherein the card is made from at least two  
10 sheets.

10. The blister pack of claim 5 wherein the covering means is a foil sheet.

11. The blister pack of claim 1 wherein the longitudinal axis of the cavity  
15 in the storage position is approximately at about a 90-degree angle from the longitudinal axis at the dispensing position.

12. The blister pack of claim 2 wherein the retaining means is a zipper  
20 strip operably affixed to said blister in said storage position and separated from said blister in said dispensing position.

13. The blister pack of claim 3 wherein the substantially pill-shaped object  
is a pill and the card further comprises a plurality of symbols surrounding said blister,  
25 wherein the longitudinal axis of the cavity of the blister is initially aligned with one or more symbols to indicate information regarding the object.

14. The blister pack of claim 13 wherein the symbols comprise a clock  
face having a plurality of numbers surrounding the blister, and wherein the cavity of  
30 the blister is initially aligned with a number on the clock face to indicate when to take the pill.

15. The blister pack of claim 13 wherein the symbols comprise a clock  
face having a plurality of numbers surrounding the blister, and wherein the dispensing

slot is initially aligned with a number on the clock face to indicate when to take the pill.

16. The blister pack of claim 1 wherein the card comprises a first face  
5 comprising a substantially tear-resistant material having grains aligned in a first direction and a second face made from a substantially tear-resistant material having grains aligned in a second direction substantially contrary to the grains of the top half so as to result in a substantially crossing pattern of grains to provide resistance to tearing in multiple directions.

10

17. The blister pack of claim 16 wherein the substantially tear-resistant material comprises a SPS board coated with a polyurethane material.

18. The blister pack of claim 12 wherein the blister sheet comprises at least  
15 three blisters aligned in at least one row, wherein adjacent blisters are attached to one of the zipper strips, the first of said blisters is attached to one zipper strip and each of the other blisters of the at least three blisters is attached to two zipper strips such that removal of one of the zipper strips only releases one blister.

20 19. A childproof and senior-friendly blister pack for dispensing pills, wherein the blister pack comprises:

a blister sheet having one or more blisters, wherein each blister includes a cavity for housing a pill, and wherein each cavity has a longitudinal axis;

25 a retaining member extending adjacent to the blisters, wherein the retaining member is removably attached to the blisters to prevent the blisters from being turned;

a housing encompassing the blister sheet and having one or more dispensing slots therein, wherein each of the dispensing slots has a longitudinal axis, and wherein the longitudinal axis of each of the dispensing slots is not initially aligned with the longitudinal axis of the corresponding cavity of the blister; and

30 whereby the retaining member is at least partially removable so as to release at least one of the one or more blisters to allow the blister to be rotated or turned until the longitudinal axis of the cavity of the blister substantially aligns with the longitudinal axis of the dispensing slot to allow for the pill to be dispensed through the dispensing slot.

20. A method for dispensing an object from a blister pack comprising the steps of:

- 5       filling a blister having an interior cavity with an object by placing said object substantially within said cavity, said cavity having a longitudinal axis;
- forming said blister into a blister pack by combining it with a card assembly having a dispensing opening formed therein, such that said blister is operably retained by said card and said longitudinal axis is not aligned with said dispensing opening in a storage position; and
- 10       moving the blister to a dispensing position wherein said object is substantially aligned with said dispensing opening so as to permit passage of said object through said opening; and, dispensing the object through the dispensing opening.

21.     The method of Claim 20 wherein said method further includes

15     releasing said blister for movement by moving a releasing member, prior to moving said blister to said dispensing position.

22.     The method of Claim 20 wherein said step of moving of the blister comprises rotation of said blister.

20

23.     The method of Claim 20 further including said step of dispensing of the object comprises pushing of the object through said dispensing opening.

24.     The method of Claim 20 wherein said dispensing opening is a

25     substantially slot-shaped opening, sized to enable said object to pass therethrough when said blister is in said dispensing position.

25.     The blister pack of claim 20 wherein the card assembly further comprises a plurality of symbols surrounding said blister, wherein the cavity of said

30     blister is initially aligned with one or more symbols to indicate information regarding the object.

26.     The blister pack of claim 25 wherein the object is a pill and the symbols comprise a clock face having a plurality of numbers surrounding the blisters,

and wherein the cavity of the blister is initially aligned with a number on the clock face to indicate when to take the pill.

5           27.     The method of claim 21 wherein the releasing member is a zipper strip.

          28.     The method of claim 20 wherein the longitudinal axis of the cavity in the storage position is initially at about a 90-degree angle from the longitudinal axis of the cavity when moved to the dispensing position.

10           29.     A childproof and senior-friendly blister pack for dispensing pills, wherein the blister pack comprises:

          a blister sheet having one or more blisters, wherein each blister includes a cavity for housing a pill;

          a retaining member extending adjacent to said blisters, wherein the retaining member is removably attached to the blisters to prevent the blisters from being moved; and

          a housing encompassing the blister sheet and having one or more dispensing slots therein, wherein each of the dispensing slots is not aligned with the pill within the blister;

20           whereby the retaining member is at least partially removed to release at least one of the plurality of blisters to allow the blister to be moved until the pill within the blister substantially aligns with the dispensing slot to allow for the pill to be dispensed through the dispensing slot.

25           30.     The blister pack of claim 29 which further comprises means for covering the one or more dispensing slots.

          31.     The blister pack of claim 30 wherein the means for covering the one or more dispensing slot is a foil sheet.

30           32.     The blister pack of claim 29 wherein the housing comprises a top half made from a substantially tear-resistant material having grains aligned in one direction and a bottom half made from a substantially tear-resistant material having grains aligned in a direction contrary to the grains of the top half to result in a

substantially criss-cross pattern of grains to provide resistance to tearing in multiple directions.

33. The blister pack of claim 32 wherein the substantially tear-resistant  
5 material comprises a SPS board coated with a polyurethane material.

34. The blister pack of claim 29 wherein the housing includes a series of  
channels, and wherein each of the blisters is initially retained at one end of one of the  
series of channels and the respective dispensing slot is located distal from the blister.  
10

35. A method for dispensing pills from a blister pack comprising the steps  
of:  
providing a blister pack having a series of channels, a series of blisters for  
housing the pills, and a series of dispensing slots, wherein each of the series of blisters  
15 are initially retained within one of the series of channels by a retaining member such  
that the blister is not aligned with the dispensing slot;  
at least partially removing the retaining member from the blister pack to  
release at least one of the blisters;  
moving the blister along the channel in the blister pack until the channel is  
20 substantially aligned with the corresponding dispensing slot; and  
depressing the blister to push the pill through the dispensing slot.

36. A childproof and senior-friendly blister-pack for dispensing objects  
comprising:  
25 a body having a blister including a cavity for housing one or more of said  
objects capable of releasing said object when depressed;  
an object dispensing mechanism operably associated with said body for  
dispensing the object from the blister pack; and  
said body further having a channel communicating with said cavity within said  
30 body and said object dispensing mechanism, so as to receive and enable movement of  
said object from said cavity to said object dispensing mechanism, when released from  
said cavity, to allow the object to be dispensed.

37. A method for dispensing pills from a blister pack comprising the steps of:

filling a blister having a cavity with an object to be dispensed, wherein said object can be released from said cavity by depressing said cavity;

5 assembling said blister into a blister pack by combining it with a card assembly having a dispensing opening formed therein, a passageway communicating with said cavity at a first end and said object dispensing opening at a second end, and an object dispensing mechanism having a closed position and a dispensing position and being operably interposed between said passageway second end and said  
10 dispensing opening;

releasing said object from said cavity and into said passageway;

moving said blister pack to enable said object to move from said passageway to said object dispensing mechanism;

opening said object dispensing mechanism; and

15 dispensing the object through the dispensing opening.

38. A childproof and senior-friendly blister pack for dispensing pills comprising:

20 a first blister sheet having one or more blisters, wherein each blister includes a cavity for housing a pill;

a second blister sheet having at least one first channel that is aligned with the blister, wherein the pill may be placed within the channel by depressing the blister;

a pill dispensing mechanism associated with the first or second blister sheet for dispensing the pill; and

25 a housing encompassing the first and second blister sheets;

wherein the pill is dispensed from the blister into the at least one first channel, and then from the first channel to the pill dispensing mechanism to allow the pill to be dispensed.

30 39. The blister pack of claim 38, wherein the second blister sheet comprises a second channel that is connected to and traverses the at least one first channel, wherein the pill travels from the first channel into the second channel and to the pill dispensing mechanism to be dispensed.

40. The blister pack of claim 38, wherein the one or more blisters are arranged in columns that correspond to the at least one channel.

5 41. The blister pack of claim 39, wherein the first or second blister sheet comprises a dispensing slot associated with the second channel and the pill dispensing mechanism comprises a turnable blister having a flange that initially prevents the pill from being dispensed through the dispensing slot.

10 42. The blister pack of claim 41 wherein the turnable blister comprises at least one retaining member and the second blister sheet comprises at least one receiving region for accepting the retaining member to temporarily fix the turnable blister in an open position to allow the pill to be dispensed through the dispensing slot or a closed position to prevent the pill from being dispensed through the dispensing  
15 slot.

43. The blister pack of claim 38, wherein the first or second blister sheet comprises a dispensing slot and the pill dispensing mechanism comprises a cover member and a channel, wherein the cover member slides within the channel between  
20 an open position to allow the pill to be dispensed through the dispensing slot and a closed position to prevent the pill from being dispensed through the dispensing slot.

44. A method for dispensing a pill from a blister pack comprising the steps of:

25 providing a blister pack having a first blister sheet having a series of blisters for housing the pills a second blister sheet having a one or more first channels that are aligned with the blisters of the first blister sheet and a second channel that is connected to and traverses the one or more first channels, and a pill dispensing mechanism that is associated with the first or second channel for dispensing the pills,  
30 wherein each of the blisters has a cavity for containing the pills;

depressing the blister to push the pill through the cavity and into one of one or more first channels;

moving the blister pack to allow the pill to travel down the first channel and into the second channel;

moving the blister pack to allow the pill to travel down the second channel and into engagement with the pill dispensing mechanism; and

activating the pill dispensing mechanism to allow the pill to be dispensed from the blister pack.

5

45. The method of claim 44, wherein the first or second blister sheet has a dispensing slot associated with the pill dispensing mechanism, and the pill dispensing mechanism comprises a cover member and a channel, wherein the step of activating the pill dispensing mechanism comprises sliding the cover member within the channel to uncover the dispensing slot and allow the pill to be dispensed.

10

46. The method of Claim 44, wherein the first or second blister sheet has a dispensing slot associated with the pill dispensing mechanism, and the pill dispensing mechanism comprises a turnable blister associated with the first or second blister sheet, wherein the turnable blister comprises a flange that initially covers the dispensing slot, and wherein the step of activating the pill dispensing mechanism comprises turning the turnable blister to uncover the dispensing slot and allow the pill to be dispensed.

15

47. The method of Claim 46, wherein the turnable blister further comprises at least one retaining member, and the second blister sheet comprises at least one receiving region for accepting the retaining member to temporarily fix the turnable blister in an open position to allow the pill to be dispensed through the dispensing slot or a closed position to prevent the pill from being dispensed through the dispensing slot.

20

25

48. A clamshell package comprising:  
a housing comprising:  
a first portion made from a substantially tear-resistant material having a grain aligned in substantially one direction;  
a second portion made from a substantially tear-resistant material having grain aligned in a direction contrary to said grain of said first portion so as to result in a substantially criss-cross pattern of grain when said first and second portions are placed together so as to provide resistance to tearing in multiple directions; and

30

an opening in the top half of the housing; and  
a display chamber substantially surrounded by said opening of the first portion of the housing and is secured within the housing.

5           49.    The clamshell blister pack of claim 48 wherein the second portion is fixedly attached to the first portion.

10           50.    The clamshell blister pack of claim 48 wherein the first and second portion are made from a printable material.

15           51.    The clamshell blister pack of claim 48 wherein the display chamber includes a rim that abuts against a side of the first portion of the housing when the display chamber extends through the housing to retain the display chamber within the housing.

20           52.    The clamshell blister pack of claim 48 wherein the substantially tear-resistant material is a SPS board coated with a polyethylene material.

25           53.    The clamshell blister pack of claim 48 wherein the display chamber is made from a material that is substantially transparent.

30           54.    The clamshell blister pack of claim 48 wherein the display chamber is made from a material that is substantially opaque.

            55.    The clamshell blister pack of claim 54 wherein the display chamber is made from a substantially tear-resistant material.

            56.    The clamshell blister pack of claim 55 wherein the substantially tear-resistant material is a SPS board coated with a polyethylene material.

30           57.    The clamshell blister pack of claim 55 wherein the display chamber is substantially seamless.

58. The clamshell blister pack of claim 55 wherein the display chamber comprises an exterior, and wherein the display chamber includes graphics on the exterior.

5 59. The clamshell blister pack of claim 48 which further comprises a slot extending through the first and second portions of the housing for use in displaying the products.

60. A blister pack for dispensing objects comprising:  
10 a blister sheet having one or more blisters, wherein each blister includes a cavity for housing an object;  
a housing comprising:  
a first portion made from a substantially tear-resistant material, the first portion having a grain aligned in substantially one direction; and  
15 a second portion made from a substantially tear-resistant material, the second portion having a grain aligned in a direction substantially contrary to the grain of the first portion and attached to the first portion so as to result in a substantially criss-cross pattern of grains to provide resistance to tearing in multiple directions.

20 61. The blister pack of claim 60 wherein the first portion and the second portion are operably attached to each other to retain the one or more blisters therebetween in rotatable fashion.

25 62. The blister pack of claim 60 wherein the object is a pill.

63. The blister pack of claim 60 wherein the substantially tear-resistant material comprises a SPS board coated with a polyethylene material.

64. A clamshell package comprising:  
30 a housing comprising:  
a first portion made from a substantially tear-resistant and printable material having grain aligned in a first direction;  
a second portion made from a substantially tear-resistant material having grain aligned in a second direction substantially contrary to said grain of said first portion

so as to result in a substantially criss-cross pattern of grain when said first and second portions are placed together so as to provide resistance to tearing in multiple directions; and

an opening in the first portion of the housing; and

- 5 a display chamber substantially surrounded by the opening of the first portion of the housing, wherein the display chamber includes a rim that abuts against the underside of the first portion of the housing when the display chamber is substantially surrounded by said first portion to secure the display chamber with respect to the housing, and wherein the display chamber is substantially seamless.

10

65. A clamshell package housing comprising:

a display chamber, wherein the display chamber is substantially seamless and substantially opaque;

a first portion made from a substantially tear-resistant material; and

- 15 a second portion adapted to be attached to the first portion to retain the display chamber therebetween.

66. The clamshell package housing of claim 65 wherein the display chamber further comprises graphics.

20

67. A clamshell package housing comprising:

a display chamber having an interior for containing one or more objects; and

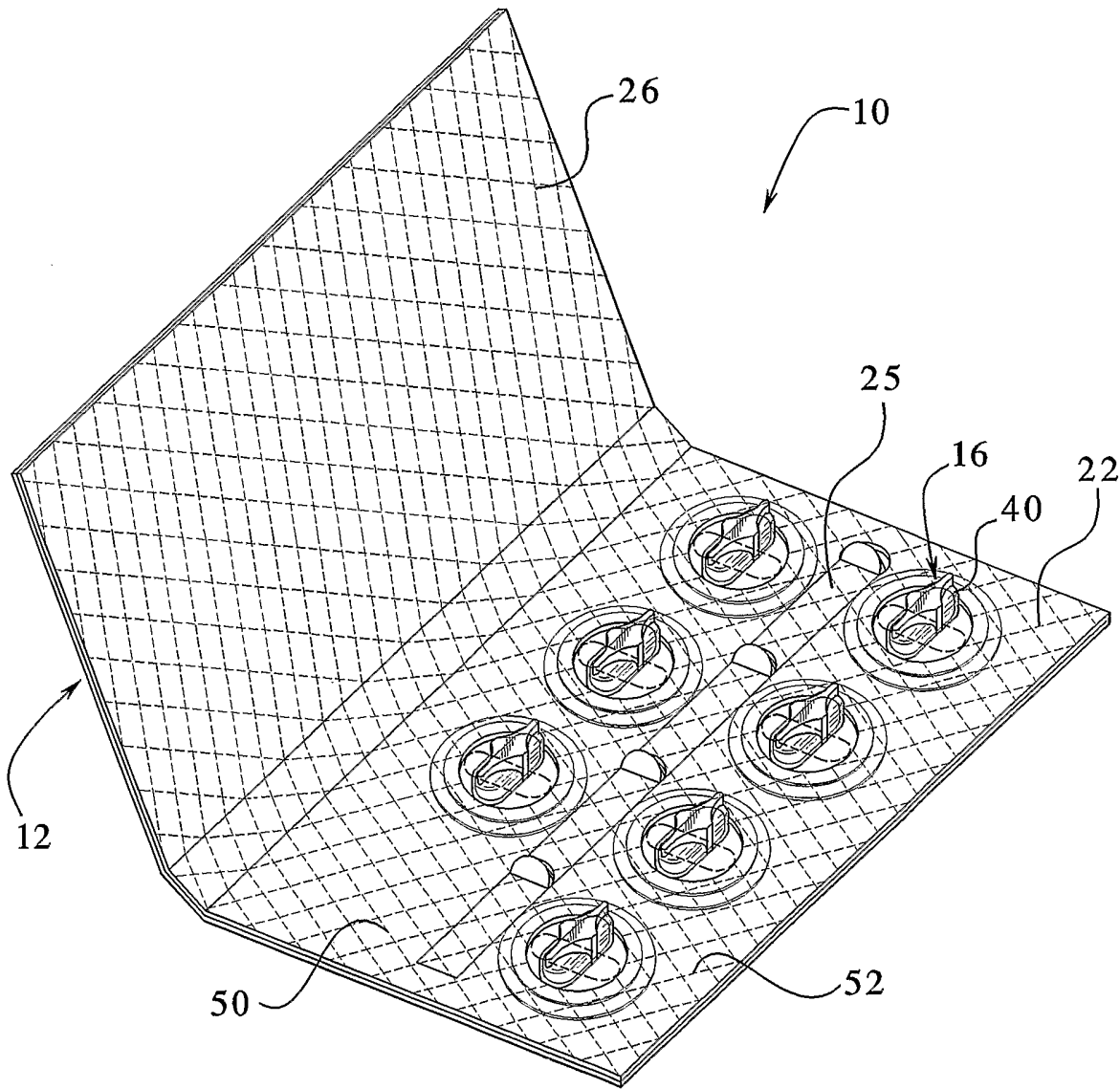
first and second panels of a material having a grain, wherein the first and second panels operably retain the display chamber so as to prevent undesired access

- 25 to the one or more objects; and

wherein the panels when combined have at least two substantially crossing grains when assembled so as to make such panels resistant to tearing in multiple directions.

- 30 68. The clamshell package of Claim 67 wherein said first and second panels are connected along one edge.

FIG.1



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FIG. 2

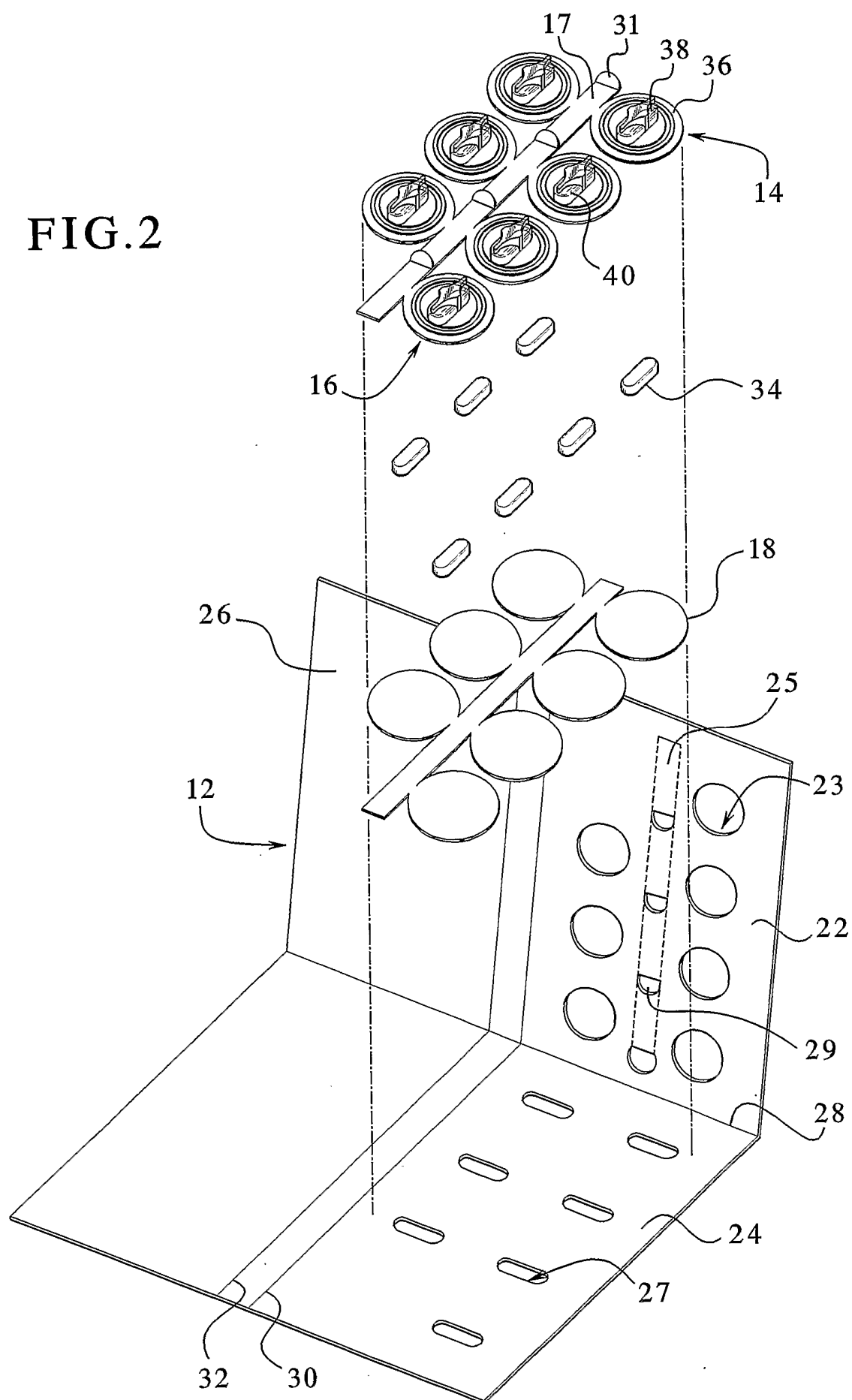
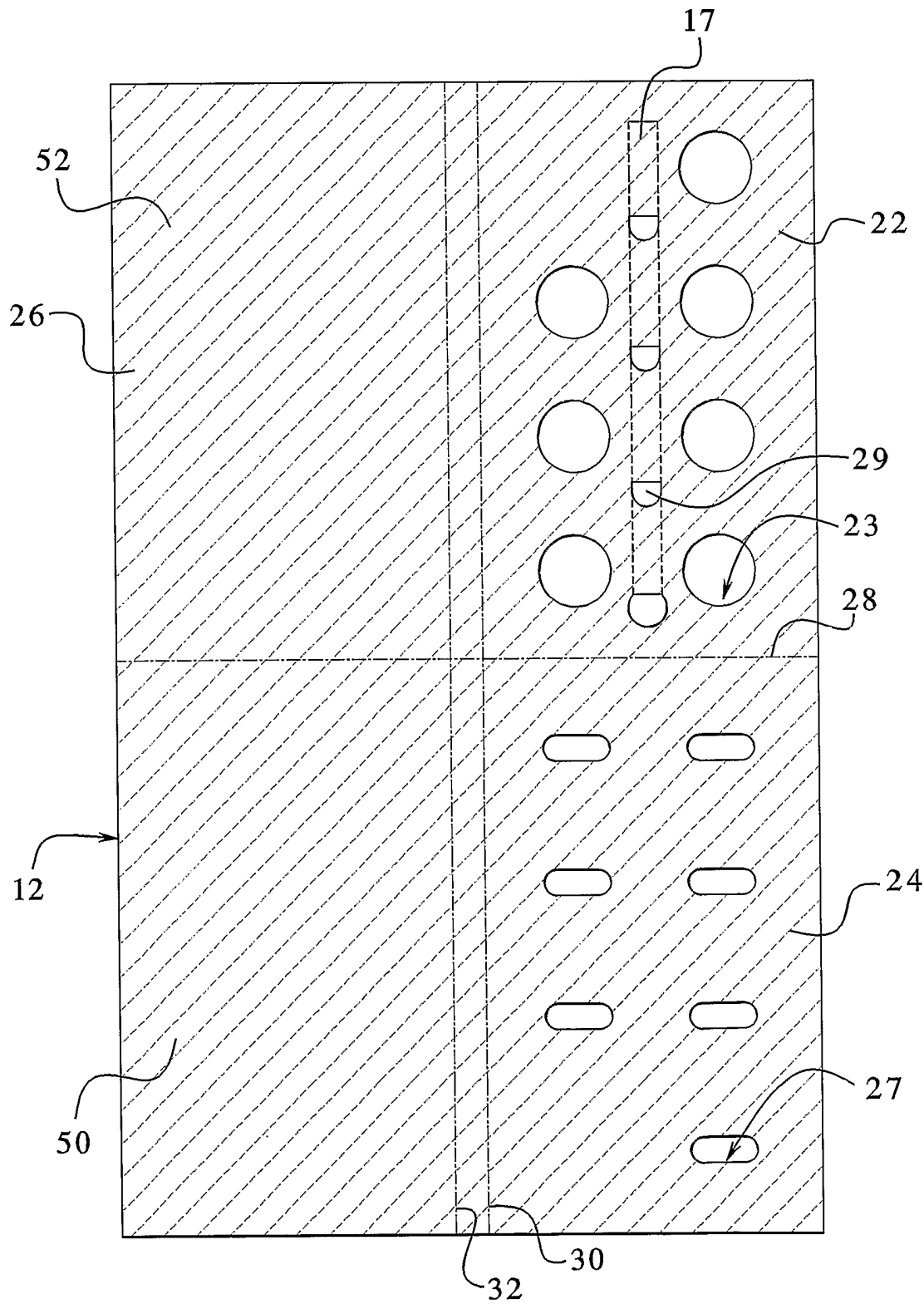
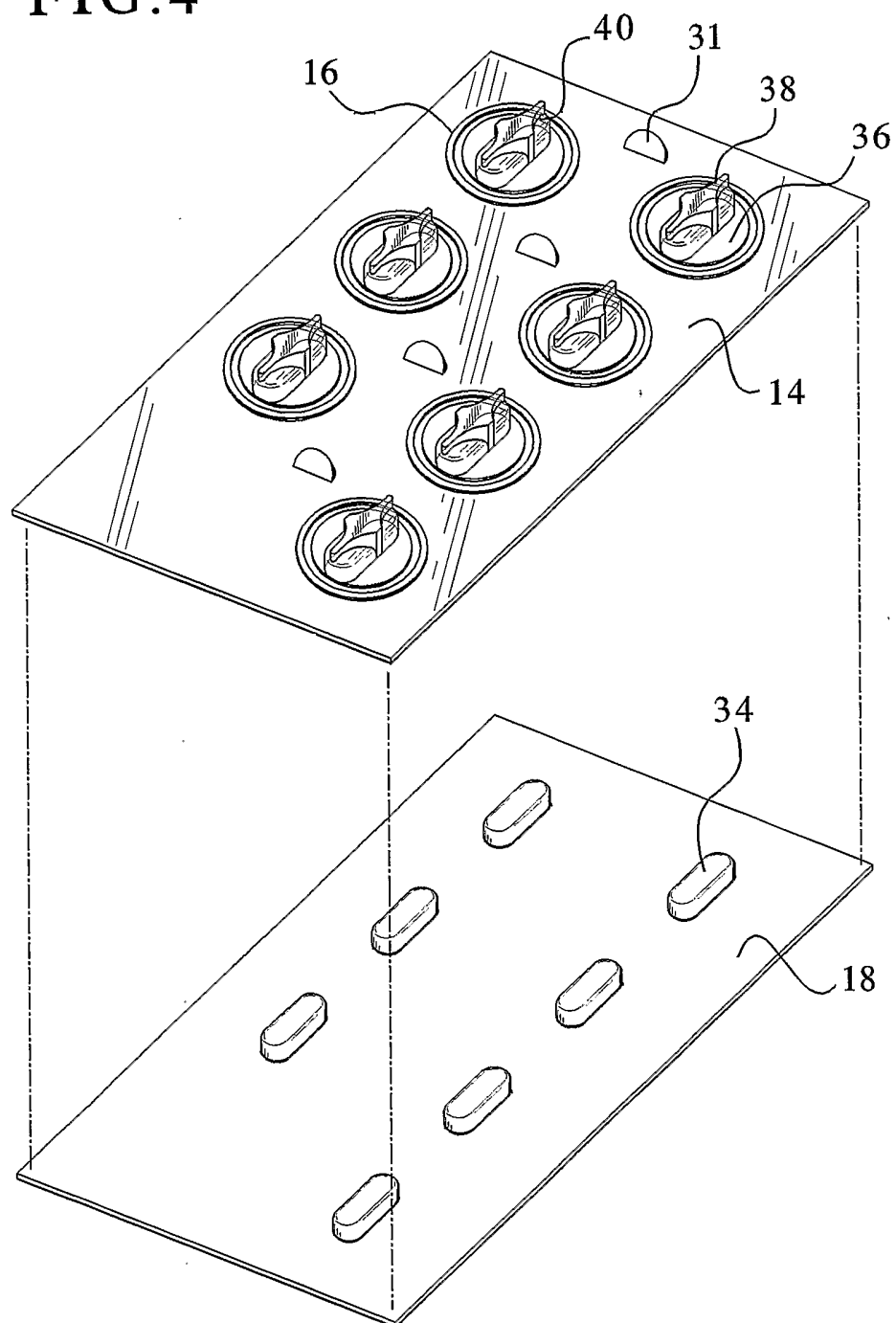


FIG.3



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FIG. 4



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FIG.5

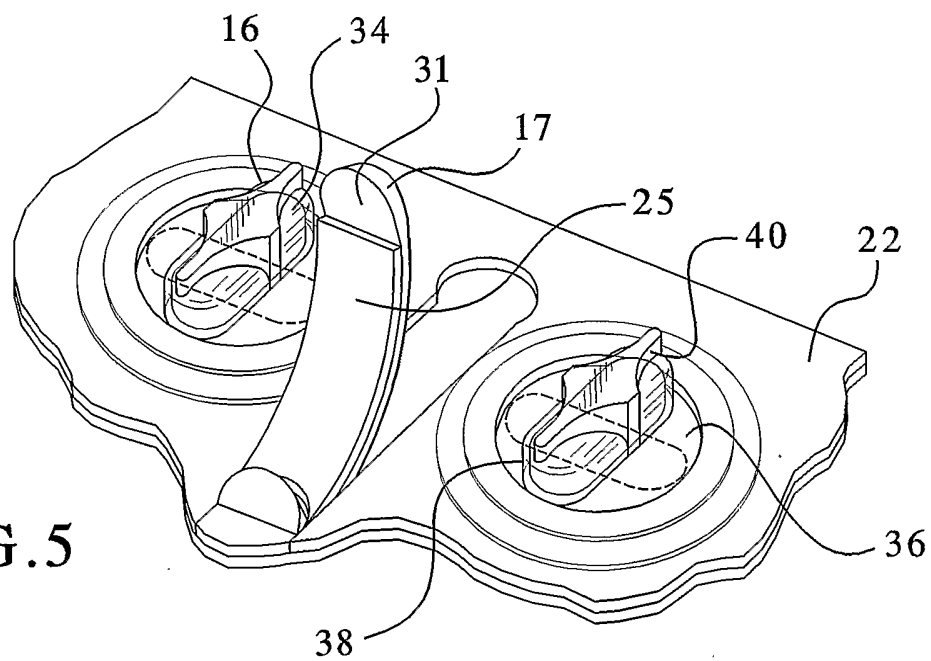
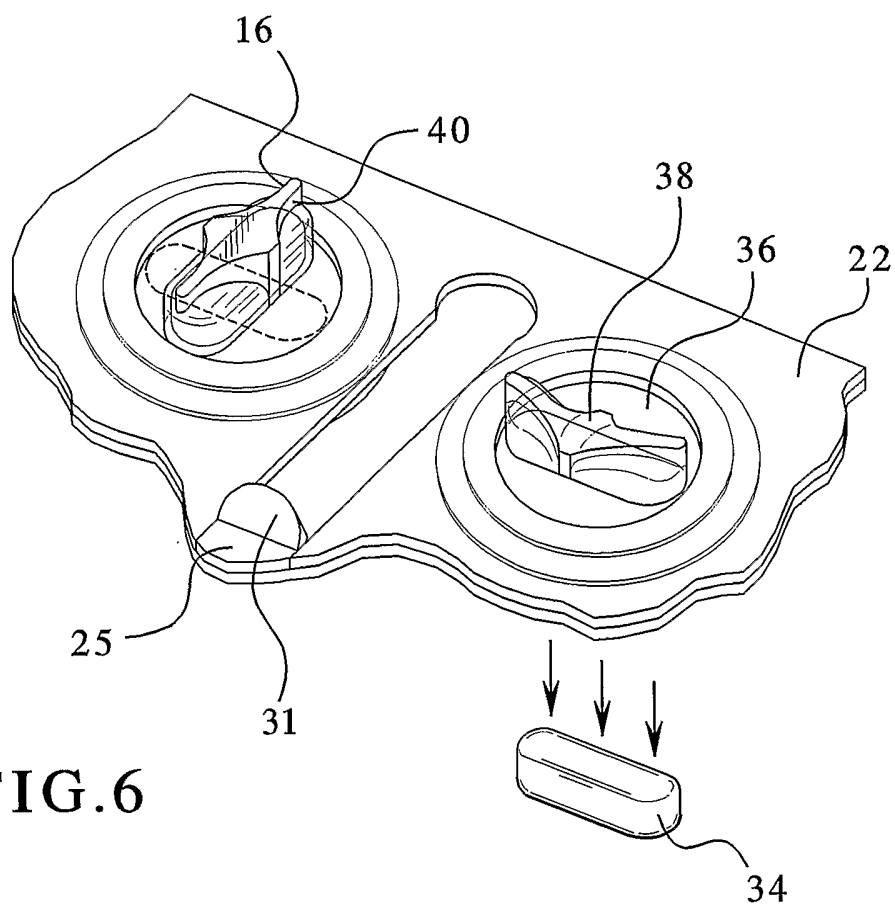


FIG.6



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FIG. 7

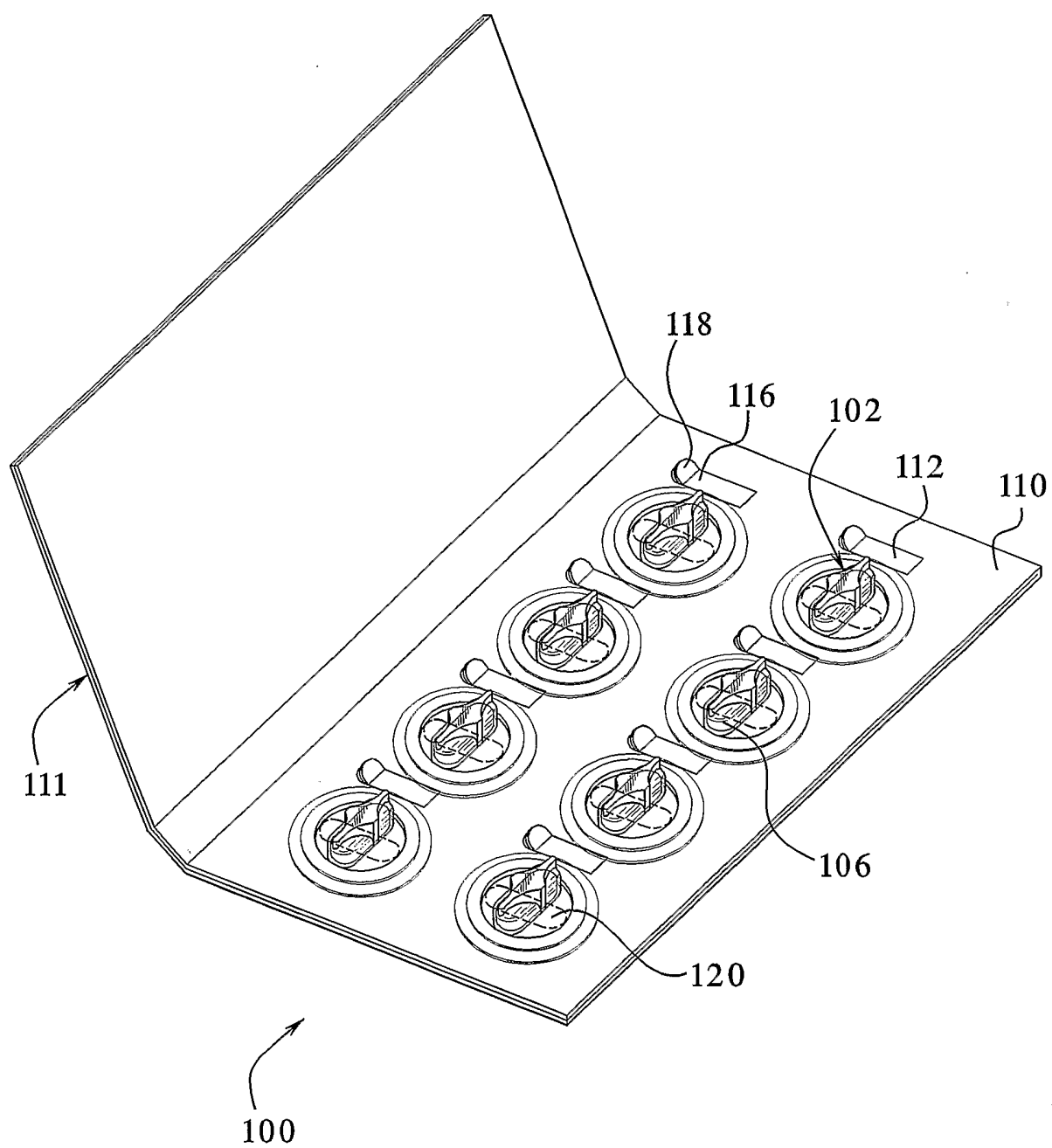
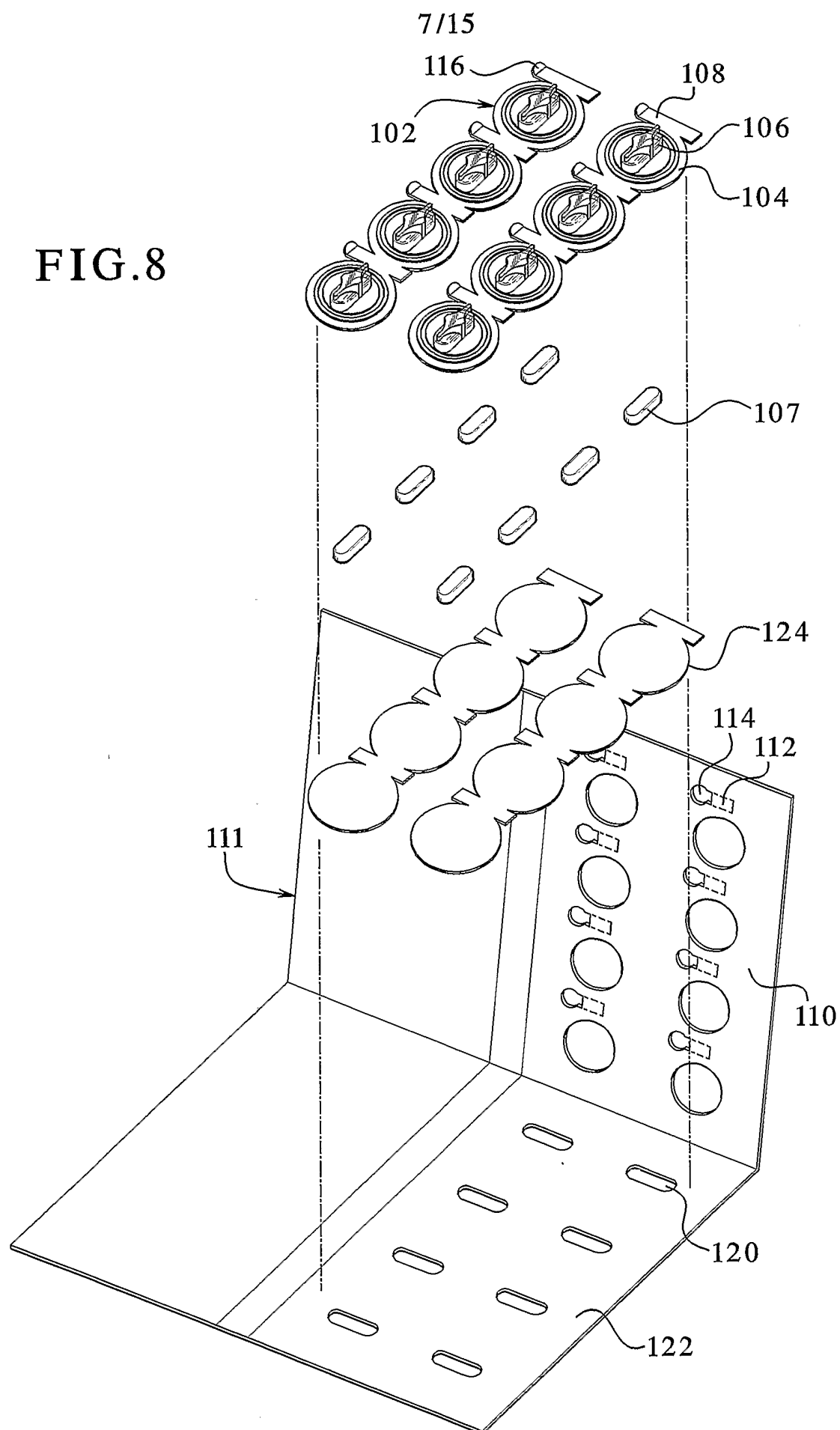


FIG. 8



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FIG. 9

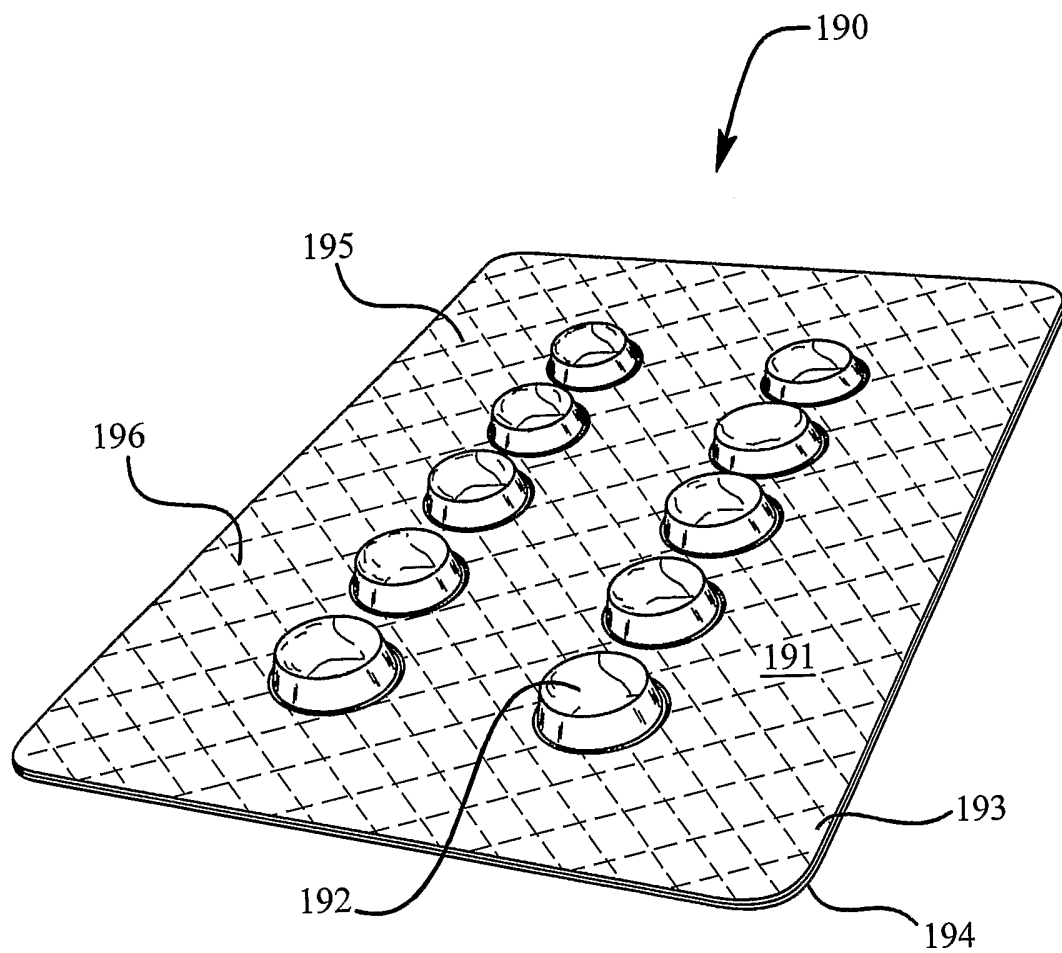
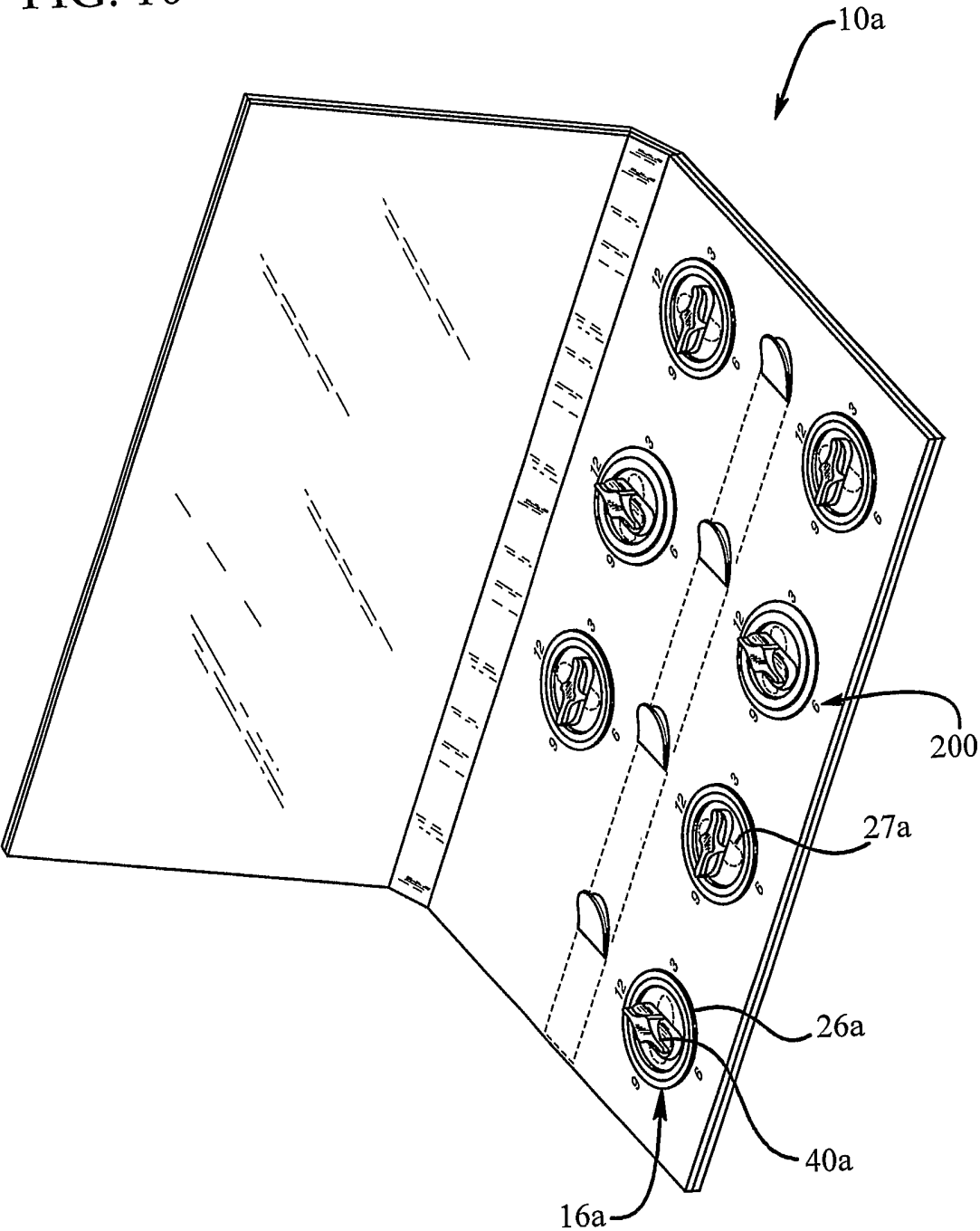


FIG. 10



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FIG. 11

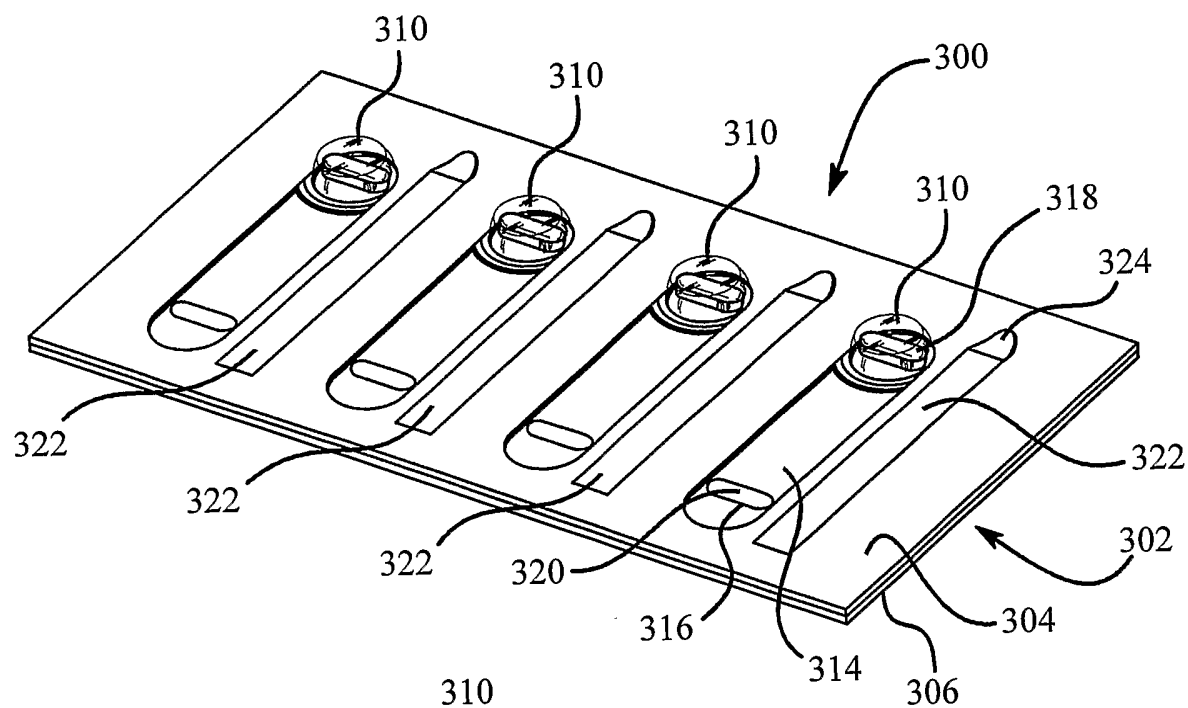
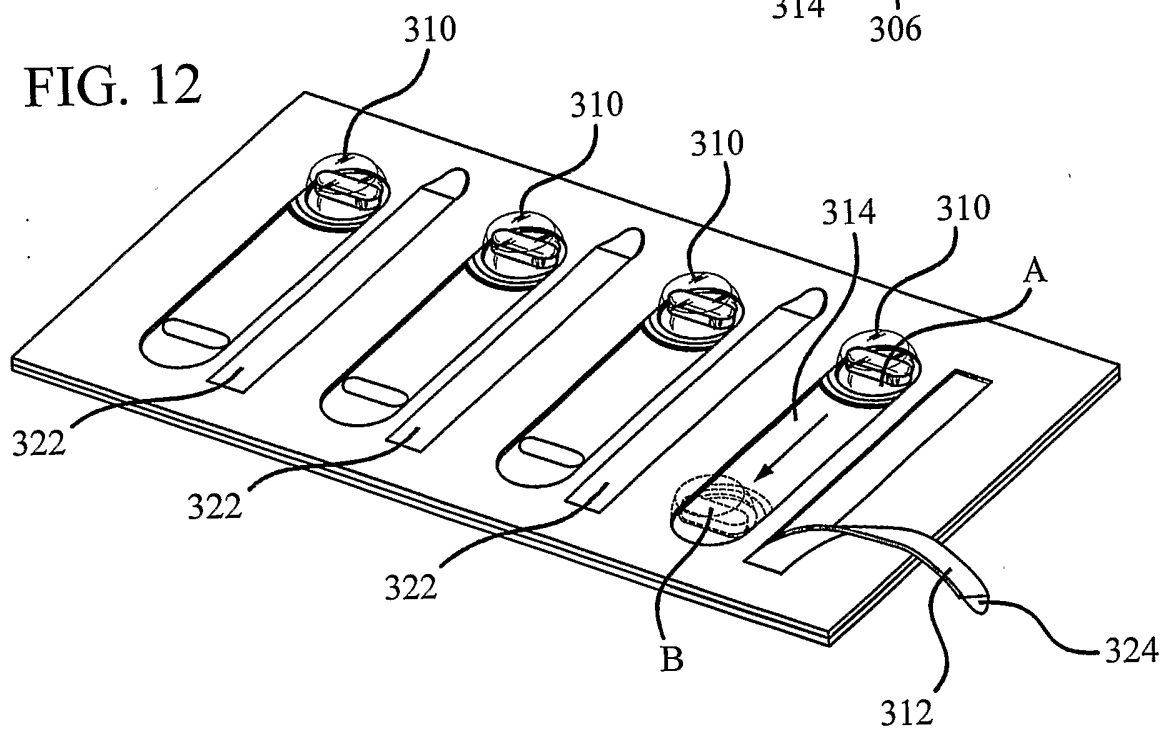
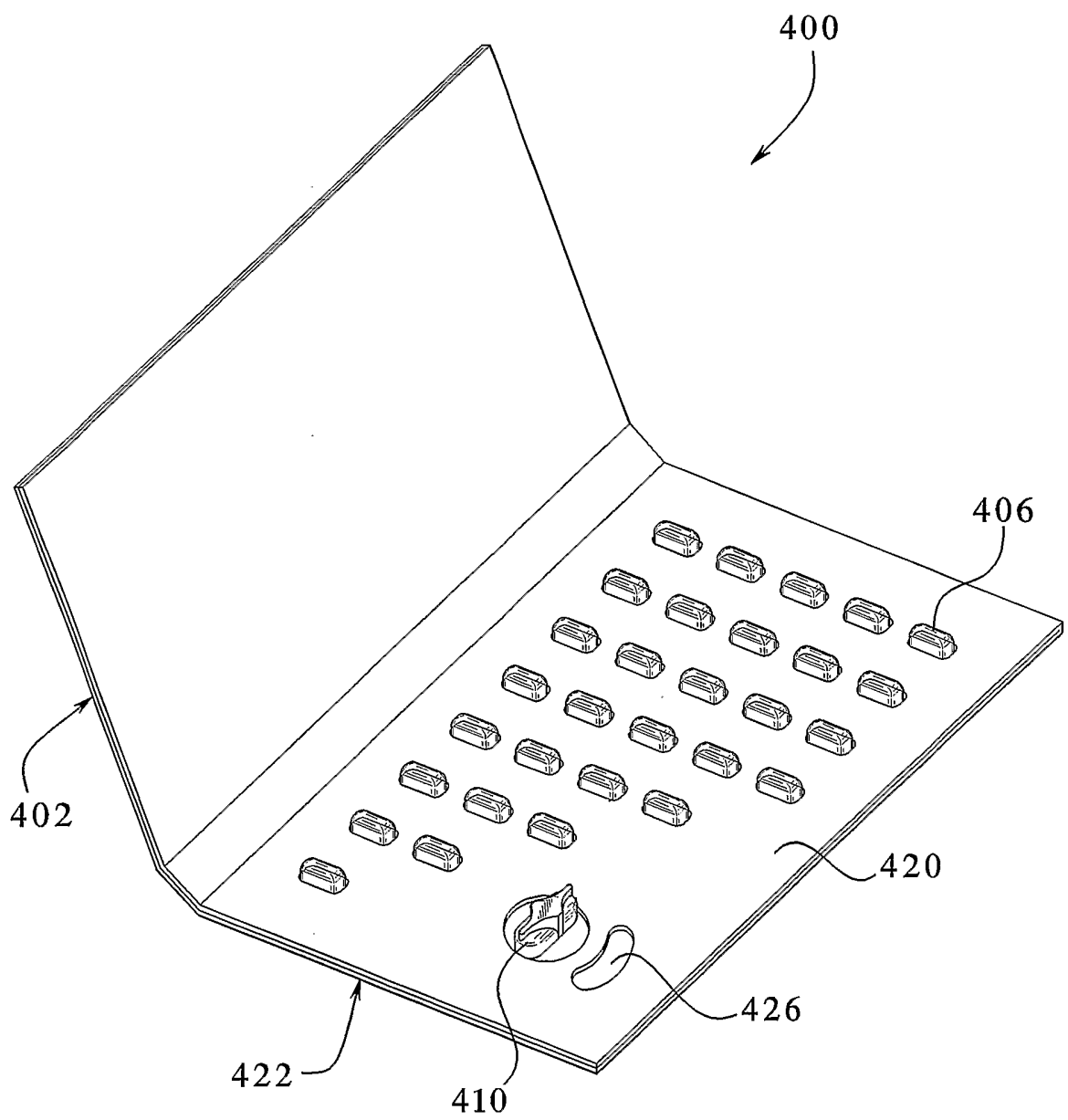


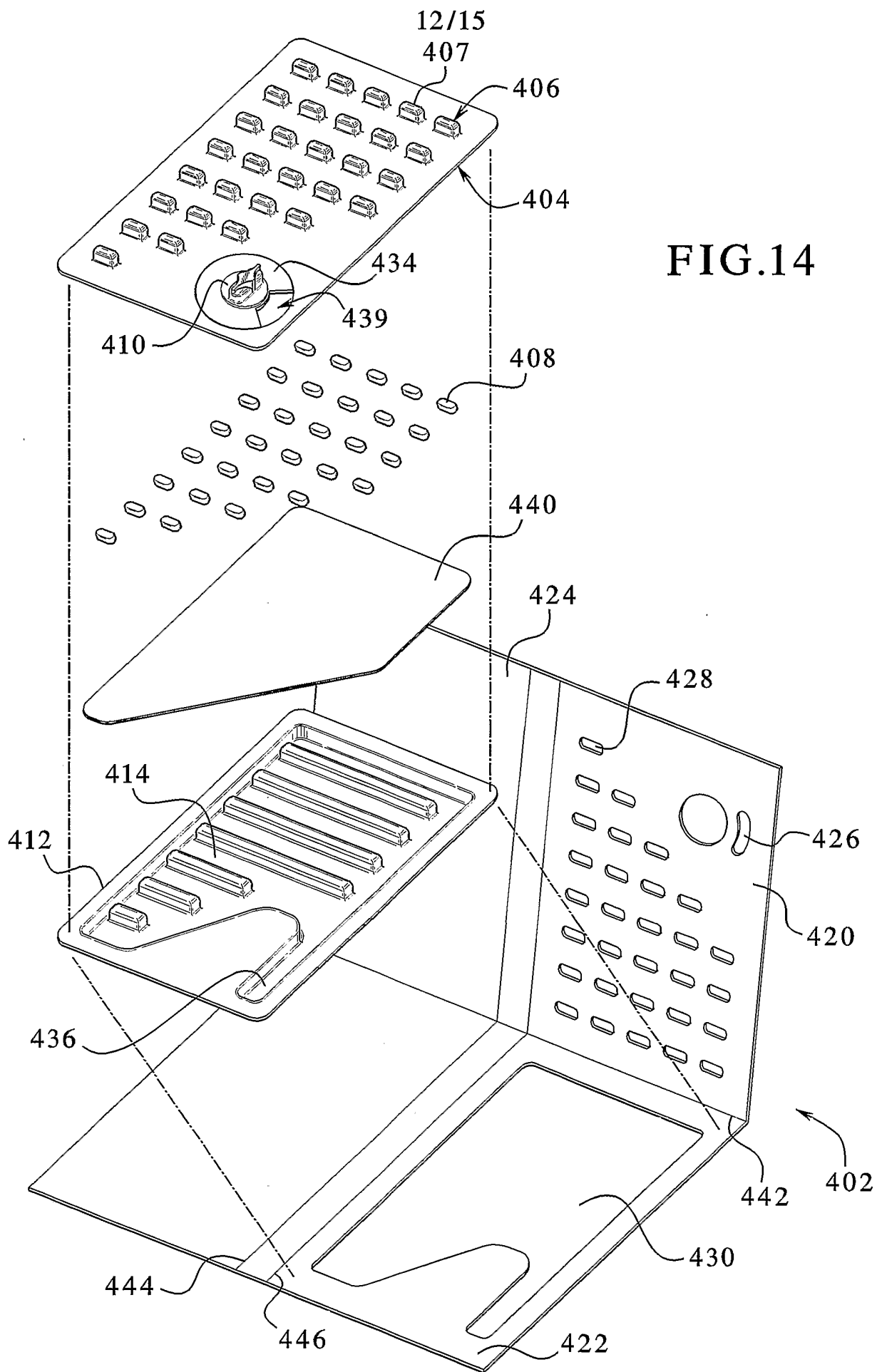
FIG. 12



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FIG.13





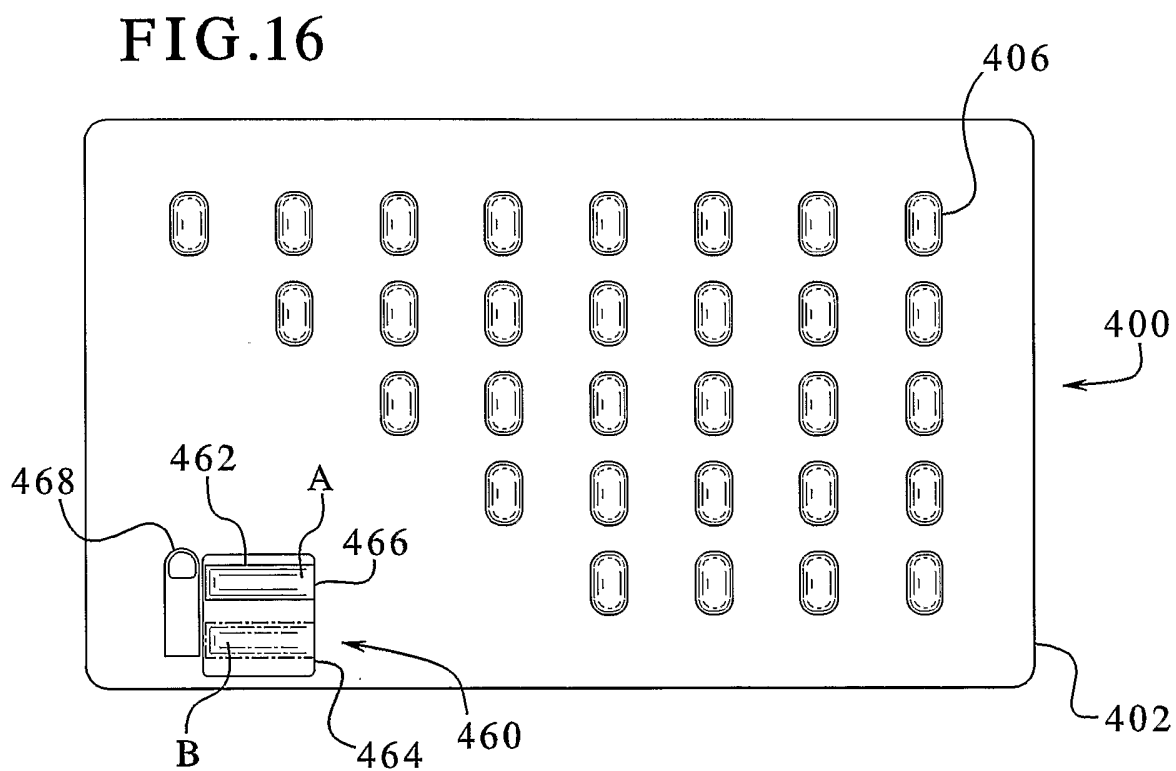
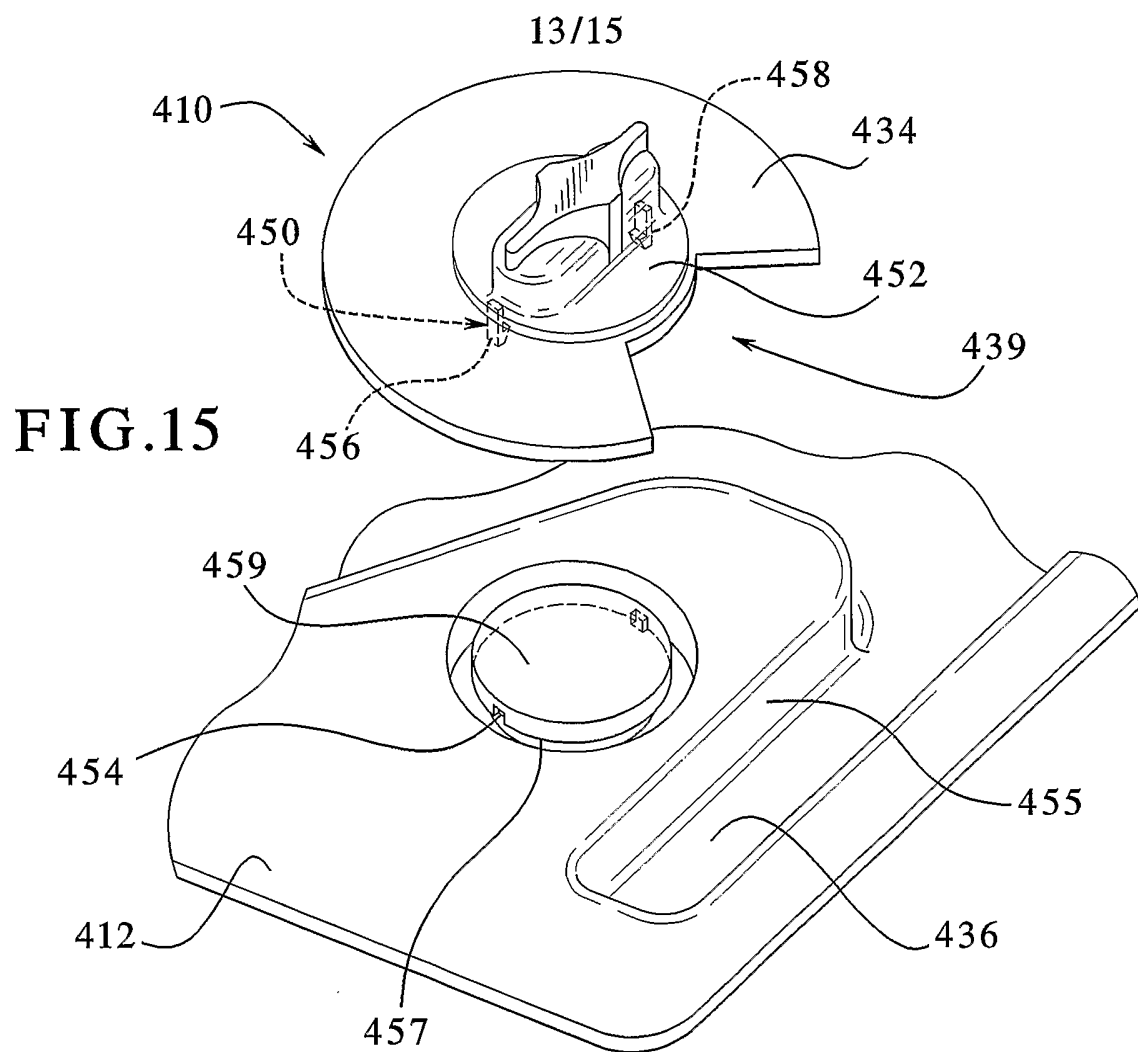


FIG.17

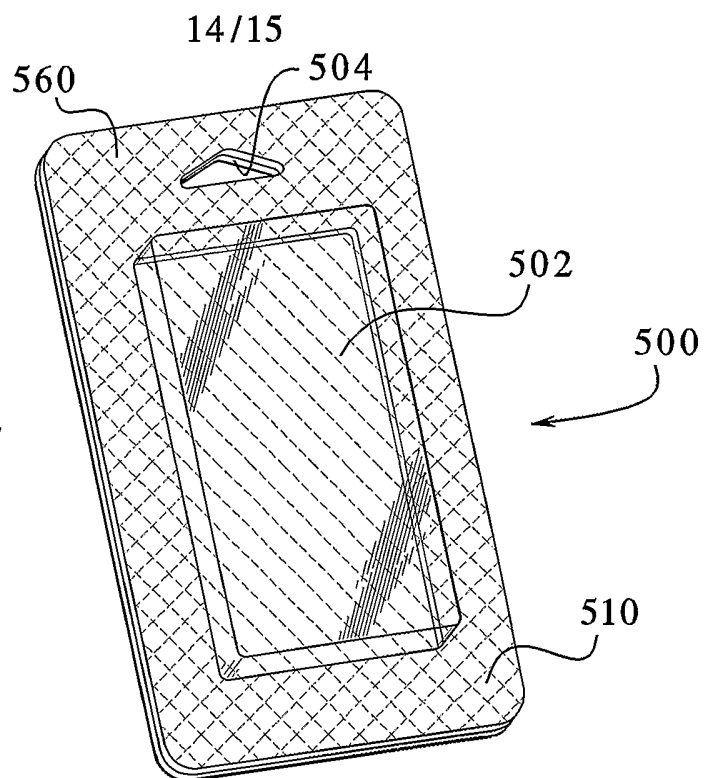
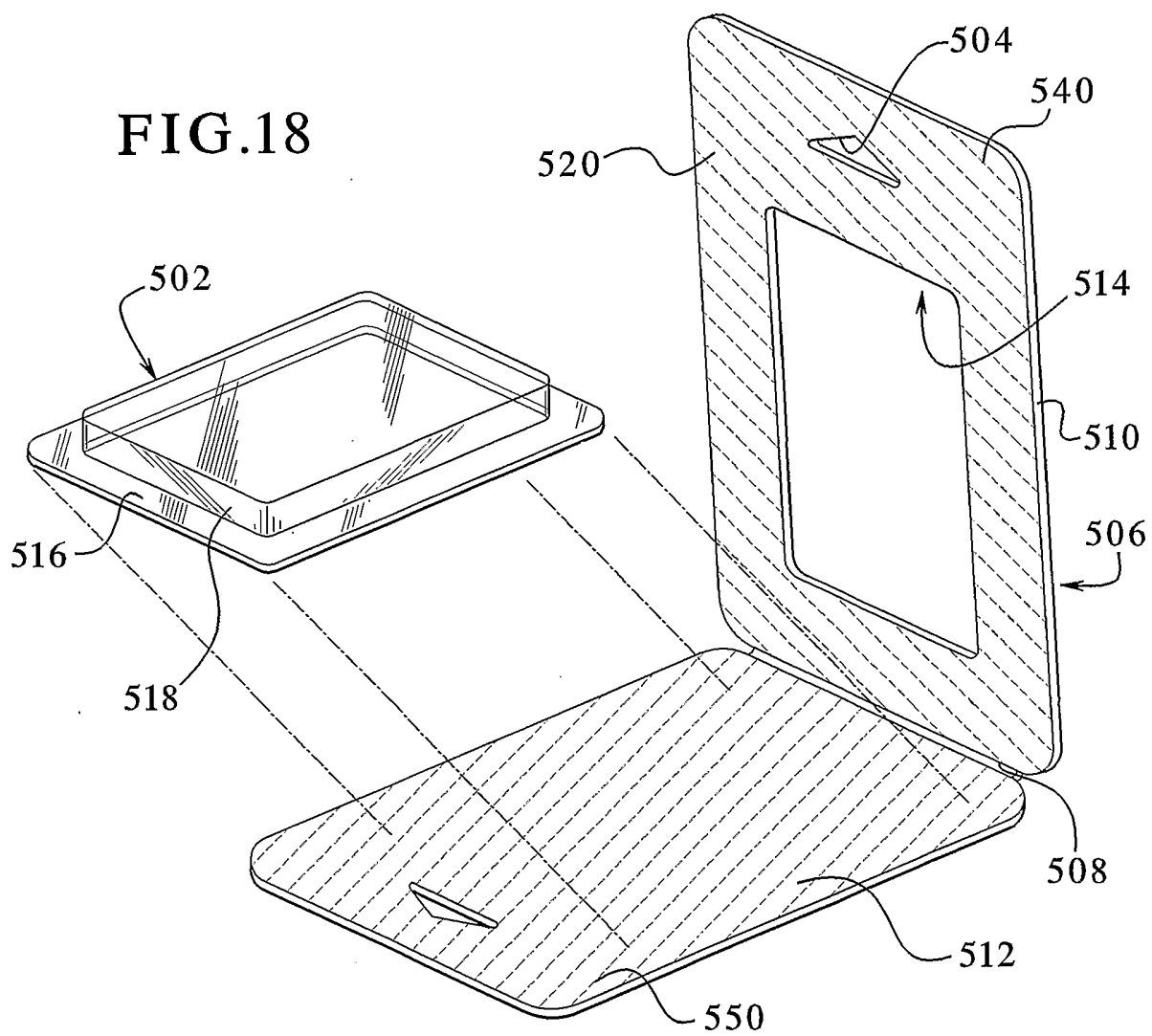


FIG.18



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FIG.19

