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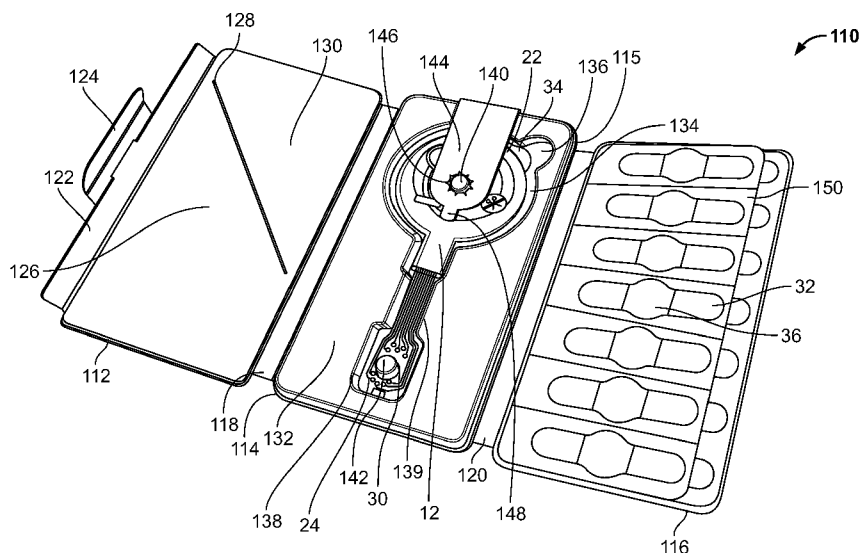


FIG. 3

(57) Abstract: An ostomy leakage detection packaging is provided. The ostomy leakage detection packaging can include a first panel, a second panel, and an insert tray. The first panel and the second panel are connected and can fold onto each other. The insert tray is molded to fit a sensing accessory and is coupled to the second panel. The insert tray can include a sensing region insert area and a protrusion. The sensing region insert area accepts a sensing region of the sensing accessory. The protrusion is located in the sensing region insert area and fits around an inlet opening of the sensing accessory.

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SYSTEM FOR PACKAGING SENSING ACCESSORY

BACKGROUND

[0001] This disclosure is related to a system for packaging a sensing accessory of an ostomy leakage detection system.

[0002] Known ostomy leakage detection systems can include a sensor assembly for detecting the presence of ostomy effluent (or leakage) around a stoma of a user. Commonly, such sensor assemblies can be part of an accessory that includes a printable circuit that attaches to an ostomy appliance, such as a barrier appliance, and a user's abdomen using an adhesive. However, such sensor assemblies are fragile and require special packaging to prevent damage. Additionally, such sensors may come in different sizes.

[0003] Accordingly, it is desirable to provide an improved packaging system for a sensing accessory of an ostomy leakage detection system.

BRIEF SUMMARY

[0004] A packaging for a sensing accessory is provided according to various embodiments.

[0005] In an aspect, the packaging for a sensing accessory can include a first panel, a second panel, and an insert tray. The first panel and the second panel can be connected and can fold onto each other. The insert tray can be molded to fit a sensing accessory and can be coupled to the second panel. The insert tray can include a sensing region insert area and a protrusion. The sensing region insert area can accept a sensing region of the sensing accessory. The protrusion can be located in the sensing region insert area and can fit around an inlet opening of the sensing accessory.

[0006] In an embodiment, the second panel can include a protruding member with a retaining ring. The protruding member can extend over the insert tray and the retaining ring can engage the protrusion to secure the sensing accessory in place. In such an embodiment, the retaining ring can include a tooth-like structure to secure onto the protrusion. The protrusion can include a taper.

[0007] In an embodiment, the insert tray can include an arm indentation that can receive the protruding member when the retaining ring engages the protrusion.

[0008] In an embodiment, the insert tray can include a finger tab region insert area that can receive a sensing region tab to allow a user to access the sensing region tab. The sensing region can include the sensing region tab.

[0009] In an embodiment, the insert tray can include one or more patch inserts that can hold one or more patches. In such an embodiment, the patch insert can include ends that hold patch edges in place and allow a user to remove the patch from the patch insert by bending the patch away from the insert tray.

[0010] In an embodiment, the packaging can further include a fifth panel. The fifth panel can be connected to the second panel at an edge opposite to that at which the first panel is connected to the second panel. The fifth panel can fold over the second panel covering the insert tray, and the first panel can fold over the second and third panels.

[0011] In another aspect, packaging for a sensing accessory can include a first panel, a second panel, a third panel, a fourth panel, and an insert tray. The first panel and the second panel can be connected on inner edges and can fold onto each other. The third panel can extend from the first panel perpendicular to the inner edges where the first and second panel are connected. The third panel can fold over a first crease onto the first panel. The fourth panel can extend from the second panel parallel to the third panel. The fourth panel can fold over a second crease onto the second

panel. The insert tray can be molded to fit a sensing accessory and can be mounted to the fourth panel. The insert tray can include a sensing region insert area and a protrusion. The sensing region insert area can accept a sensing region of the sensing accessory. The protrusion can be located in the sensing region insert area and can fit into an inlet opening of the sensing accessory.

[0012] In an embodiment, the second panel can include a protruding member with a retaining ring. The protruding member can extend over the insert tray and the retaining ring can engage the protrusion to secure the sensing accessory in place.

[0013] In an embodiment, the retaining ring can include a tooth-like structure that can engage the protrusion. The protrusion can include a taper.

[0014] In an embodiment, the insert tray can include an arm indentation to receive the protruding member when the retaining ring engages the protrusion.

[0015] In an embodiment, the insert tray can include a finger tab region insert area that receives a sensing region tab and allows a user to access the sensing region tab. The sensing region can include the sensing region tab.

[0016] In an embodiment, the insert tray can include one or more patch inserts that hold one or more patches.

[0017] In an embodiment, the patch insert can include ends that hold patch edges in place and allow a user to remove the patch from the patch insert by bending the patch away from the insert tray.

[0018] In an embodiment, the packaging can further include a fifth panel. The fifth panel can be connected to the second panel at an edge opposite to that at which the first panel is connected to the second panel. The fifth panel can fold over the second panel covering the insert tray, and the first panel folds over the second and third panel.

[0019] In an aspect, the packaging for a sensing accessory can include a first panel, a second panel, a third panel, a fourth panel, a fifth panel, and an insert tray. The first panel and the second panel can be connected on a first inner edge and can fold onto each other. The third panel and the second panel can be connected at an edge opposite to that at which the first inner edge and the third panel and the second panel can fold onto each other. The fourth panel can extend from the first panel perpendicular to the inner edge at which the first and second panels are connected. The fourth panel can fold over a first crease onto the first panel. The fifth panel can extend from the second panel parallel to the fifth panel. The fifth panel can fold over a second crease onto the second panel. The insert tray can be molded to fit a sensing accessory and can be mounted to the fifth panel. The insert tray can include a sensing region insert area and a protrusion. The sensing region insert area can accept a sensing region of the sensing accessory. The protrusion can be located in the sensing region insert area and can fit into the inlet opening of the sensing accessory.

[0020] In an embodiment, the second panel can include a protruding member with a retaining ring. The protruding member can extend over the insert tray and the retaining ring can engage the protrusion to secure the sensing accessory in place.

[0021] The foregoing general description and the following detailed description are examples only and are not restrictive of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] The benefits and advantages of the present embodiments will become more readily apparent to those of ordinary skill in the relevant art after reviewing the following detailed description and accompanying drawings, wherein:

[0023] FIG. 1 is an illustration of an example of an ostomy system including a leakage

detection system.

[0024] FIG. 2 is a front view of an ostomy system attached to a user.

[0025] FIG. 3 is a front-bottom perspective view of a packaging system for a leakage detection system with a sensing accessory and patches, according to an embodiment.

[0026] FIG. 4 is a front perspective view of the packaging system of FIG. 3 without the sensing accessory and with patches.

[0027] FIG. 5 is a front perspective view of a packaging system, shown with a sensing accessory and patches, according to an embodiment.

[0028] FIG. 6 is a front perspective view of the packaging system of FIG. 5 without the sensing accessory or patches.

[0029] FIG. 7A is a top front perspective view of the packaging system of FIG. 5 with the sensing accessory and patches.

[0030] FIG. 7B is a front perspective view of the packaging system of FIG. 5 partially closed.

[0031] FIG. 7C is a front perspective view of the packaging system of FIG. 5 closed.

[0032] FIG. 7D is a front perspective view of the packaging system of FIG. 5 closed and secured.

[0033] FIG. 8 is a rear view of the packaging system, fully unfolded, and without the sensing accessory or patches, according to an embodiment.

DETAILED DESCRIPTION

[0034] While the present disclosure is susceptible of embodiment in various forms, there is shown in the drawings and will hereinafter be described presently preferred embodiments with the understanding that the present disclosure is to be considered an exemplification and is not intended

to limit the disclosure to the specific embodiments illustrated. The words “a” or “an” are to be taken to include both the singular and the plural. Conversely, any reference to plural items shall, where appropriate, include the singular. The words “first,” “second,” “third,” and the like may be used in the present disclosure to describe various information, such information should not be limited to these words. These words are only used to distinguish one category of information from another. The directional words “top,” “bottom,” “up,” “down,” “front,” “back,” and the like are used for purposes of illustration and as such, are not limiting. Depending on the context, the word “if” as used herein may be interpreted as “when” or “upon” or “in response to determining.”

[0035] The present disclosure provides a system for packaging a sensing accessory of an ostomy leakage detection system. The packaging system allows the use of one package for multiple sizes of sensing accessories while fixturing the sensors of the sensing accessories in place to prevent damage or deformation of the printed circuit and hydrocolloid. The packaging system can include a bi-fold, tri-fold, or accordion fold package that can include multiple panels that are connected to form a folding structure that protects the sensing accessory within the packaging.

[0036] FIG. 1 illustrates an ostomy two-piece pouch system 10. According to the illustrated embodiment, the ostomy system 10 generally includes a sensing accessory 12, an ostomy barrier appliance 14, an ostomy pouch 16, a wearable device 18, and a mobile device 20. The sensing accessory 12 can include a sensing region 22, a tail region 24, and a connection region 26. The ostomy barrier appliance 14 can include an ostomy barrier coupling member 15. The ostomy pouch 16 can receive and hold bodily waste and can include a pouch coupling member 31 for coupling with the ostomy barrier coupling member 15. The sensing region 22 can include an inlet opening 28 configured to surround a stoma (not shown). The tail region 24 can include a connector opening 30 configured to electrically and mechanically connect with the wearable device 18. The sensing

region 22 can be mounted around a stoma between the user's abdomen and the ostomy barrier appliance 14. The sensing accessory 12 can include a printed circuit (not shown) for detecting leakage. The sensing accessory 12 can include a hydrocolloid for mounting to a user.

[0037] In an embodiment, the sensing accessory 12 can include an adhesive located over one or both sides of the sensing region 22 for mounting on a user. The sensing region 22 can further have protective release liners over the adhesives. The sensing region 22 can be provided in different sizes including different inner diameters and outer diameters, however, the protective release liners, regardless of the size of the sensing region 22 can be provided with the same inner diameter for the inlet opening 28. The sensing region 22 can include a finger tab 34 (FIG. 3) on the outer edge of the sensing region 22 for handling the sensing accessory 12.

[0038] FIG. 2 illustrates the ostomy pouch system 10 mounted to a user. According to the illustrated embodiment, the sensing accessory 12 can be attached to the ostomy barrier appliance 14 by aligning the sensing region 22 with the ostomy barrier appliance 14 and using an adhesive. The sensing region 22 can be mounted to a user using an adhesive and positioning the inlet opening 28 around the stoma. The ostomy pouch 16 can be mounted on the ostomy barrier appliance 14 using the pouch coupling member 31 and the ostomy barrier coupling member 15. The wearable device 18 can be attached to the sensing accessory 12 using the tail region 24 and connector opening 30. The wearable device 18 can be mounted on a user using a patch 32.

[0039] According to the example embodiment, the ostomy leakage detection system may comprise three subsystems – the sensing accessory 12, the wearable device 18, and a mobile application on the mobile device 20. The sensing accessory 12 may be provided as an accessory for an ostomy pouch system. The sensing accessory 12 may include sensors for detecting the presence of ostomy effluent. The sensing accessory 12 may be configured to communicate leakage

detection signals to the wearable device 18.

[0040] The wearable subsystem 18 may be a wearable device configured to perform at least some processing of leakage detection signals and to alert a user of a leakage event. The wearable subsystem 18 may be configured to communicate electronically through a wired or wireless communication system with a mobile application. Such electronic communications may include raw data as acquired from the sensing accessory 12 or a leak status of the sensing accessory 12. The mobile application may be a digital subsystem installed on the mobile device 20. The mobile application may be configured to further process leak detection data and provide an alert or other information about an ostomy appliance to a user.

[0041] FIGS. 3-8 show packaging systems 110, 210, 310 according to several embodiments. The illustrated packaging systems 110, 210, 310 are a tri-fold packaging that include multiple panels that are connected to form a folding structure. It will be appreciated that packaging systems, although not shown, can be configured as bi-fold, accordion fold, Z-fold, and the like, and that all such folded configurations are within the scope and spirit of the present disclosure. The packaging systems 110, 210, 310 generally include a first panel 112, 212, 312, a second panel 114, 214, 314, and a third panel 116, 216, 316. The second panel 114, 214, 314 may be connected to the first panel 112, 212, 312 and third panel 116, 216, 316 using a first fold member 118, 218, 318 and a second fold member 120, 220, 320, respectively. The first panel 112, 212, 312 can include a third fold member 122, 222, 322 with a tab insert 124, 224, 324.

[0042] In embodiments, the packaging systems 110, 210, 310 can include a fourth panel 126, 226, 326. The first panel 112, 212, 312 can be connected to the fourth panel 126, 226, 326 along a crease 364 (FIG. 8). The fourth panel 126, 226, 326 can bend along the crease 364 onto the first panel 112, 212, 312 (FIG. 7A). The fourth panel 126, 226, 326 can include a panel slit 128, 228,

328 that creates a pocket for holding informational material 130. The informational material 130 may be, for example, an instruction manual or the like for use of the sensing accessory 12. The third fold member 122, 222, 322 and tab insert 124, 224, 324 can be used to secure the packaging system 110, 210, 310 closed (FIGS. 7C and 7D).

[0043] In an embodiment, the packaging system 110, 210, 310 can include a fifth panel 115, 215, 315. The second panel 114, 214, 314 can be connected to the fifth panel 115, 215, 315 along a second crease 366 (FIG. 8). The fifth panel 115, 215, 315 can bend along the second crease 366 onto the second panel 114, 214, 314 (FIG. 7A). The fifth panel 115, 215, 315 can include an insert tray 132, 232, 332 with an insert 135, 235, 335 for securely holding and protecting the sensing accessory 12 during shipping, handling, and use. The insert tray 132, 232, 332 can be positioned on top of the fifth panel 115, 215, 315 and can include a sensing region insert area 134, 234 for receiving the sensing region 22, a finger tab region insert area 136, 236 for receiving the finger tab 34 and providing access for a user to grasp the finger tab 34, a connection region insert area 138, 238 for receiving the connection region 26, and a tail region insert area 139, 239 for receiving the tail region 24.

[0044] In other embodiments, the insert tray 132, 232, 332 can be positioned on top of the second panel 114, 214, 314. In still other embodiments, the packaging system 110, 210, 310 can be a bi-fold package, an accordion package, or other folding configurations as discussed herein with multiple panels.

[0045] The sensing region insert area 134, 234 can include a first protrusion 140, 240 into which the inlet opening 28 fits and secures the sensing region 22 in place. The first protrusion 140, 240 can have a diameter smaller than the diameter of the inlet opening 28 on the release liner so that the inlet opening 28 can fit around the first protrusion 140, 240 but also keep the sensing

region 22 from moving around the insert tray 132, 232, 332 regardless of the size of the sensing region's 22 inner diameter or outer diameter. For example, the diameter of the first protrusion 140, 240 can be about 10 mm and the diameter of the inlet opening 28 can be about 12 mm.

[0046] The connection region insert area 138, 238 can include a second protrusion 142, 242 into which the connector opening 30 fits and secures the connection region 26 in place. The first protrusion 140, 240 and the second protrusion 142, 242, together can hold the sensing accessory 12 securely in place. The first protrusion 140, 240 and second protrusion 142, 242 can be tapered to have a smaller diameter as the protrusions extend from the insert tray 132, 232, 332 to secure the sensing and connection regions (22, 30) onto their respective protrusions (140, 142).

[0047] The second panel 114, 214, 314 can include a protruding member (retaining arm) 144, 244, 344. The protruding member 144, 244, 344 can include a fourth fold member 156, 256, 356, a retaining ring 146, 246, 346, and a release tab 148, 248. The fourth fold member 156, 256, 356 can protrude from the second panel 114, 214, 314 and allow the protruding member 144, 244, 344 to extend over the insert tray 132, 232, 332. The protruding member 144, 244, 344 can be positioned into the first protrusion 140, 240 using the retaining ring 146, 246, 346 to prevent the sensing accessory 12 from moving. The protruding member 144, 244, 344 can be flexible and be re-fixed to the first protrusion 140, 240 regardless of the number of sensing accessories 12 located in the insert tray 132, 232, 332. For example, the protruding member 144, 244, 344 can extend such that the retaining ring 146, 246, 346 can be located at an outer edge of the first protrusion 140, 240 when there is a maximum number of sensing accessories 12 on the insert tray 132, 232, 332. Once the sensing accessories 12 are used or removed from the insert tray 132, 232, 332 and there is only one or a few sensing accessories left within the insert tray 132, 232, 332, the protruding member 144, 244, 344 can extend such that the retaining ring 146, 246, 346 can be fixed onto the first

protrusion 140, 240, further into the insert tray 132, 232, 332, and hold the remaining sensing accessories 12 in place.

[0048] The retaining ring 146, 246, 346 can include a flexible tooth-like structure that has a diameter less than the diameter of the first protrusion 140, 240 so that the flexible teeth can bend around the first protrusion 140, 240 to secure on to the first protrusion 140, 240. (FIG. 7A). The retaining ring 146, 246, 346 can be received on the first protrusion 140, 240 to secure the sensing accessory or accessories 12 within the insert 135, 235, 335. The first protrusion 140, 240 can further include indentations or a roughened surface for gripping the retaining ring 146, 246, 346 tooth-like structure. The release tab 148, 248 can be used to pull the protruding member 144, 244, 344 away from the packaging and release the retaining ring 146, 246, 346 for accessing the sensing accessory or accessories 12.

[0049] The flexible nature of the teeth-like structure of the retaining ring 146, 246, 346 works effectively to allow the protruding member 144, 244 to be opened and closed multiple times, and with the tapered first protrusion 140, 240. The taper of the first protrusion 140, 240 and the flexible tooth-like structure facilitate the function of securing sensing accessories having a range of diameters while still engaging the protrusion properly.

[0050] In an embodiment, the insert tray 132, 232, 332 can be a blister tray, thermoformed tray, molded pulp tray or plastic tray. The insert tray 132, 232, 332 can be made from various materials, such as plastic materials and pulp materials. In an embodiment, the insert tray 132, 232, 332 may be formed from thermoformed plastic materials, such as polyvinyl chloride, polyethylene terephthalate, polyethylene terephthalate glycol, or high impact polystyrene, which can be molded into the desired shape to accommodate the specific dimensions of the sensing accessory 12 or other products/devices being packaged. In another embodiment, the insert tray 132, 232, 332 may be

formed from molded pulp, which may be formed by wet, semi-wet, or dry-molding virgin fiber materials, recycled paper materials, or a combination of recycled paper materials and virgin fibers. Wet, semi-wet, or dry-pulp molding processes can be performed with a combination of paper and/or virgin fiber materials, water, pressure, heat, vacuums, matching molds, hot press transfer molds, thermoforming processes, heating processes, and drying processes.

[0051] FIG. 3 illustrates a packaging system 110 in an open position with a sensing accessory 12 and patches 32 secured therein. According to the illustrated embodiment, the third panel 116 can include adhesive patch sheets 150 that can hold patches 32. The adhesive patch sheets 150 can be attached at one edge of the adhesive patch sheets 150 to an inner area of the third panel 116, near the second panel 114. The patches 32 can include a central area 36 for attaching to the wearable device 18. The patches 32 can be individually removed from the adhesive patch sheets 150 for use.

[0052] FIG. 4 illustrates the packaging system 110 in FIG. 3 in an open position without a sensing accessory 12, and with patches 32. According to the illustrated embodiment, the packaging system 110 can further include a recessed area 154 for receiving the protruding member 144, 244, 344 within the insert tray 132, 232, 332 when the retaining ring 146, 246, 346 is engaged with the first protrusion 140, 240.

[0053] FIG. 5 illustrates the packaging system 210 in an open position, showing an attached protruding member 244, and with a sensing accessory 12 and with patches 32 secured in patch inserts 250. According to the illustrated embodiment, the packaging system 110 can include patch inserts 250 with open spaces 254 adjacent to and contiguous with the patch inserts 250. The patch inserts 250 secure patches 32 and include ends 252 that accommodate the ends of the patches 32 for keeping the patches 32 within the patch inserts 250. The spaces 254 can be used to access the

patches 32. For example, a user can grasp the middle area 36 of the patch 32 with one finger and with another finger access and bend the patch 32 through the space insert 254. The patch 32 is bent or pulled upward from the middle area 36 allowing the ends to slip out of the ends member 252. The patch inserts 250 can be molded to fit the outline of the patch 32, while maintaining it secure in the system 210.

[0054] FIG. 6 illustrates the packaging system 210 of FIG. 5 in an open position, with an unattached protruding member 144, and without a sensing accessory 12 or patches 32.

[0055] FIG. 7A illustrates the packaging system 210 of FIG. 5 in an open position. According to the illustrated embodiment, the first panel 112, 212, 312 and the second panel 114, 214, 314 can bend about the first fold member 118, 218, 318 toward each other. Similarly, the second panel 114, 214, 314 and the third panel 116, 216, 316 can bend about the second fold member 120, 220, 320 toward each other. The first fold member 118, 218, 318, the second fold member 120, 220, 320, the third fold member 122, 222, 322, and the fourth fold member 156, 256, 356 can include creases (FIG. 8, creases 317, 319) separated by a panel 270 having a height equal to a height of the insert tray 132, 232, 332 so that the first panel 112, 212, 312, the third panel 116, 216, 316, the retaining arm 144, 244, 344, and the tab 124, 224, 324, respectively, can fold over the insert tray 132, 232, 332.

[0056] FIG. 7B illustrates the packaging system 210 of FIG. 5 in a partially closed position with the tab in an open position. According to the illustrated embodiment, the second panel 114, 214, 314 and the third panel 116, 216, 316 can fold onto each other to cover the insert tray 132, 232, 332 and retaining arm 144, 244, 344, and partially close the packaging system 210. The third panel 116, 216, 316 can include an opposite or rear side 116', 216', 316'.

[0057] FIG. 7C illustrates the packaging system 210 of FIG. 5 in a partially closed position

with the tab in an open position. According to the illustrated embodiment, the first panel 112, 212, 312 and third panel 116', 216', 316' are folded onto each other to close the packaging system 210. The second panel 114, 214, 314 can include a rear side 114', 214', 314'. The second panel 114', 214', 314' can include a tab slit 260 and opening 262 into which the tab 124, 224, 324 is inserted to secure the packaging system 110, 210, 310 closed. The tab 124, 224, 324 fits into the tab slit 260 and is positioned within the opening 262 (FIG. 7D), between the second panel 114, 214, 314 and the fifth panel 115, 215, 315. A user can then access the tab 124, 224, 324 through the opening 262.

[0058] FIG. 7D illustrates the packaging system 210 of FIG. 5 in a closed position and secured with the tab inserted into the slit 260. According to the illustrated embodiment, the tab insert 124, 224, 324 can include a cut out 268 that is accessible when the tab insert 124, 224, 324 is positioned in the tab slit 260. The cut out 268 facilitates securing the tab insert 124, 224, 324 into the slit 260 by pushing on the cut out 368 towards the slit 260, and it can be used to remove the tab insert 124, 224, 324 from the slit 260 by pulling on the cut out 368 in an opposite direction.

[0059] FIG. 8 illustrates a packaging system 310 in a fully unfolded or flat state. According to the illustrated embodiment, the first panel 312, second panel 314, third panel 316, fourth panel 326, fifth panel 315, third fold member 322, tab insert 324, protruding member 344, and the fourth fold member 356 can be a one-piece structure made from, for example, a plastic material, cardboard, or other suitable material. The one-piece structure can be cut into shape with creases, slits, and openings and the insert tray 332 can be attached to the top of the fifth panel 315. The one-piece member can then be folded into a tri-fold packaging system 310.

[0060] From the foregoing it will be observed that numerous modifications and variations can be effectuated without departing from the true spirit and scope of the novel concepts of the present

disclosure. It is to be understood that no limitation with respect to the specific embodiments illustrated is intended or should be inferred. The disclosure is intended to cover by the appended claims all such modifications as fall within the scope of the claims.

CLAIMS

What is claimed is:

1. A packaging for a sensing accessory comprising:
 - a first panel;
 - a second panel, wherein the first panel and the second panel are connected and fold onto each other; and
 - an insert tray, wherein the insert tray is molded to fit a sensing accessory and coupled to the second panel, and comprises:
 - a sensing region insert area, wherein the sensing region insert area accepts a sensing region of the sensing accessory, and
 - a protrusion, wherein the protrusion is located in the sensing region insert area and fits into an inlet opening of the sensing accessory.
2. The packaging of claim 1, wherein the second panel comprises a protruding member with a retaining ring, wherein the protruding member extends over the insert tray and the retaining ring engages the protrusion and secures the sensing accessory in place.
3. The packaging of claim 2, wherein the retaining ring comprises a flexible tooth-like structure that engages the protrusion, and wherein the protrusion has a taper.
4. The packaging of any one of claims 2-3, wherein the insert tray comprises an arm recess that receives the protruding member when the retaining ring engages the protrusion.

5. The packaging of any one of claims 1-4, wherein the insert tray comprises a finger tab insert area that receives a sensing region tab to allow a user to access the sensing region tab.

6. The packaging of any one of claims 1-5, wherein the insert tray comprises a patch insert configured to accommodate one or more patches.

7. The packaging of claim 6, wherein the patch insert comprises ends for receiving and securing patch edges in place to facilitate a user removing the patch from the patch insert.

8. The packaging of any one of claims 1-7, further comprising a third panel, wherein the third panel is connected to the second panel at an opposite edge from which the first panel is connected to the second panel, wherein the third panel folds over the second panel covering the insert tray and the first panel folds over the second and third panel.

9. The packaging of claim 8, wherein the third panel comprises a patch sheet with a plurality of patches.

10. The packaging of any one of claims 1-9, wherein the first panel comprises a tab insert, wherein the second panel comprises a slit that receives the tab insert when the first panel and second panel are folded together.

11. The packaging of any one of claims 1-10, wherein the insert tray is formed from a

molded pulp.

12. A packaging for a sensing accessory comprising:

a first panel;

a second panel, wherein the first panel and the second panel are connected on an inner edge and fold onto each other;

a third panel, wherein the third panel extends from the first panel perpendicular to the inner edge where the first and second panel are connected, wherein the third panel folds over a first crease onto the first panel;

a fourth panel, wherein the fourth panel extends from the second panel parallel to the third panel, wherein the fourth panel folds over a second crease onto the second panel; and

an insert tray, wherein the insert tray is molded to fit a sensing accessory, is mounted to the fourth panel, and comprises:

a sensing region insert area, wherein the sensing region insert area accepts a sensing region of the sensing accessory, and

a protrusion, wherein the protrusion is located in the sensing region insert area and fits around an inlet opening of the sensing accessory.

13. The packaging of claim 12, wherein the second panel comprises a protruding member with a retaining ring, wherein the protruding member extends over the insert tray and the retaining ring connects with the protrusion to secure the sensing accessory in place.

14. The packaging of claim 13, wherein the retaining ring comprises a teeth-like

structure that connects with the protrusion, wherein the protrusion comprises a tapered diameter.

15. The packaging of any one of claims 13-14, wherein the insert tray comprises an arm indentation that receives the protruding member when the retaining ring engages the protrusion.

16. The packaging of any one of claims 12-15, wherein the insert tray comprises a finger tab region insert area that receives a sensing region tab and allowing a user to access the sensing region tab, wherein the sensing region comprises the sensing region tab.

17. The packaging of any one of claims 12-16, wherein the insert tray comprises a patch insert that holds one or more patches.

18. The packaging of claim 17, wherein the patch insert comprises end members that hold patch edges in place and allows a user to remove the patch from the patch insert by bending the patch away from the insert tray.

19. The packaging of any one of claims 12-18, further comprising a fifth panel, wherein the fifth panel is connected to the second panel at an opposite edge that the first panel is connected to the second panel, wherein the fifth panel folds over the second panel covering the insert tray and the first panel folds over the second and third panel.

20. The packaging of any one of claims 12-19, wherein the insert tray is formed from

a molded pulp.

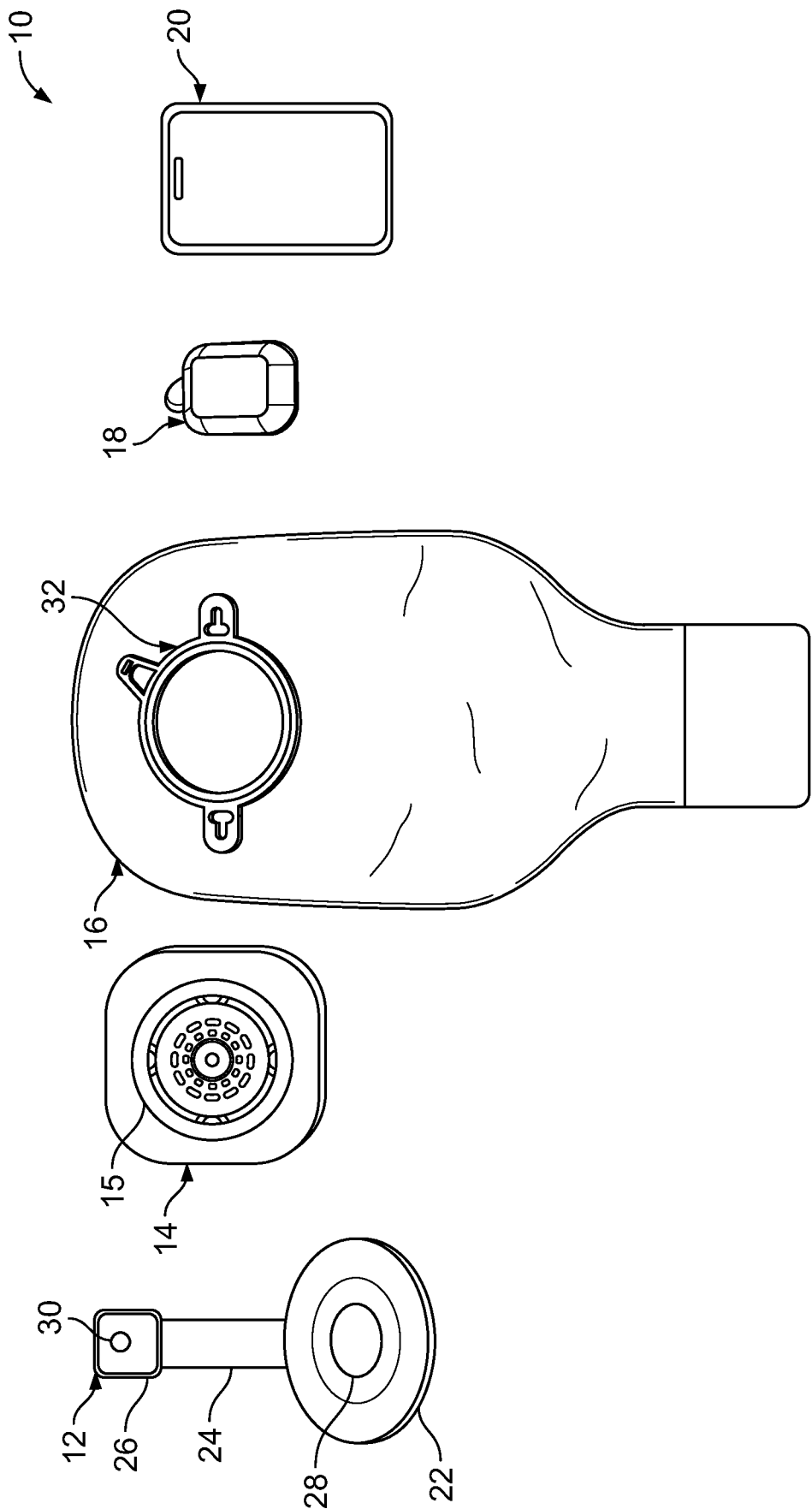


FIG. 1

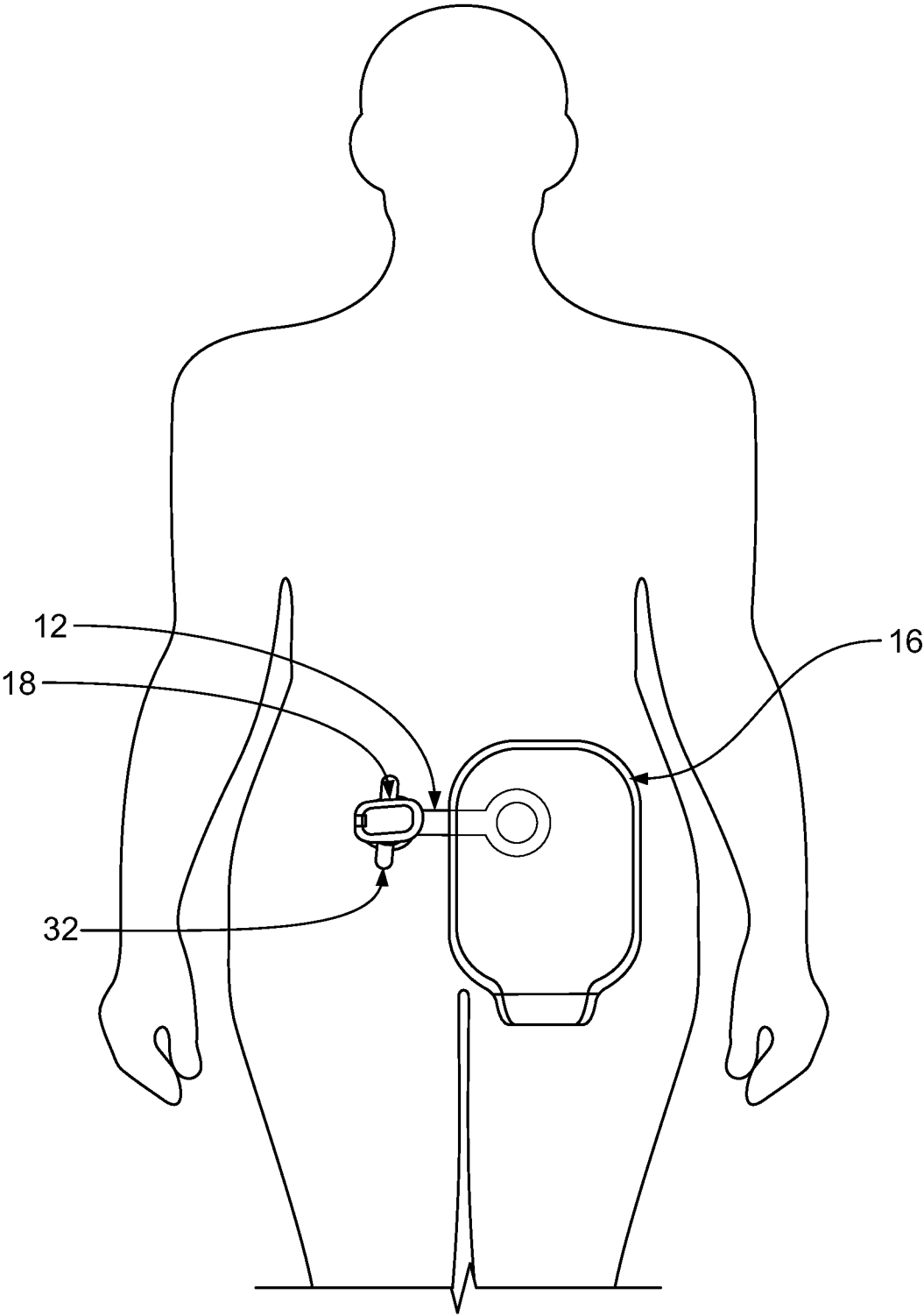


FIG. 2

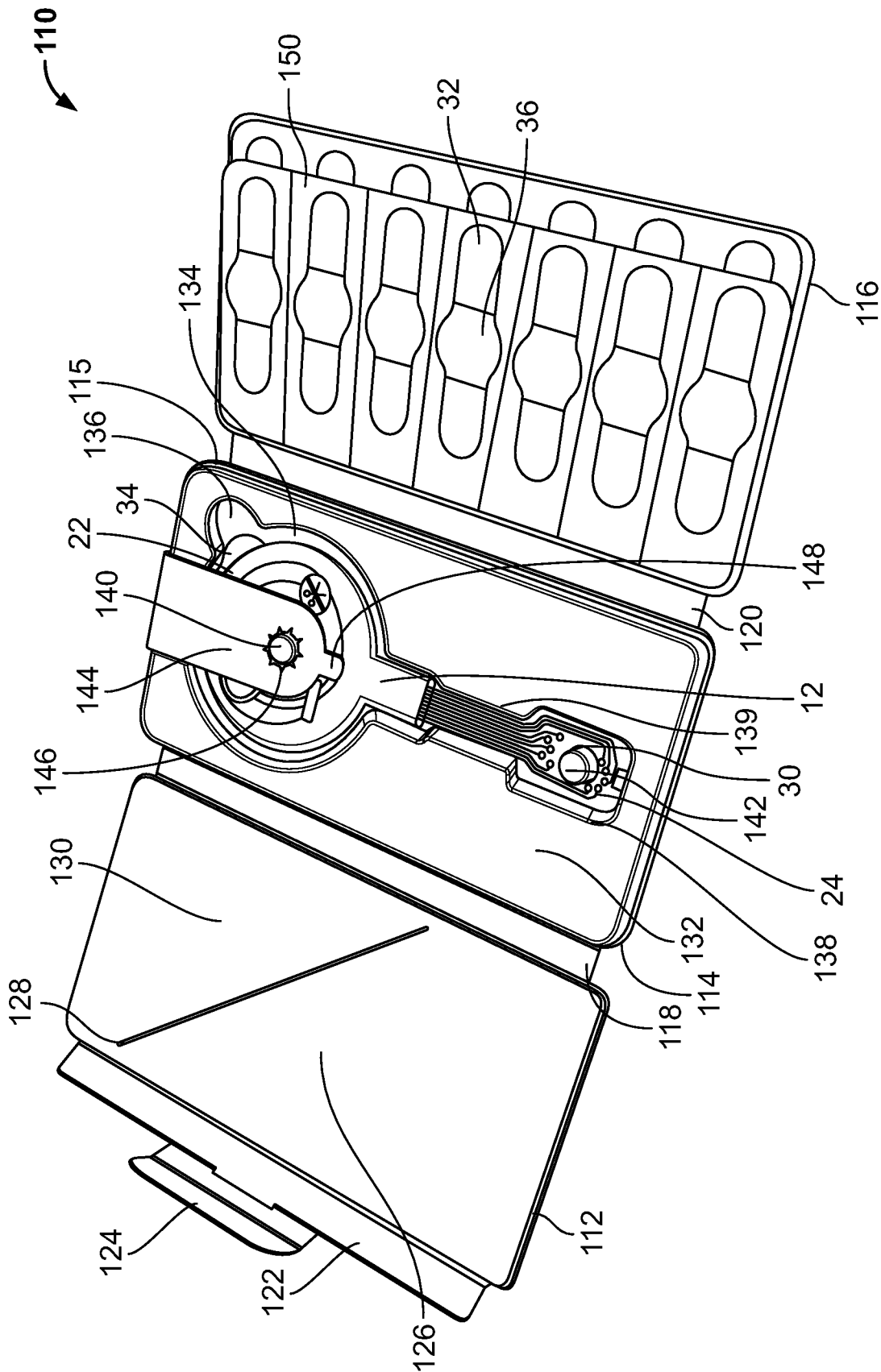


FIG. 3

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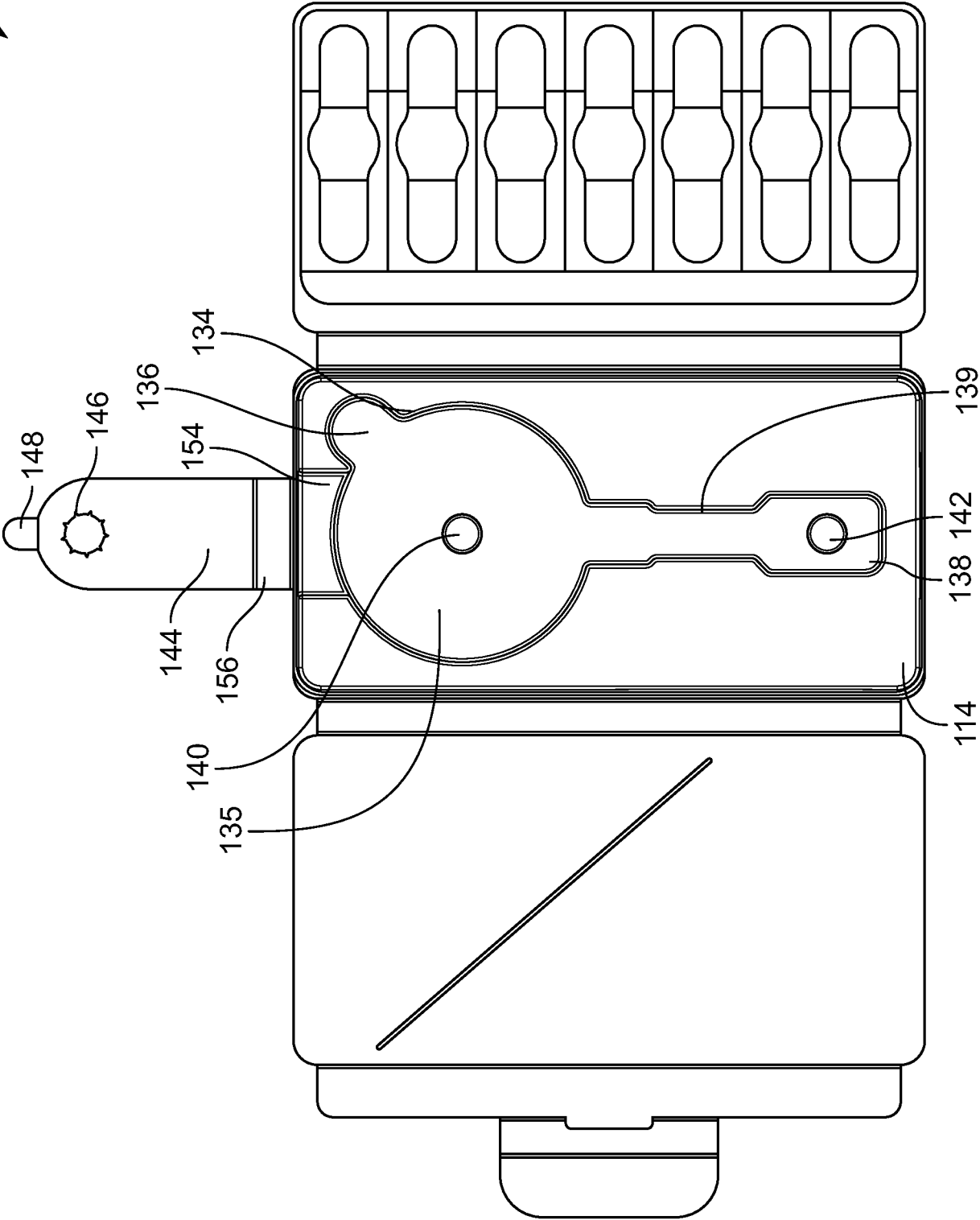
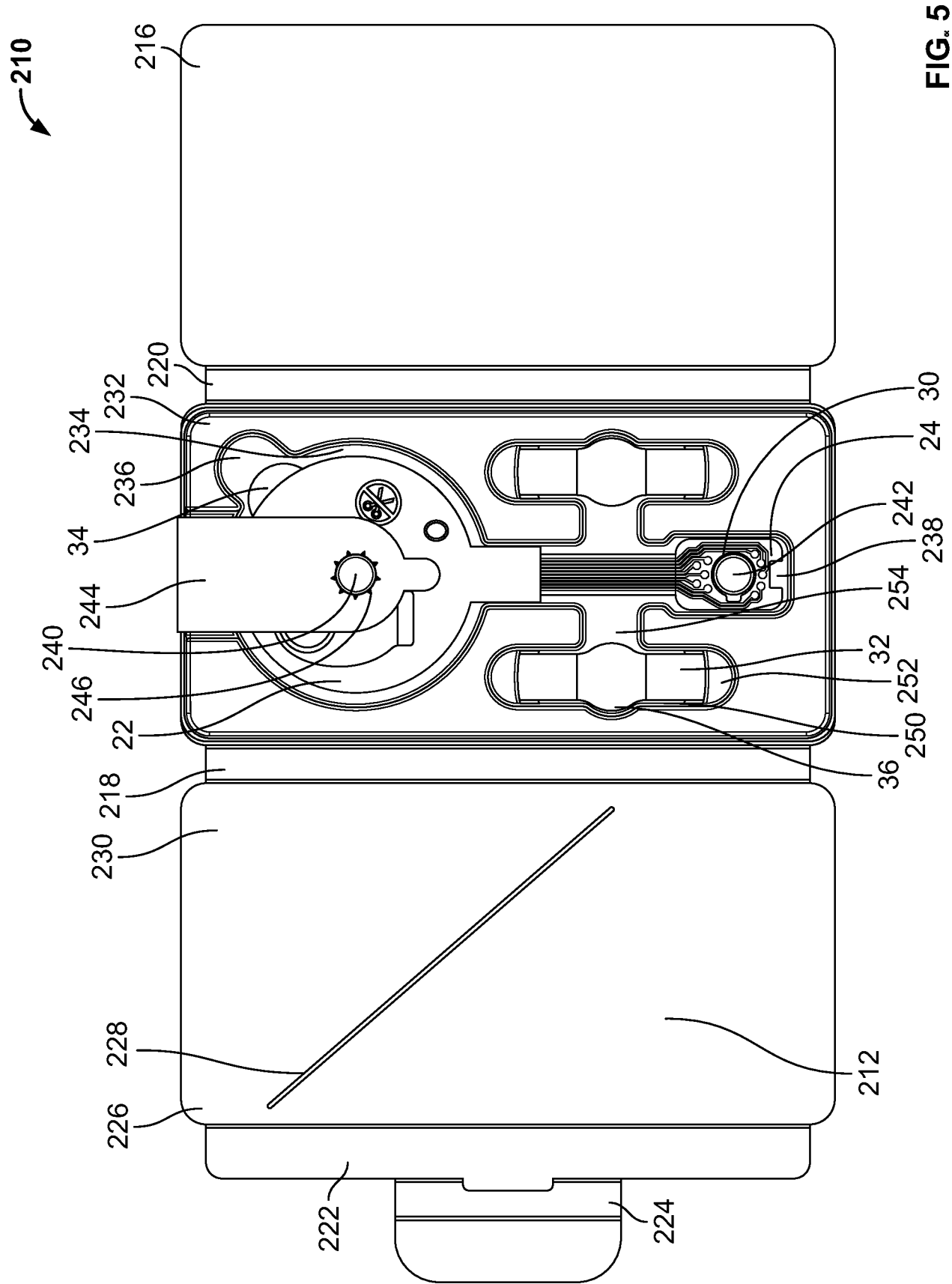


FIG. 4



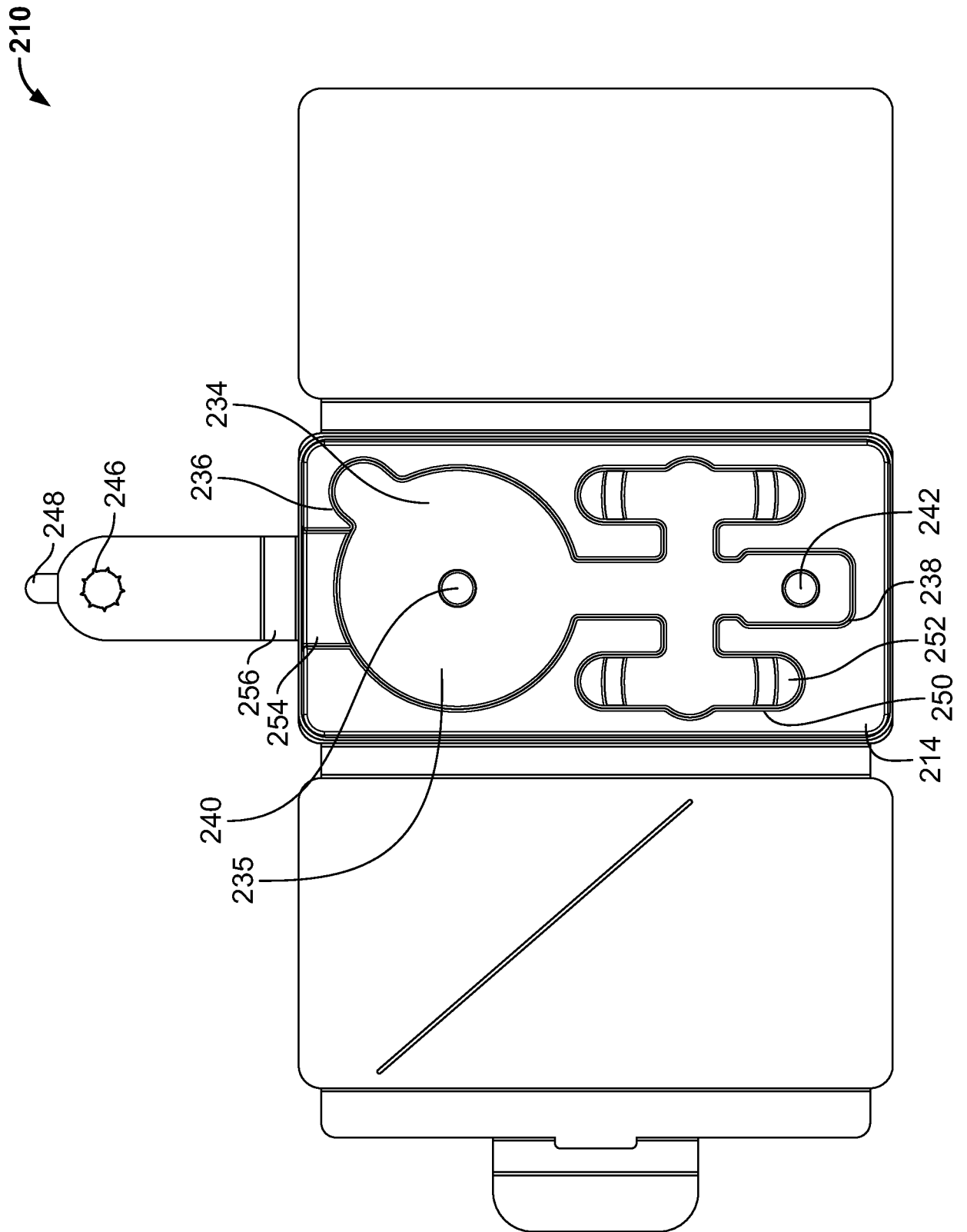


FIG. 6

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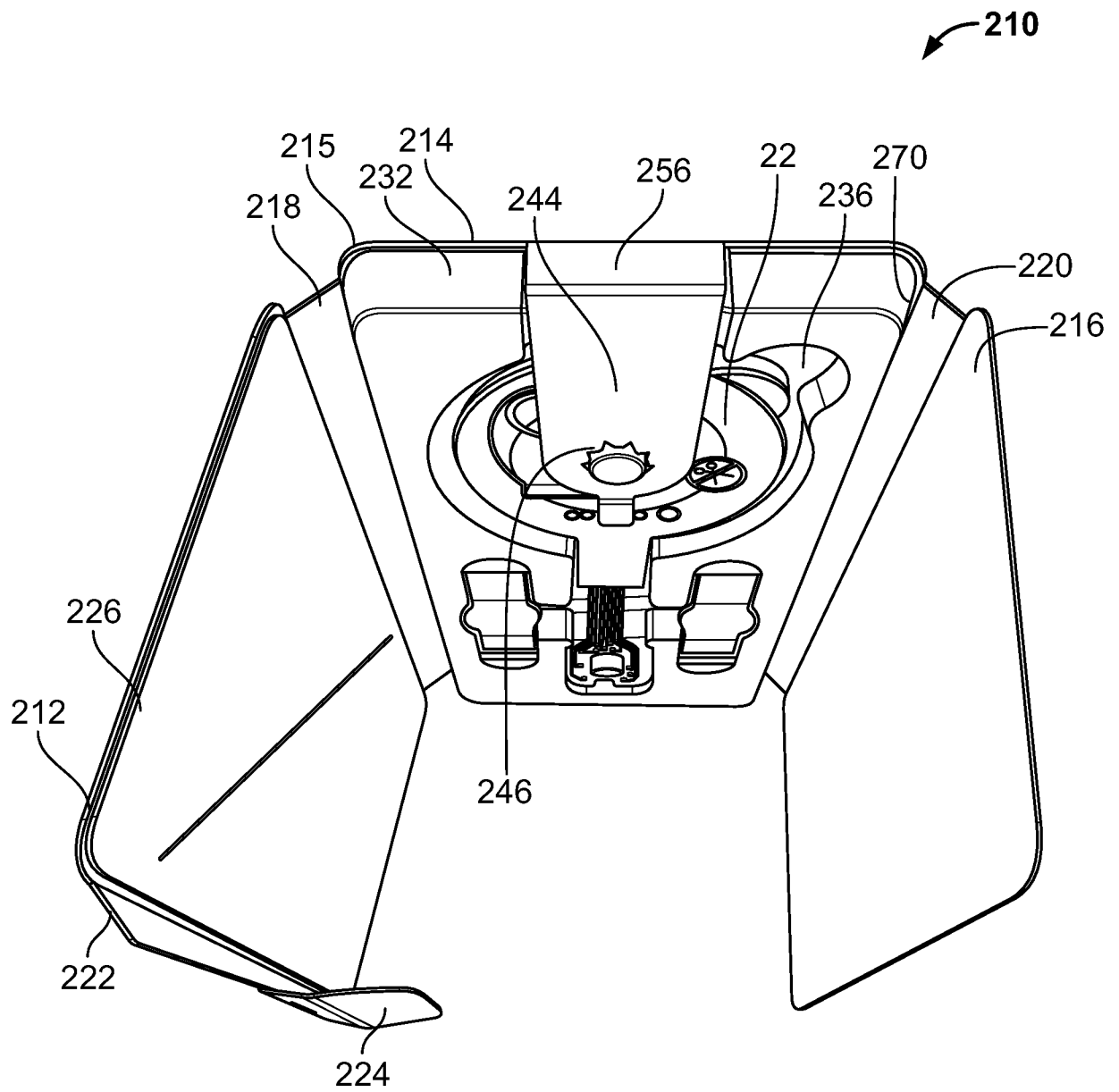


FIG. 7A

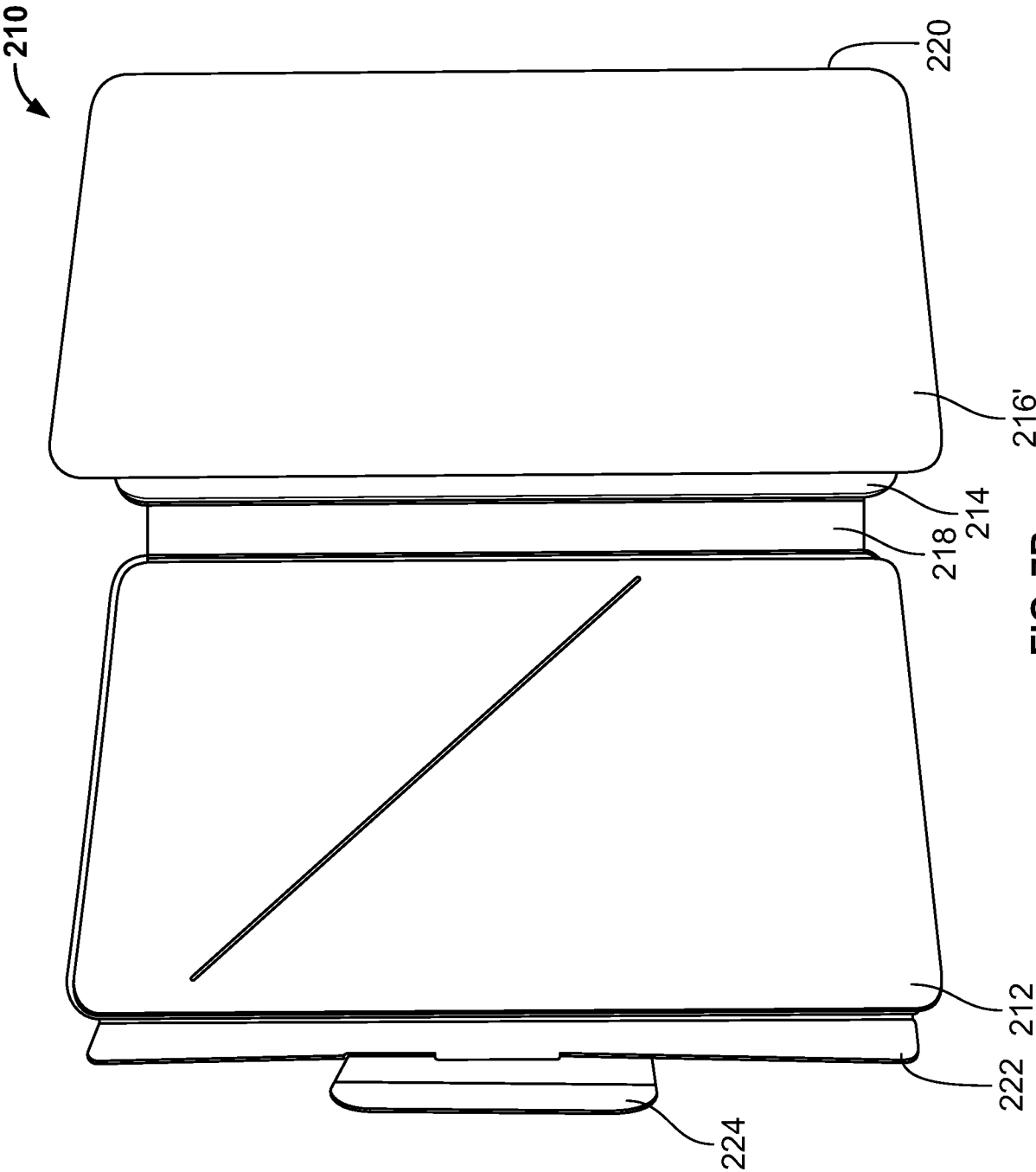


FIG. 7B

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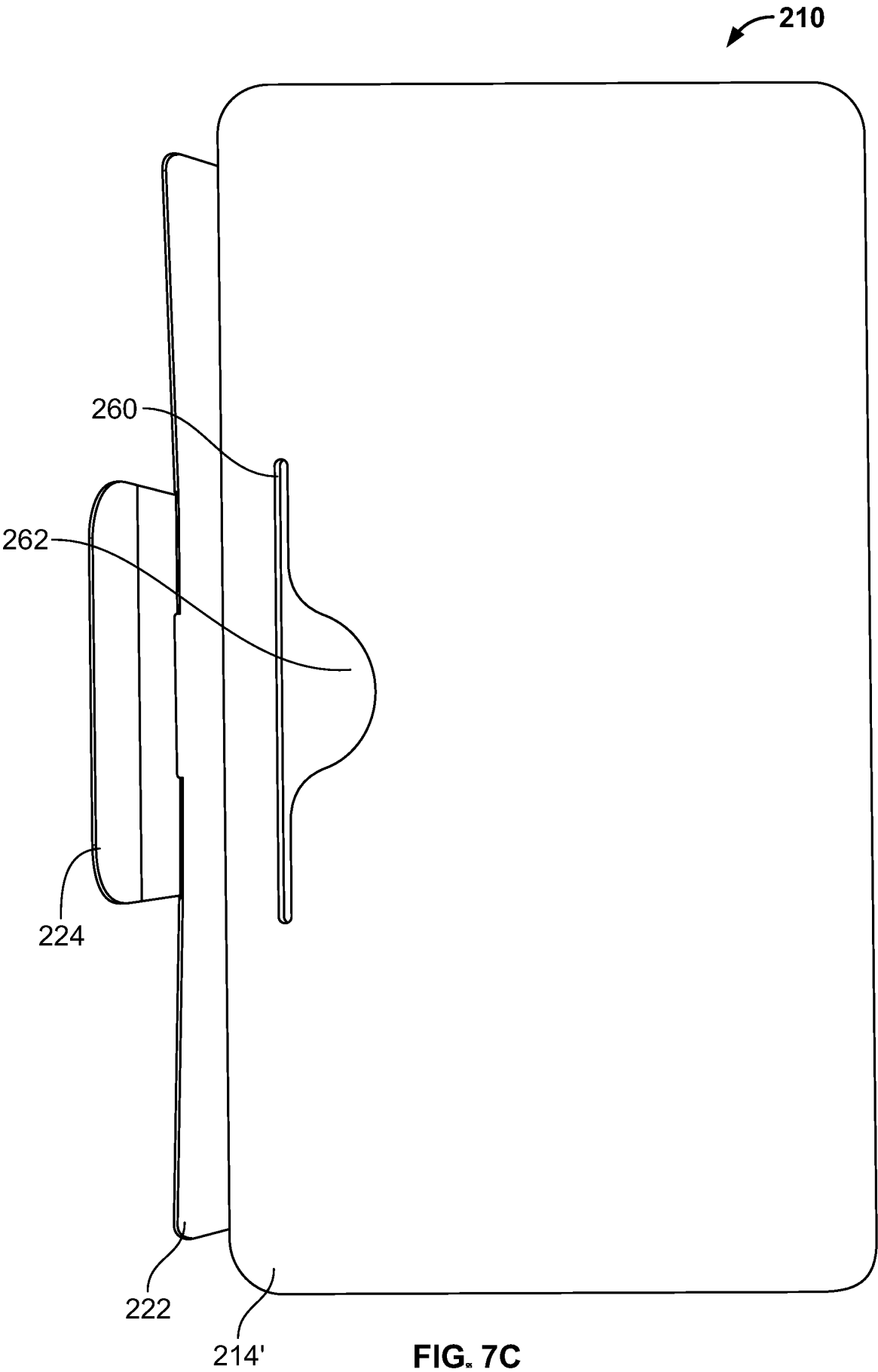


FIG. 7C

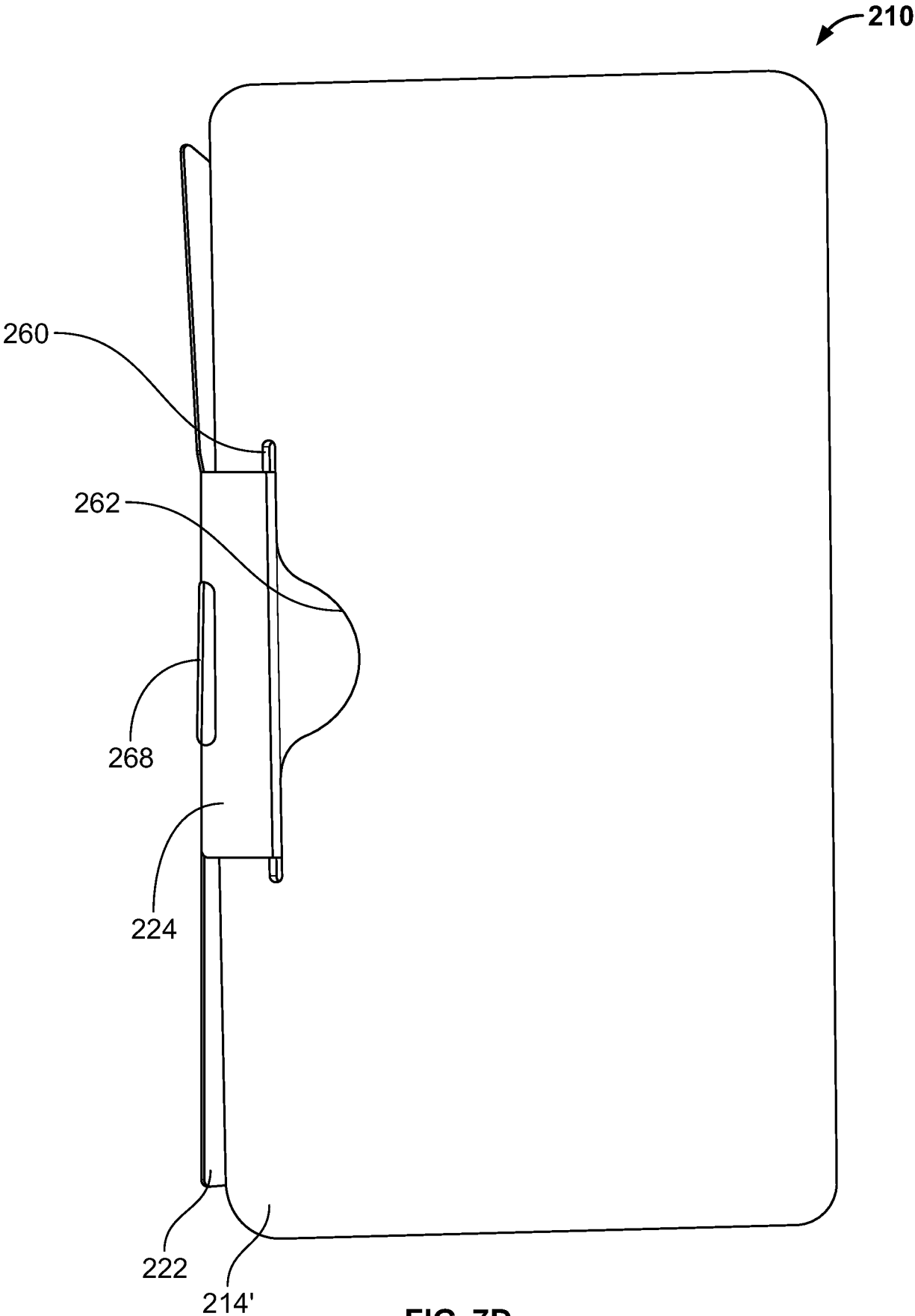


FIG. 7D

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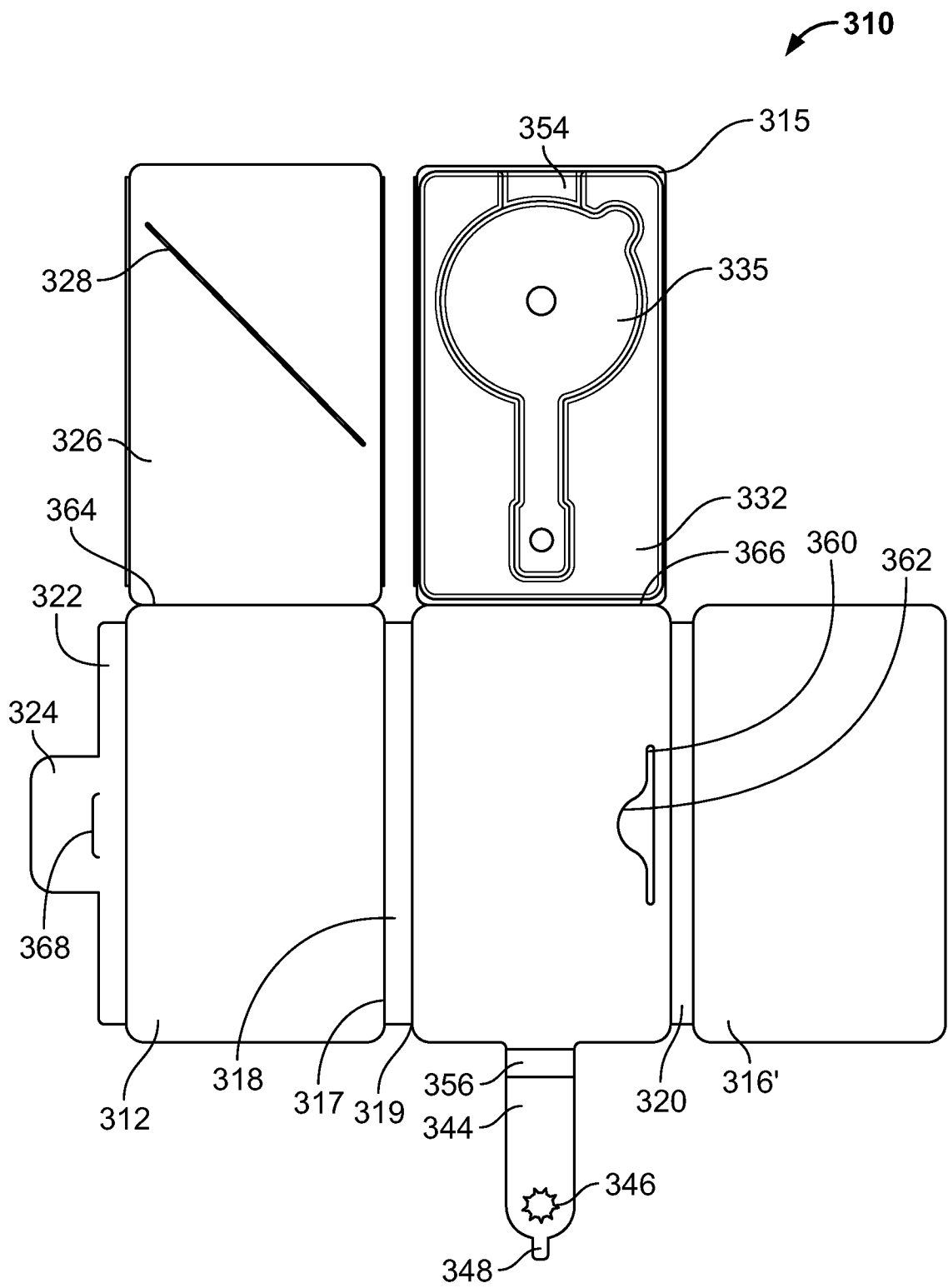


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2024/031071

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61F5/44 A61F5/445
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 283 284 B1 (CRANE ROBERT [US] ET AL) 4 September 2001 (2001-09-04) fig 2, col 7 line 25-50 -----	1,5-11
X	US 2016/193003 A1 (TODD RUSSELL J [US] ET AL) 7 July 2016 (2016-07-07) fig 1, 5, par 15-21 -----	1,5-11
A	US 2018/177626 A1 (ISRAELSON DORRIT DIANA [DK]) 28 June 2018 (2018-06-28) fig 4, 7b, 8b, par 39,40 ----- - / - -	1-11



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance;; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance;; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 September 2024

Date of mailing of the international search report

11/11/2024

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
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Authorized officer

Kickler, Nils

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2024/031071

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/163496 A1 (GRUM-SCHWENSEN CHRISTEN [DK] ET AL) 12 June 2014 (2014-06-12) fig 14,15,19, par 38-40 -----	1, 5 - 11
X	US D 452 628 S (STAUFFER TIMOTHY B [US]) 1 January 2002 (2002-01-01) fig 8, page 1 -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2024/031071

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims;; it is covered by claims Nos.:

1 - 11

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11

A packaging for a sensing accessory with a first panel and second foldable panel and an insert tray, wherein the insert tray is coupled to the second panel.

2. claims: 12-20

A packaging for a sensing accessory with a first panel and second foldable panel and an insert tray, further comprising a third panel, wherein the third panel extends from the first panel perpendicular to an inner edge where the first and second panel are connected, wherein the third panel folds over a first crease onto the first panel; a fourth panel, wherein the fourth panel extends from the second panel parallel to the third panel, wherein the fourth panel folds over a second crease onto the second panel, wherein the insert tray is mounted to the fourth panel.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2024/031071

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		US 2014163496 A1	12-06-2014
		WO 2013014231 A1	31-01-2013
US D452628	S	01-01-2002	NONE